

**National Capital Region Transportation Planning Board  
Metropolitan Washington Council of Governments**

**FY-2008 Network Documentation:  
Highway and Transit Network Development**

**DRAFT**

**September 19, 2008**

**Item 4A  
From the FY-2008 Unified Planning Work Program  
for Transportation Planning for  
the Metropolitan Washington Region**

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|  |                           |                    |
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### Agency

The Metropolitan Washington Council of Governments (COG) and the National Capital Region Transportation Planning Board (TPB).

COG serves as the regional planning organization for the Washington metropolitan area. COG works toward solutions to regional problems, especially those related to regional growth, transportation, housing, human services, and the environment. The TPB is the designated Metropolitan Planning Organization (MPO) for transportation planning in the Washington region. Members of the TPB include representatives of local governments; state transportation agencies; the Maryland and Virginia General Assemblies; the Washington Metropolitan Area Transit Authority; and non-voting members from the Metropolitan Washington Airports Authority and federal agencies.

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### Abstract

This report describes the development of highway and transit networks that represent the ground transportation system of the Washington, D.C. metropolitan area for the purposes of travel demand modeling. These networks are important inputs to the TPB travel demand models. COG's Geographic Information System (GIS) has been employed to pre-process and manage network components, and is used to link the transportation network development process to other TPB planning activities, including Cooperative Forecasting, Corridor Studies, Models Development, Congestion Monitoring, and the Regional Transportation Data Clearinghouse. This work program represents a continuation of a multi-year networks and models development plan that was formulated in FY-93 under the direction of the Travel Forecasting Subcommittee, a subcommittee of the Transportation Planning Board's Technical Committee.

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## **Chapter 1 Introduction**

The Metropolitan Washington Council of Governments (COG) serves as the regional planning organization for the Washington, D.C. metropolitan area. The National Capital Region Transportation Planning Board (TPB) is the designated Metropolitan Planning Organization (MPO) which functions to coordinate transportation planning among the various federal, state, and local agencies in the Washington region. The TPB maintains a four-step transportation planning model that is used to evaluate transportation plans and programs, including air quality planning, in accordance with federal requirements. The TPB's travel model is periodically refined as more advanced methods emerge from the research community. The transportation networks that inform TPB's travel model are also refined and updated on an annual basis. This report documents work activities completed by COG/TPB staff in accordance with the transportation network development element identified in the *FY-2008 Unified Planning Work Program (UPWP)*.

Network development activities primarily support transportation modeling that the TPB undertakes each year to ascertain how well the Constrained Long Range Plan (CLRP) and Transportation Improvement Plan (TIP) meet air quality objectives in accordance with federal requirements. This analysis is formally known as the Air Quality Conformity Determination. As part of these activities, base year transit and highway networks are updated annually with information provided by regional transit providers and transportation agencies.

The conformity cycle begins during winter and concludes in the fall of the next year with TPB review and approval of public comments on the draft CLRP and TIP, and adoption of the Air Quality Conformity Determination. Since transportation networks that are inputs to the conformity analysis process are developed in one fiscal year and adopted by the TPB in the next, this report documents Version 2.2 model<sup>1</sup> networks and data files that were developed in FY-2008 as inputs to the 2007 CLRP and FY2008-2013 TIP. Exhibit 1-1 presents a time-line chart of work activities conducted in support of the Air Quality Conformity assessment.

The remainder of this chapter provides overviews of the transportation network development program, TPB/Version 2.2 transportation networks, and new network developments. Chapter 2 presents an overview of facilities coded in networks representing the 2007 CLRP and FY2008-2013 TIP, as well as related network statistics. Chapter 3 describes Version 2.2 model network files that support network building and fare development. File formats for network input files are also presented in this chapter. Chapter 4 describes an initiative underway to streamline the transfer of transit data between TPB staff and regional transit providers. The chapter also details a GIS-related project that has been initiated to improve network development procedures. These projects will substantially impact the way in which future network development activities will be undertaken.

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<sup>1</sup> COG/TPB Travel Forecasting Model, Version 2.2 Specification, Validation, and User's Guide, January 18, 2008.

**Exhibit 1-1 Time-Line for FY-2008 Network Development and Air Quality Conformity Assessment Activities**

|  | FY-2008                         |      |       |      |      |      |                                  |      |      |       |     |      |
|--|---------------------------------|------|-------|------|------|------|----------------------------------|------|------|-------|-----|------|
|  | Calendar 2007                   |      |       |      |      |      | Calendar 2008                    |      |      |       |     |      |
|  | July                            | Aug. | Sept. | Oct. | Nov. | Dec. | Jan.                             | Feb. | Mar. | April | May | June |
| <b>Transportation Network Maintenance:</b>                       |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
| 1 Network Review by state and local transportation agencies.     |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
| 2 Network review by Model, GIS, and Systems applications groups. |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
| 3 Update GIS-based highway network database.                     |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
| 4 Solicit transit information from regional transit providers.   |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
| 5 Update catalogues and transit files with current data.         |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
| <b>Air Quality Conformity Process:</b>                           |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
|  | <b>2007 CLRP/ FY2008-13 TIP</b> |      |       |      |      |      | <b>2008 CLRP / FY2009-14 TIP</b> |      |      |       |     |      |
| 6 Request CLRP and TIP project submissions.                      |                                 |      |       |      |      | X    |                                  |      |      |       |     |      |
| 7 Deadline for project submissions.                              |                                 |      |       |      |      |      | X                                |      |      |       |     |      |
| 8 Public comment on project submissions begins.                  |                                 |      |       |      |      |      | X                                |      |      |       |     |      |
| 9 Public comment on project submissions ends.                    |                                 |      |       |      |      |      |                                  | X    |      |       |     |      |
| 10 Develop transportation networks based on project submissions. |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
| 11 Execute travel demand and emissions models.                   |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
| 12 Summarize and analyze results.                                |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
| 13 Prepare CLRP and TIP draft documents.                         |                                 |      |       |      |      |      |                                  |      |      |       |     |      |
| 14 Begin public comment on conformity results.                   |                                 |      |       |      |      | X    |                                  |      |      |       |     | X    |
| 15 End public comment on conformity results.                     |                                 |      |       |      |      |      |                                  | X    |      |       |     |      |
| 16 Adoption of CLRP and TIP by TPB.                              |                                 |      |       |      |      |      |                                  | X    |      |       |     |      |

**Legend:**

|   |   |
|---|---|
| <b>Transportation Network Maintenance</b>         |   |
| <b>Air Quality Conformity Assessment Activity</b> |   |
| <b>Transportation Planning Board Activity</b>     | X |

Ref: FY07\_Timeline.xls



## **1.1 Overview of Network Development**

Given the importance and regularity of the COG/TPB annual air quality conformity studies, network development has evolved into a cycle of activities around this yearly event. During late summer and fall, transit and highway network summaries from the previous conformity study are evaluated and network files are updated as per the latest transit schedules and the most recent TIP changes. A solicitation of transit data from the local providers is also made during the fall to ensure that the base-year transit files are verified (or refreshed) with the most recent data. During winter, the development of planned improvements for the next TIP cycle is formulated through the COG/TPB process. Network coding for the next conformity cycle normally occurs in March, in preparation for model executions commencing in the spring or summer.

In FY-2008, work activities focused on preparing inputs for the 2007 CLRP and FY2008 to 2013 TIP, and included the following tasks: Review of project submissions and their organization into appropriate forecast years, according to the project completion date as estimated by the programming agency; Update of the GIS-based highway database and generation of network data for 2002, 2008, 2009, 2010, 2020, and 2030; Updating and editing transit files for 2002, 2008, 2009, 2010, 2020, and 2030 (forecast year files based on transit files for 2006); Build networks and review for accuracy; and Revising highway network toll assumptions and updating transit fares as necessary.

Transportation network development is a lengthy process involving the collection of data from a number of agencies in the region and updating of existing data sets to the appropriate years. The process also entails the application of ArcInfo, ArcGIS, SAS, FORTRAN, and CUBE/TP+ programs to update, generate, and build highway and transit network files. Automated checking procedures ensure that changes in network link attributes between years are reasonable. A number of intermediate development steps are not discussed in this report. Instead, the intention of this report is to provide information on the files that result at the end of the development process, which directly support travel modeling.

The network development process continues to be facilitated by improvements in communications technology and emerging software tools. Information transfer between agencies is increasingly being conducted in electronic form. There has been an increased reliance on using the Internet to obtain updated information in a timely manner. Staff has also been relying upon GIS-based applications to manage and develop highway network files in a more accurate and consistent manner, and has used TPB's Regional Bus Subcommittee<sup>2</sup> as a forum to streamline the transfer of bus transit data between transit providers and TPB Staff.

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<sup>2</sup> The mission of the Regional Bus Subcommittee is to provide a permanent process for the coordination of bus planning throughout the Washington region, and for incorporating regional bus plans into the Constrained Long Range Plan (CLRP) and Transportation Improvement Program (TIP).

## **1.2 Overview of Version 2.2 Model Transportation Networks**

Transportation forecasting models are used to estimate vehicle and transit-person volumes through a process of finding equilibrium between demand and supply. Networks are used in the modeling process as abstractions of the regional highway and transit system. As such, they can be viewed as the ‘supply-side’ of the transportation model. Highway networks are generally developed to conform to a pre-defined TAZ system. Therefore, network coding is finer for developed areas containing physically small zones and coarser for less-developed areas containing larger zones. The current study area for Washington, D.C., referred to as the 2,191-zone modeled area, is shown as Exhibit 1-2. The cordon encompasses a land area of 6,800 square miles and is comprised of 22 jurisdictions<sup>3</sup>, spanning the District of Columbia, Northern Virginia, suburban Maryland, and one county in West Virginia.

Typical COG/TPB highway networks consist of approximately 20,000 directional highway links (excluding centroid connectors). Roads are classified into four major types: freeways, arterials, collectors, and locals. COG/TPB highway networks typically include all freeways and arterials, most collectors, and some local roads.

Beyond the design of the zone system, transportation networks are developed with two basic considerations: the requirements of the transportation model, and the requirements and/or constraints of the software used to apply the model. Networks are used to estimate service levels (e.g., travel times and costs) between TAZ’s, which figure into the distribution of travel and the choice of mode. They are also necessary for determining the choice of route for the modeled modes and the development of travel volumes.

In FY-2008, transportation networks were developed to meet specification for TPB’s most recently developed travel model, Version 2.2. The Version 2.2 model supplanted the previous Version 2.1D #50 travel model which was released in November 2004 (COG/TPB 2004.11.17A, B). Since the TPB’s approach to models development is one that favors incremental change to currently adopted application methods, the Version 2.2 model is very similar in structure and operation to the previous Version 2.1D#50 model.

The Version 2.2 model is a four-step travel model, applied on the 2,191-zone modeled area. Three highway networks are required representing weekday operations occurring in the AM peak period (6:00-9:00 AM), the PM peak period (4:00-7:00 PM), and the off-peak period (comprised of the remaining 18 hours).

Transit networks representing weekday operations in the peak and off-peak periods are also required

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<sup>3</sup> The expanded cordon bisects one of the 22 jurisdictions, Spotsylvania County. Its northern portion (approximately north of VA 606) is within the modeled area and the remaining area is outside. The expanded cordon includes all other jurisdictions in their entirety.

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for the model. The one-hour time period from 7:00 AM to 7:59 AM<sup>4</sup> is used to represent peak period conditions. Off-peak period conditions are represented by a five-hour time period from 10:00 AM to 2:59 PM.

Highway network coding reflects operational differences between the three periods. Examples of operational differences may include directionality changes (alternating one-way/two-way operations), lane configuration changes, or vehicle prohibition changes (for example, facilities that are dedicated for HOV facilities during peak periods, but revert to general use operations during non-peak times).

The travel model requires zone-to-zone transit times and fares (known collectively as “skims”) representing AM peak period conditions and off-peak conditions. AM and off-peak transit networks are developed and are built directly over the highway networks. Transit paths are categorized into two access markets: walk-access and drive-access.

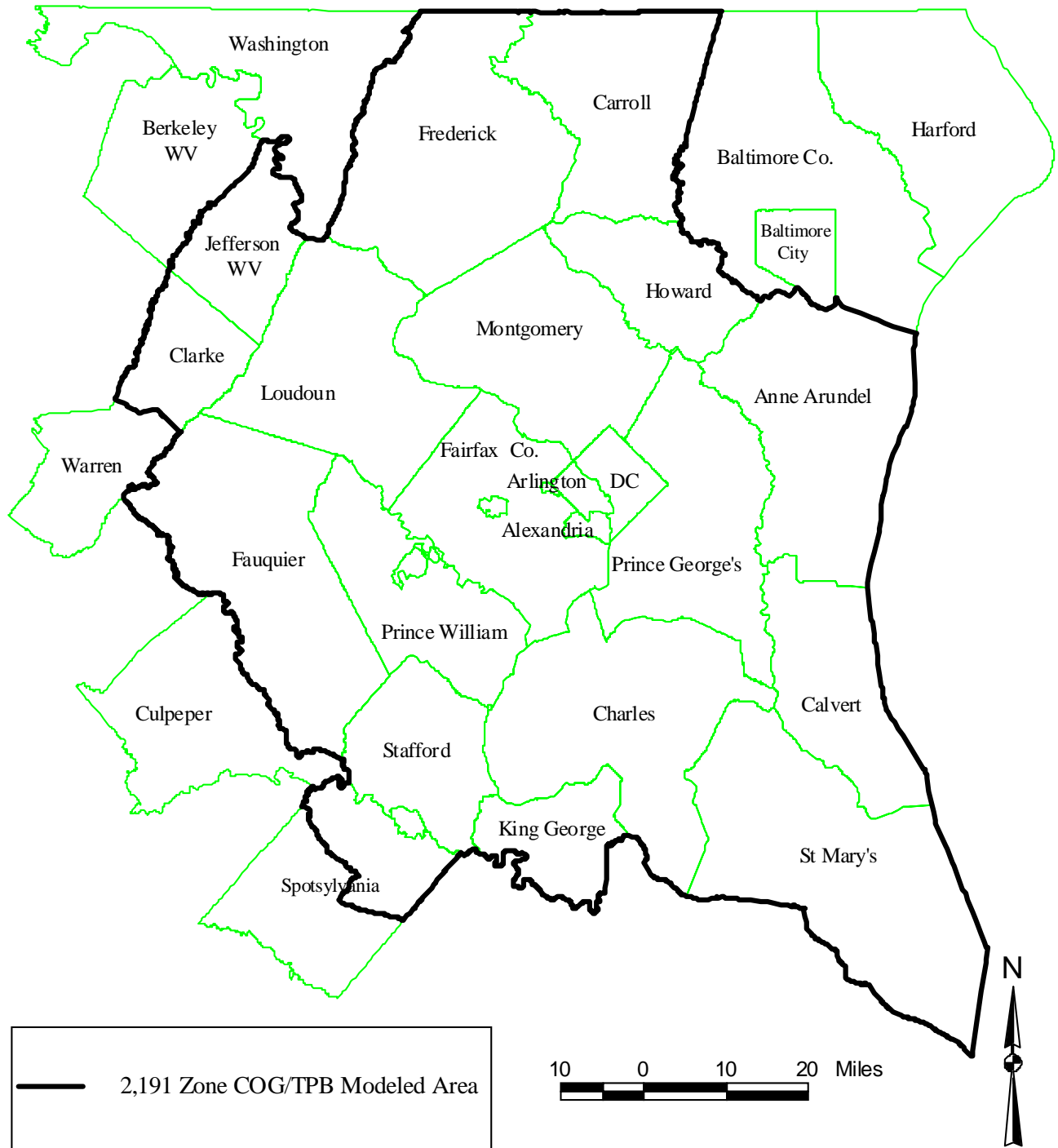
The files that result from the network development process are highway link files, transit line files, transit network support files such as rail (non-highway links) links and transfer links. Because the transit fare estimation used by COG/TPB models is derived from transit path-based information, transit fare development is implicitly considered as a component of the network building process. Therefore, files supporting the estimation of transit fares are also prepared in network development.

The files that support network building and the fare development processes of the Version 2.2 model are described in greater detail in Chapter 3.

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<sup>4</sup> In the case of secondary local and secondary express commuter bus service, which generally originates in the outer reaches of the study area and begins much earlier than 7 AM, the AM peak period definition is relaxed to an earlier period for which service is most concentrated.

**Exhibit 1-2: COG/TPB Modeled Area - 2,191-Zone System**



### **1.3 New Network Developments**

This section details refinements that were made in FY-2008 to transportation networks that were inputs to the 2007 CLRP and FY2008-2013 TIP, approved by the TPB in January 2008. Prior TPB model versions have required that transit line files be provided in the older MINUTP TRNPTH format. Transit line files developed for the Version 2.2 model now reflect the newer TP+ TRNBUILD format. This newer format will allow for more accurate and consistent coding of transit lines over time. For example, using the newer format, one can designate bus stops as board-only or alight-only (useful for accurately coding express bus service). Similarly, one can code run times for sub-sections of a route, not just for the entire route, a feature useful for the accurate depiction of transit lines that undergo extensions or cutbacks.

Several legacy FORTRAN programs have been converted into TP+ scripts. These include programs historically used for computing zonal transit fares (MFARE1 and MFARE2). These programs have been converted to TP+ scripts to facilitate transparency and to allow for flexibility in the implementation of future program modifications. The transit fares scripts are named MFARE1.S and MFARE2.S. As a result COG/TPB's bus fare zone numbering system has been updated. The numbering scheme for bus fare zones was revised for use with the Version 2.2 model. Bus fare zones are now numbered 1 - 21 as opposed to 1,1 – 3,7. Some file formats of fare-related input files have been updated as well.

### **1.4 Zone and Node Numbering Systems**

The current area system includes 2,191 TAZ's (transportation analysis zones). The area system includes both internal TAZ and external stations. Because the system provides for "spare" zones that may be utilized for future studies, the number of active internal TAZs is 1,972. The TAZ's are numbered sequentially in ranges corresponding to the modeled jurisdictions. An equivalence table indicating the relationship of TAZ to jurisdictions is shown in Exhibit 1-3. The exhibit indicates that the TAZ range allocation for each jurisdiction is inclusive of both active and spare zones. The exhibit also indicates that the area system contains 47 external stations, numbered from 2145 to 2191. The locations of external stations are shown in Exhibits 1-4 and 1-5.

A network node numbering system was established for the highway and transit networks in 1997 as a way to locate nodes and minimize the possibility of "tunnels". The node numbering system is revised yearly as nodes are added to highway and transit networks. Highway node ranges have been developed by jurisdiction, and are further distinguished as General use facilities, HOV facilities, Interchange ramps, and Regional variably priced lane facilities. Node ranges corresponding to transit network elements are also defined and represent Park-and-Ride facilities and Metrorail, Commuter rail, Light rail, and Bus rapid transit stations. Highway and transit network node ranges are summarized in Exhibit 1-6.

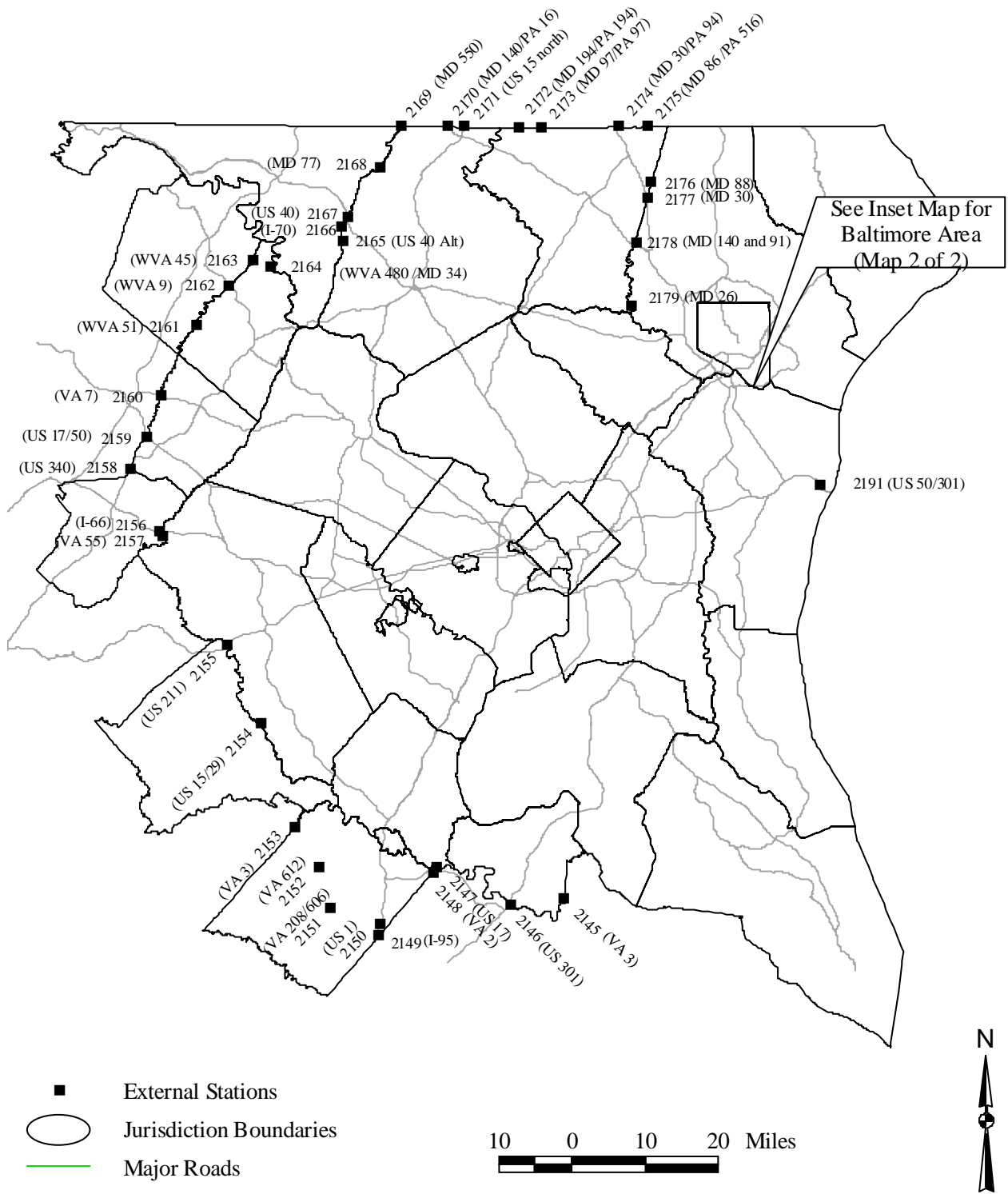
### **Exhibit 1-3: Transportation Analysis Zone (TAZ) and Jurisdiction Equivalency Table**

*FY-2008 Network Documentation: Highway and Transit Network Development*

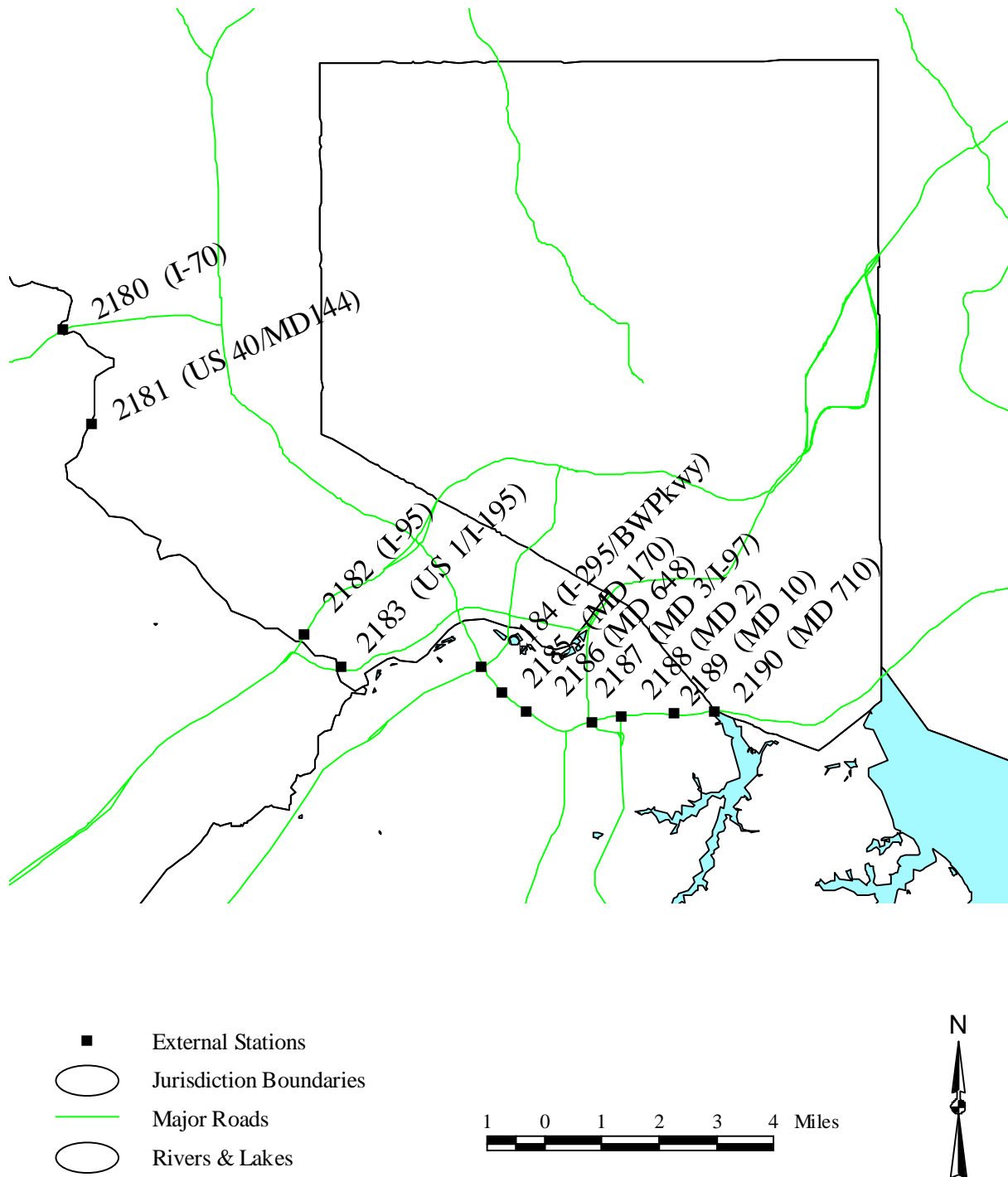
| <b>JURISDICTION</b>                                       | <b>JURIS. CODE</b> | <b>TAZ RANGE</b> | <b>No. of TAZ</b>    | <b>UNUSED TAZ</b> |
|---|--------------------|------------------|----------------------|-------------------|
| District of Columbia                                      | 0                  | 1-319            | 319                  | ----              |
| Montgomery Co., Md.                                       | 1                  | 320-627          | 308                  | 628-639           |
| Prince Georges Co., Md.                                   | 2                  | 640-1020         | 381                  | 1021-1029         |
| Arlington Co., Va.  | 3                  | 1230-1311        | 82                   | 1312-1329         |
| City of Alexandria, Va.                                   | 4                  | 1330-1389        | 60                   | 1390-1399         |
| Fairfax Co., Va.  | 5                  | 1400-1755        | 356                  | 1756-1779         |
| Loudoun Co., Va.  | 6                  | 1780-1905        | 126                  | 1906-1919         |
| Prince William Co., Va.                                   | 7                  | 1920-2061        | 142                  | 2062-2069         |
| ----  | 8                  | ----             | ----                 | ----              |
| Frederick Co., Md.  | 9                  | 1030-1053        | 24                   | 1054-1059         |
| Howard Co., Md.   | 10                 | 1080-1099        | 20                   | 1100-1109         |
| Anne Arundel Co., Md.                                     | 11                 | 1110-1142        | 33                   | 1143-1149         |
| Charles Co., Md.  | 12                 | 1200-1223        | 24                   | 1224-1229         |
| ----  | 13                 | ----             | ----                 | ----              |
| Carroll Co., Md.  | 14                 | 1060-1073        | 14                   | 1074-1079         |
| Calvert Co., Md   | 15                 | 1150-1163        | 14                   | 1164-1169         |
| St. Mary's Co., Md.                                       | 16                 | 1170-1190        | 21                   | 1191-1199         |
| King George Co., Va.                                      | 17                 | 2070-2074        | 5                    | 2075-2079         |
| City of Fredericksburg, Va.                               | 18                 | 2100-2101        | 2                    | 2102-2104         |
| Stafford Co., Va.   | 19                 | 2080-2093        | 14                   | 2094-2099         |
| Spotsylvania Co., Va.                                     | 20                 | 2105-2110        | 6                    | 2111-2114         |
| Fauquier Co., Va.   | 21                 | 2115-2125        | 11                   | 2126-2129         |
| Clarke Co., Va.   | 22                 | 2130-2132        | 3                    | 2133-2134         |
| Jefferson Co., WV.  | 23                 | 2135-2141        | 7                    | 2142-2144         |
| <b>TOTAL INTERNAL ZONES</b>                               |                    |                  | <b>1972</b>          |                   |
| <b>EXTERNAL STATIONS</b>                                  |                    | <b>2145-2191</b> |                      |                   |
| <b>TOTAL ZONES / STATIONS<br/>(Total Used&amp;Unused)</b> |                    |                  | <b>2019<br/>2191</b> |                   |

Ref: EXH1-3.xls

**Exhibit 1-4: Location of External Stations in the Modeled Area Map 1 of 2**



**Exhibit 1-5: Location of External Stations in the Modeled Area  
(Inset Map for Baltimore Area) Map 2 of 2**





**Exhibit 1-6: Node Ranges for the Modeled Area**

| <b>I. Zone Centroids</b>                                   |       |       |
|--|-------|-------|
| A. Zones   | 1     | 2191  |
| <b>II. Highway Nodes: General Use (Non-HOV) Facilities</b> |       |       |
| A. District of Columbia                                    | 8400  | 9999  |
| B. Montgomery County                                       | 3000  | 3999  |
|  | 15000 | 15299 |
| C. Prince George's County                                  | 4000  | 4999  |
| D. Arlington County  | 5000  | 5499  |
| E. Alexandria  | 5500  | 5999  |
| F. Fairfax County  | 6000  | 6385  |
|  | 6500  | 6899  |
|  | 10501 | 10900 |
| G. Prince William County                                   | 6386  | 6499  |
|  | 7000  | 7100  |
|  | 10151 | 10200 |
|  | 10401 | 10450 |
|  | 16000 | 16199 |
| H. Loudoun County  | 6900  | 6999  |
|  | 7101  | 7299  |
|  | 15600 | 15799 |
| I. Frederick County  | 13200 | 13499 |
| J. Carroll County  | 13500 | 13599 |
| K. Howard County   | 13600 | 13799 |
| L. Anne Arundel County                                     | 13000 | 13199 |
|  | 13800 | 13999 |
| M. Calvert County  | 14000 | 14099 |
| N. Saint Mary's County                                     | 14100 | 14199 |
| O. Charles County  | 14200 | 14399 |
| P. King George County                                      | 14400 | 14499 |
| Q. Stafford / City of Fredericksburg                       | 14500 | 14699 |
| R. Spotsylvania County                                     | 14700 | 14799 |
| S. Fauquier County   | 14800 | 14899 |
| T. Clarke County   | 14900 | 14949 |
| U. Jefferson County  | 14950 | 14999 |

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**Exhibit 1-6: Node Ranges for the Modeled Area**

| <b>III. Highway Nodes: HOV Facilities</b>   |       |         |
|---|-------|---------|
| A. I-95 Fairfax Co., - Outside the Beltway  | 10000 | - 10150 |
| B. I-95 Stafford Co.                        | 10201 | - 10250 |
| C. I-66 Fairfax Co., - Outside the Beltway  | 10251 | - 10400 |
| D. I-66 Fauquier Co.                        | 10451 | - 10500 |
| E. I-267 Dulles Toll Road                   | 10901 | - 11550 |
| F. I-95 Prince William Co.                  | 11551 | - 11650 |
| G. US 50 (MD)                               | 11651 | - 11680 |
| H. MD 4                                     | 11681 | - 11694 |
| I. US 50 (MD)                               | 11695 | - 11700 |
| J. Maryland - HOV Alternatives              | 11701 | - 11709 |
| K. MD 210                                   | 11710 | - 11753 |
| L. Maryland ICC                             | 11754 | - 11835 |
| M. Franconia-Springfield Parkway            | 11836 | - 11843 |
| N. Virginia - HOV Alternatives              | 11844 | - 11884 |
| O. US 1 (VA) Outside Beltway                | 11885 | - 11893 |
| P. Virginia - HOV Alternatives              | 11900 | - 11999 |
| Q. I-66 Inside the Beltway                  | 12000 | - 12099 |
| R. District of Columbia - HOV Alternatives  | 12100 | - 12200 |
| S. I-395 Fairfax Co. - Inside the Beltway   | 12201 | - 12300 |
| T. I-395 Alexandria - Inside the Beltway    | 12301 | - 12400 |
| U. I-395 Arlington - Inside the Beltway     | 12401 | - 12500 |
| V. I-270 (MD)                               | 12501 | - 12700 |
| W. I-495 Capital Beltway                    | 12701 | - 12882 |
| X. US 1 (VA) Inside Beltway                 | 12883 | - 12899 |
| Y. Maryland ICC                             | 12900 | - 12999 |
| Z. Maryland ICC                             | 15307 | - 15449 |
| AA. I-270 (MD)                              | 15450 | - 15475 |
| AB. Maryland ICC                            | 15476 | - 15599 |
| AC. Fairfax Parkway                         | 15825 | - 15860 |
| AD. Maryland ICC                            | 18500 | - 18649 |
| <b>IV. Highway Nodes: Interchange Ramps</b> |       |         |
| A. Montgomery County                        | 16500 | - 16699 |
| B. Prince George's County                   | 16700 | - 16899 |
| C. Frederick County                         | 16900 | - 16999 |
| D. Calvert County                           | 17000 | - 17099 |
| E. Charles County                           | 17100 | - 17199 |
| F. Alexandria                               | 17200 | - 17299 |
| G. Arlington County                         | 17300 | - 17399 |
| H. Fairfax County                           | 17400 | - 17599 |
| I. Prince William County                    | 17600 | - 17799 |
| J. Loudoun County                           | 17800 | - 17999 |
| K. Stafford / City of Fredericksburg        | 18000 | - 18199 |
| L. District of Columbia                     | 18200 | - 18399 |

Ref: c8exh 1-6.xls

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**Exhibit 1-6: Node Ranges for the Modeled Area**

| <b>V. Highway Nodes: Regional Variably Priced Lanes</b>   |   |  |
|---|---|--|
| 1. Capital Beltway (I-495/I-95) Inner Loop  | 23000<br>23002<br>23004<br>23006 - 23093        | Hot-Toll Lanes<br>Hot-Toll Lanes<br>Hot-Toll Lanes<br>Hot-Toll Lanes |
| 1a. Capital Beltway (I-495/I-95) Outer Loop   | 23001<br>23003<br>23005<br>23101 - 23196        | Hot-Toll Lanes<br>Hot-Toll Lanes<br>Hot-Toll Lanes<br>Hot-Toll Lanes |
| 2. I-270 (I-70 to Capital Beltway) South-bound  | 23300 - 23324                                   | Toll Lanes   |
| 2a. I-270 (I-70 to Capital Beltway) North-bound   | 23350 - 23375                                   | Toll Lanes   |
| 3. I-95 MD (Capital Beltway to Baltimore Beltway) South-bound   | 23400 - 23429                                   | Toll Lanes   |
| 3a. I-95 MD (Capital Beltway to Baltimore Beltway) North-bound  | 23450 - 23473                                   | Toll Lanes   |
| 4. US Route 50 (I-395 to Chesapeake Bay Bridge) East-bound  | 23500 - 23561                                   | Toll Lanes   |
| 4a. US Route 50 (I-395 to Chesapeake Bay Bridge) East-bound   | 23580 - 23591                                   | Parallel General Lanes   |
| 4b. US Route 50 (I-395 to Chesapeake Bay Bridge) West-bound   | 23600 - 23669                                   | Toll Lanes   |
| 4c. US Route 50 (I-395 to Chesapeake Bay Bridge) West-bound   | 23669 - 23699                                   | Parallel General Lanes   |
| 5. MD Route 5 (US 301 to MD Route 5 at I-495) North-bound   | 23700 - 23729                                   | Toll Lanes   |
| 5a. MD Route 5 (US 301 to MD Route 5 at I-495) North-bound  | 23730 - 23749                                   | Parallel General Lanes   |
| 5b. MD Route 5 (US 301 to MD Route 5 at I-495) South-bound  | 23750 - 23771                                   | Toll Lanes   |
| 5c. MD Route 5 (US 301 to MD Route 5 at I-495) South-bound  | 23780 - 23799                                   | Parallel General Lanes   |
| 6. Intercounty Connector (Entire Length)  | 12900 - 12999<br>15476 - 15599<br>18500 - 18649 | Toll Facility<br>Toll Facility<br>Toll Facility                      |
| 7. I-295/Anacostia Fwy./Kenilworth Ave/S. Capitol St. Bridge (Cap. Beltway to US 50) South-bound      | 23800 - 23824                                   | Hot Lanes  |
| 7a. I-295/Anacostia Fwy./Kenilworth Ave/S. Capitol St. Bridge (Cap. Beltway to US 50) South-bound     | 23830 - 23849                                   | Parallel General Lanes   |
| 7b. I-295/Anacostia Fwy./Kenilworth Ave/S. Capitol St. Bridge (Cap. Beltway to US 50) North-bound     | 23850 - 23874                                   | Hot Lanes  |
| 7c. I-295/Anacostia Fwy./Kenilworth Ave/S. Capitol St. Bridge (Cap. Beltway to US 50) North-bound     | 23880 - 23899                                   | Parallel General Lanes   |
| 8. I-95 (Caroline/Spotsylvania to Stafford/PW Line) North-bound                                       | 10202 - 10248                                   | Hot Lanes (Even No's)  |
| 8a. I-95 (Caroline/Spotsylvania to Stafford/PW Line) South-bound                                      | 10201 - 10249                                   | Hot Lanes (Odd No's)   |
| 9. I-395 (DC), 11th Street and Penn. Ave Bridge (14th St Bridge to I-295 and US Route 50) East-bound  | 29250 - 29270                                   | Hot Lanes  |
| 9a. I-395 (DC), 11th Street and Penn. Ave Bridge (14th St Bridge to I-295 and US Route 50) East-bound | 29350 - 29367                                   | Parallel General Lanes   |
| 9b. I-395 (DC), 11th Street and Penn. Ave Bridge (14th St Bridge to I-295 and US Route 50) West-bound | 29450 - 29471                                   | Hot Lanes  |
| 9c. I-395 (DC), 11th Street and Penn. Ave Bridge (14th St Bridge to I-295 and US Route 50) West-bound | 29550 - 29556                                   | Parallel General Lanes   |
| 10. I-395 (Capital Beltway to 14th St Bridge) North-bound   | 29200 - 29249                                   | Hot Lanes  |
| 10a. I-395 (Capital Beltway to 14th St Bridge) North-bound  | 29300 - 29349                                   | Parallel General Lanes   |
| 10b. I-395 (Capital Beltway to 14th St Bridge) South-bound  | 29400 - 29449                                   | Hot Lanes  |
| 10c. I-395 (Capital Beltway to 14th St Bridge) South-bound  | 29500 - 29549                                   | Parallel General Lanes   |
| 11. MD Route 4 (US 301 to I-495) East-bound   | 23200 - 23225                                   | Highway Nodes: Toll Lanes  |
| 11a. MD Route 4 (US 301 to I-495) East-bound  | 23230 - 23240                                   | Parallel General Lanes   |
| 11b. MD Route 4 (US 301 to I-495) West-bound  | 23250 - 23271                                   | Highway Nodes: Toll Lanes  |
| 11c. MD Route 4 (US 301 to I-495) West-bound  | 23280 - 23294                                   | Parallel General Lanes   |
| 12. MD Route 210 (MD 228 to I-495) Southbound   | 24000 - 24031                                   | Highway Nodes: Toll Lanes  |
| 12a. MD Route 210 (MD 228 to I-495) Southbound  | 24040 - 24047                                   | Parallel General Lanes   |
| 12b. MD Route 210 (MD 228 to I-495) Northbound  | 24060 - 24091                                   | Highway Nodes: Toll Lanes  |
| 12c. MD Route 210 (MD 228 to I-495) Northbound  | 24092 - 24094                                   | Parallel General Lanes   |
| 13. US 301 (Nice Bridge to US50) South-bound  | 24100 - 24199                                   | Highway Nodes: Toll Lanes  |
| 13a. US 301 (Nice Bridge to US50) South-bound   | 24200 - 24259                                   | Parallel General Lanes   |
| 13b. US 301 (Nice Bridge to US50) North-bound   | 24300 - 24398                                   | Highway Nodes: Toll Lanes  |
| 13c. US 301 (Nice Bridge to US50) North-bound   | 24400 - 24495                                   | Parallel General Lanes   |

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**Exhibit 1-6: Node Ranges for the Modeled Area**

| <b>V. Highway Nodes: Regional Variably Priced Lanes continued</b>   |                        |                        |
|---|------------------------|------------------------|
| 14. I-66 (Warren/Fauquier Line to TR Bridge) West-bound and (SE/SW Freeway, Maine Ave, Indep Ave, and Rock Creek Pkwy)  | 25000 - 25041          | Hot Lanes              |
| 14a. I-66 (Warren/Fauquier Line to TR Bridge) West-bound and (SE/SW Freeway, Maine Ave, Indep Ave, and Rock Creek Pkwy) | 25100 - 25115          | Parallel General Lanes |
| 14b. I-66 (Warren/Fauquier Line to TR Bridge) East-bound and (SE/SW Freeway, Maine Ave, Indep Ave, and Rock Creek Pkwy) | 25200 - 25241          | Hot Lanes              |
| 14c. I-66 (Warren/Fauquier Line to TR Bridge) East-bound and (SE/SW Freeway, Maine Ave, Indep Ave, and Rock Creek Pkwy) | 25300 - 25350          | Parallel General Lanes |
| 15. Dulles Toll Road (VA Route 28 to I-66) West-bound   | 26000 - 26007          | Hot Lanes              |
| 15a. Dulles Toll Road (VA Route 28 to I-66) West-bound  | 26100 - 26199          | Parallel General Lanes |
| 15b. Dulles Toll Road (VA Route 28 to I-66) East-bound  | 26200 - 26207          | Hot Lanes              |
| 15c. Dulles Toll Road (VA Route 28 to I-66) East-bound  | 26300 - 26399          | Parallel General Lanes |
| 16. VA Route 28 (I-66 to VA Route 7) South-bound  | 27000 - 27047          | Hot Lanes              |
| 16a. VA Route 28 (I-66 to VA Route 7) South-bound   | 27100 - 27137          | Parallel General Lanes |
| 16b. VA Route 28 (I-66 to VA Route 7) North-bound   | 27200 - 27248          | Hot Lanes              |
| 16c. VA Route 28 (I-66 to VA Route 7) North-bound   | 27160 - 27162          | Parallel General Lanes |
| 17. VA Route 7 (Dulles Toll Road to US Route 15) West-bound   | 27300 - 27372          | Hot Lanes              |
| 17a. VA Route 7 (Dulles Toll Road to US Route 15) West-bound  | 27400 - 27464          | Parallel General Lanes |
| 17b. VA Route 7 (Dulles Toll Road to US Route 15) West-bound  | 27500 - 27572          | Hot Lanes              |
| 17c. VA Route 7 (Dulles Toll Road to US Route 15) West-bound  | 27600 - 27649          | Parallel General Lanes |
| 18. Fairfax County Parkway (VA Route 7 to I-66) South-bound   | 28100 - 28154          | Hot Lanes              |
| 18a. Fairfax County Parkway (VA Route 7 to I-66) South-bound  | 28200 - 28233          | Parallel General Lanes |
| 18b. Fairfax County Parkway (VA Route 7 to I-66) North-bound  | 28300 - 28353          | Hot Lanes              |
| 18c. Fairfax County Parkway (VA Route 7 to I-66) North-bound  | 28400 - 28440          | Parallel General Lanes |
| 19. Fran/Sprfield Pkwy (Sydenstricker Rd to Frontier Dr.) W-bound   | 28170 - 28192          | Hot Lanes              |
| 19a. Fran/Sprfield Pkwy (Sydenstricker Rd to Frontier Dr.) W-bound  | 28250 - 28262          | Parallel General Lanes |
| 19b. Fran/Sprfield Pkwy (Sydenstricker Rd to Frontier Dr.) E-bound  | 28370 - 28392          | Hot Lanes              |
| 19c. Fran/Sprfield Pkwy (Sydenstricker Rd to Frontier Dr.) E-bound  | 28460 - 28473          | Parallel General Lanes |
| 20. Braddock Road (Burke Lake Road to I-95) West-bound  | 29000 - 29009          | Hot Lanes              |
| 20a. Braddock Road (Burke Lake Road to I-95) West-bound   | 29050 - 29059          | Parallel General Lanes |
| 20b. Braddock Road (Burke Lake Road to I-95) East-bound   | 29100 - 29109          | Hot Lanes              |
| 20c. Braddock Road (Burke Lake Road to I-95) East-bound   | 29150 - 29155          | Parallel General Lanes |
| <b>Bridges</b>  | <b>A-Node - B-Node</b> |                        |
| 21. Chain Bridge  | 9074 - 9238            | Hot Lanes              |
| 22. Key Bridge  | 9000 - 9338            | Hot Lanes              |
| 23. Memorial Bridge   | 8692 - 9327            | Hot Lanes              |
| 24. East Capitol St. Bridge (Whitney Young Memorial Bridge)   | 9376 - 9631            | Hot Lanes              |
| 25. Benning Road Bridge   | 9380 - 9677            | Hot Lanes              |
| 26. South Capitol St. Bridge (Frederick Douglass Bridge) W-bound  | 23873 - 23874          | Hot Lanes              |
| 26a. South Capitol St. Bridge (Frederick Douglass Bridge) W-bound   | 23881 - 23882          | Parallel General Lanes |
| 26b. South Capitol St. Bridge (Frederick Douglass Bridge) E-bound   | 23824 - 23823          | Hot Lanes              |
| 26c. South Capitol St. Bridge (Frederick Douglass Bridge) E-bound   | 9782 - 9844            | Parallel General Lanes |
| 27. Pennsylvania Ave. Bridge (John Phillip Sousa Bridge) W-bound  | 29471 - 29470          | Hot Lanes              |
| 27a. Pennsylvania Ave. Bridge (John Phillip Sousa Bridge) W-bound   | 9372 - 18255           | Parallel General Lanes |
| 27b. Pennsylvania Ave. Bridge (John Phillip Sousa Bridge) E-bound   | 29269 - 29270          | Hot Lanes              |
| 27c. Pennsylvania Ave. Bridge (John Phillip Sousa Bridge) E-bound   | 29365 - 29367          | Parallel General Lanes |

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**Exhibit 1-6: Node Ranges for the Modeled Area**

|  |               |
|--|---------------|
| <b>VI. Transit Nodes: Metrorail</b>              |               |
| A. Stations                                      | 7301 - 7417   |
| B. Reserved for Future Stations                  | 7418 - 7449   |
|  | 7470 - 7479   |
| C. Parking Lots                                  | 7450 - 7469   |
|  | 7500 - 7599   |
| D. Reserved for Future Parking Lots              | 7480 - 7499   |
| <b>VII. Transit Nodes: Commuter Rail</b>         |               |
| A. Stations                                      | 7600 - 7655   |
|  | 7700 - 7739   |
| B. Reserved for Future Stations                  | 7740 - 7759   |
| C. Parking Lots                                  | 7800 - 7855   |
|  | 7900 - 7939   |
| D. Reserved for Future Parking Lots              | 7760 - 7799   |
| <b>VIII. Transit Nodes: Light Rail</b>           |               |
| A. Stations                                      | 7656 - 7699   |
| B. Reserved Future Light Rail stations           | 20000 - 21500 |
| C. Parking Lots                                  | 7856 - 7873   |
|  | 8271 - 8298   |
| D. Reserved for Future Parking Lots              | 7874 - 7899   |
| <b>IX. Transit Nodes: Bus Park-and-Ride Lots</b> |               |
| A. DC / MD                                       | 8000 - 8050   |
|  | 8100 - 8113   |
| B. Reserved for Future Parking Lots              | 8051 - 8099   |
|  | 8114 - 8199   |
| C. VA / WVA (Includes 17 MD lots)                | 8200 - 8298   |
| D. Reserved for Future Parking Lots              | 8299 - 8399   |

Ref: c8exh 1-6.xls

*FY-2008 Network Documentation: Highway and Transit Network Development*

## **Chapter 2 Overview of Facilities Coded in the Networks Representing the 2006 CLRP and the FY 2007-2012 TIP**

The Transportation Improvement Program (TIP) is a 6-year financial program that describes the schedule for obligating federal funds to state and local projects. The TIP contains funding information for all modes of transportation including highways and HOV as well as transit capital and operating costs. While estimated completion dates are given for projects in the plan, it should be noted that the TIP is not a Capital Improvement Program. The TIP represents an implementing agency's intent to construct or implement a specific project and the anticipated flow of federal funds and matching state or local contributions.

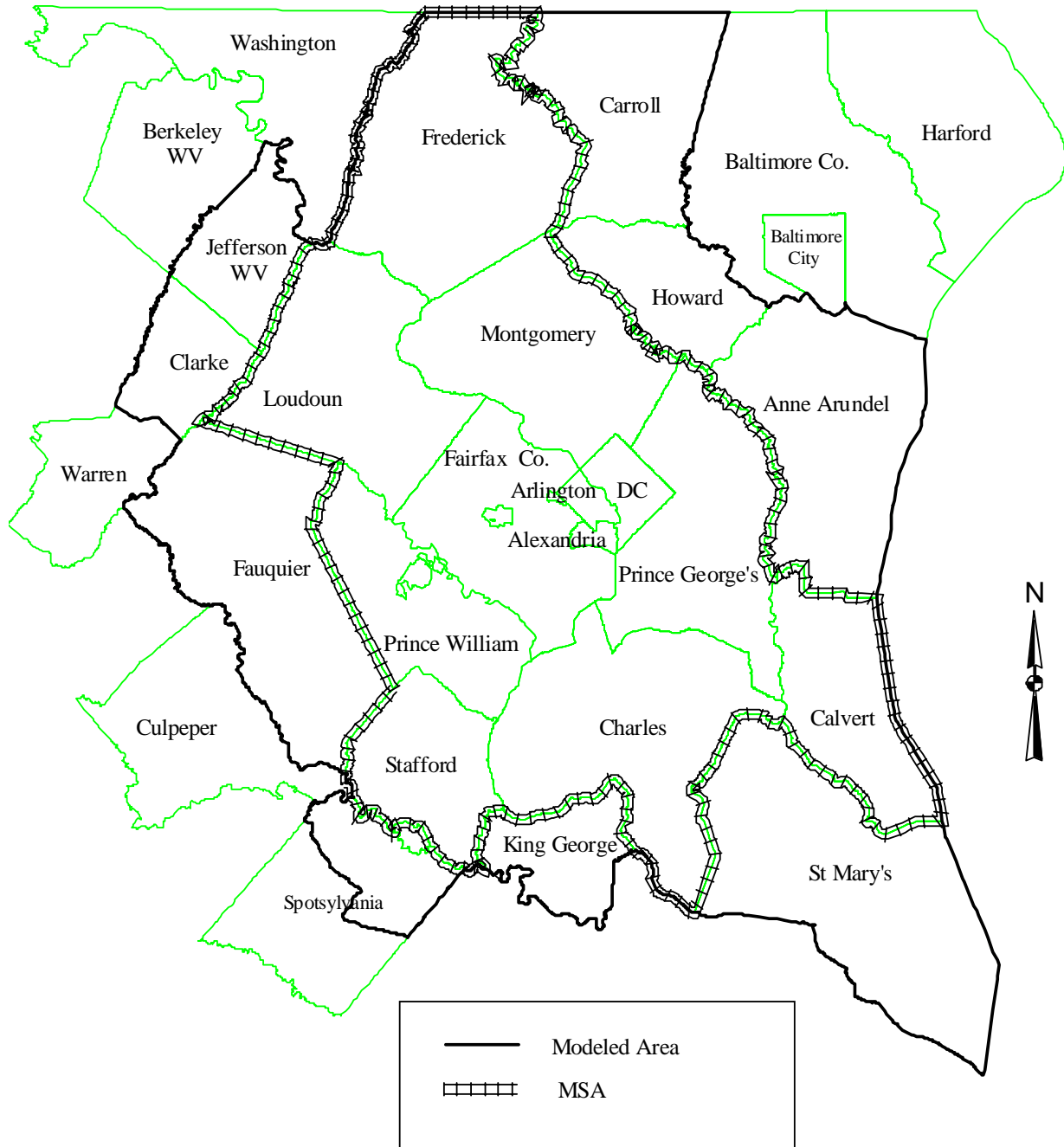
The first year of the TIP is called the Annual Element. Projects that have funds programmed in the Annual Element are eligible to receive federal funding in that fiscal year. State, regional and local transportation agencies update the program each year to reflect priority projects in the CLRP. The current TIP represents fiscal years 2008 to 2013. The CLRP must be updated at least once every four years. The practice has been to update the CLRP annually, since the TIP is being updated annually, and the TIP is a subset of the CLRP.

The Constrained Long-Range Transportation Plan (CLRP) is the long-term plan for transportation in the Washington metropolitan region. The plan is financially constrained to include only those projects that can be funded by revenues that are "reasonably expected to be available" as required by federal law and regulations. The 2007 CLRP identifies all regionally significant transportation projects and programs that are planned in the Washington metropolitan area between 2008 and 2030. Over 750 projects are included, ranging from simple highway landscaping to billion-dollar highway and transit projects. Some of the projects will be completed in the near future, while others are only in the initial planning stage.

The 2007 CLRP and FY2008-2013 TIP were approved by the TPB on January 16, 2008. Technical network development activities for the CLRP and TIP included the preparation of transportation networks for specified forecast years associated with the plan and program (base year 2002 and forecast years: 2008, 2009, 2010, 2020 and 2030).

Geographic areas that are analyzed as a part of air quality conformity assessment are presented in Exhibit 2-1. The map delineates the current COG/TPB modeled area, as well as the non-attainment or MSA area. To enable better simulation results within Montgomery and Prince George's Counties, members of the Baltimore Metropolitan Council (BMC) planning region, Carroll, Howard, and Anne Arundel counties are included within the COG/TPB modeled area. Transportation projects were included for these areas, provided through the coordination efforts within the Maryland Department of Transportation (MDOT) and the BMC. These counties are included in the travel demand, but emissions from counties outside the non-attainment area's boundary are excluded.

Exhibit 2-1: COG/TPB Modeled Area

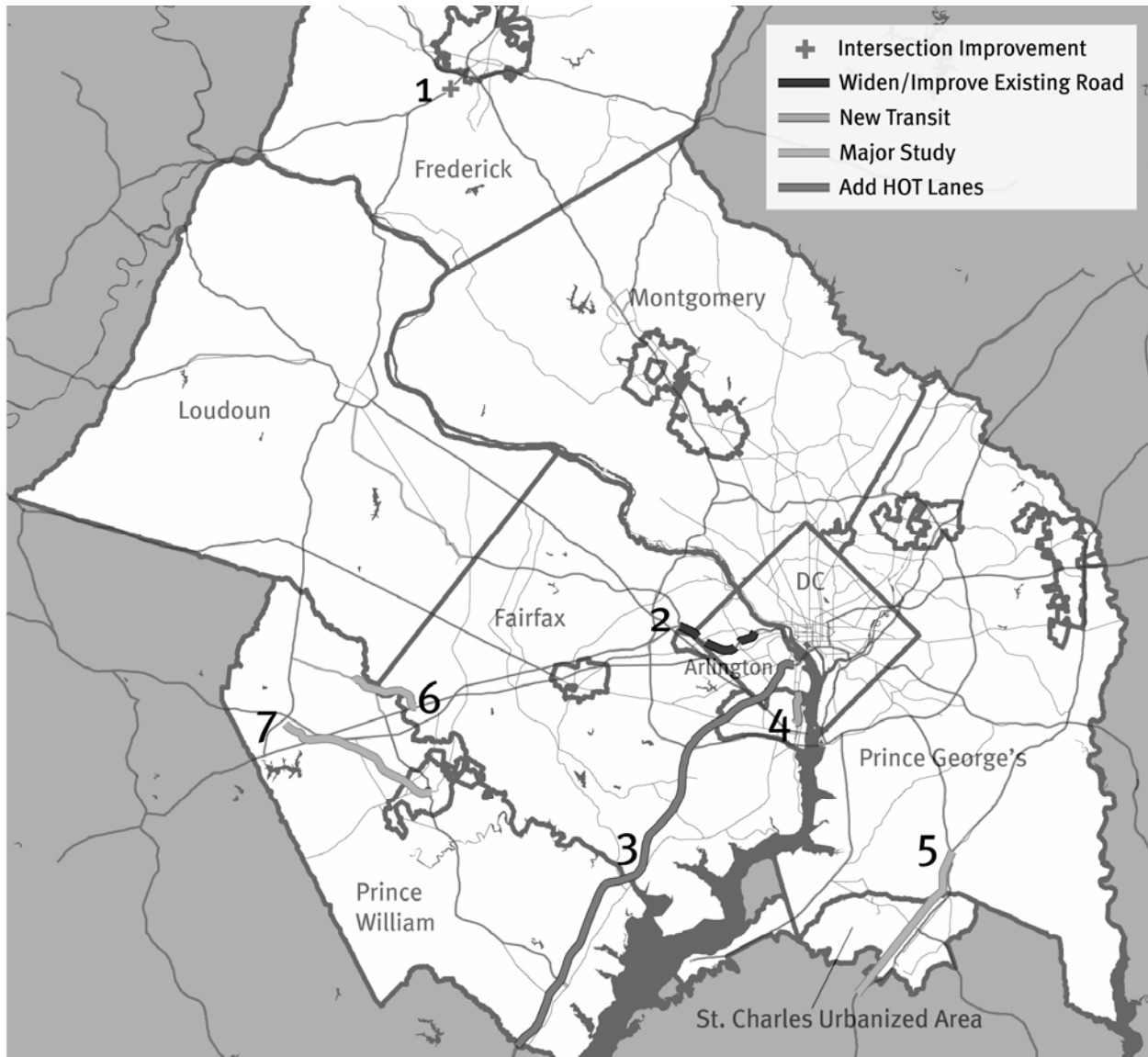




## **2.1 Significant Changes to the 2007 Constrained Long-Range Transportation Plan (CLRP)**

There have been a number of new projects and changes advanced for the CLRP and TIP in this year's approval cycle. Exhibit 2-2 shows the location of significant new projects and changes to selected existing major projects since the 2006 CLRP and the FY2007-2012 TIP were approved by the Board on October 18, 2006. A summary of the projects is also provided in pages that follow.

**Exhibit 2-2: Significant Changes for the 2007 CLRP and FY 2008-2013 TIP**



**Projects for Construction added to 2007 CLRP**

1. US 340/US 17, construct interchange at Jefferson Tech Park, 2009
2. I-66, spot improvements inside the Beltway, 2013
3. I-95/395 HOT Lanes, widen, construct 2, 3 lanes with 14 ramps, 2010
4. Potomac Yard Transit Way, Alexandria, 2011

**Studies**

5. US 301 Waldorf Bypass Study
6. US-29 (Lee Hwy) Bypass around the Manassas National Battlefield Park, Study
7. VRE Extension from Manassas to Haymarket, Study

**Project descriptions are provided for the seven projects listed for construction and studies.**

**1. US 340 – Jefferson National Pike**

Interchange at Jefferson Technology Park

Construct a new, grade-separated interchange on US 340 to support existing and planned development at Jefferson Technology Park.

**2. I-66 Spot Improvements**

Westbound, Inside the Beltway

Reconstruct westbound I-66, extending and connecting a series of acceleration and deceleration lanes to the following configuration:

- Spot 1 – Fairfax Drive to Sycamore Street, from 2 to 3 lanes,
- Spot 2 – Washington Boulevard to the Dulles Airport Access Road from 3 to 4 lanes, and
- Spot 3 – Lee Highway/Spout Run to Glebe Road, from 2 to 3 lanes.

**3. I-95/I-395 HOT Lanes Project**

Eads Street to Garrisonville Road

Reconfigure the existing HOV facility between Eads Street in Arlington County and just south of the Town of Dumfries from 2 to 3 lanes. Convert HOV to High Occupancy Toll (HOT) lanes.

- HOV-3, transit and emergency response vehicles will use these lanes free of charge.
- Other vehicles may use the facility by paying an electronic toll.
- Tolls will vary based on time of day, day of week, and level of congestion in order to maintain free-flow conditions.

In the southbound direction, construct an extended transition lane and a new fly-over ramp, from the HOV/BUS/HOT lanes to ease congestion as traffic merges into the general purpose lanes. Create or modify a number of connections to the existing HOV lanes to improve access to the HOT lane system for HOV and transit users.

### **Transit Service Plan for I-95/I-395 HOT Lanes Project**

The following enhancements to transit services are included as a part of the project:

- New bus routes
- Increased frequency of bus service on existing and new routes incrementally in 2010, 2020, and 2030.
- Addition of bus-only ramps in and out of the Pentagon at Eads St., an in-line bus station near the Lorton VRE station, and a bus-only access ramp at Seminary Rd.
- New Park & Ride facilities with a total of 3,000 additional parking spaces.

#### **4. Potomac Yard Transitway**

Four Mile Run to Braddock Road

Metro Station

- Construct the Alexandria segment of a transitway from the Braddock Road Metro Station to the Potomac Yard Town Center and on to Four Mile Run where it will connect with the Arlington County segment that runs to the Pentagon.
- Buses will travel on mixed-traffic lanes from the Braddock Road Metro Station to the Monroe Avenue Bridge. From Monroe Ave. to E. Glebe Rd., buses will travel on a dedicated transit right-of-way. From E. Glebe Rd. buses will serve the Potomac Yard Town Center and connect to the Arlington segment at S. Glebe Rd.

### **Studies**

#### **5. US 301 – Waldorf Bypass**

Washington Avenue/Turkey Hill Road to North of the MD 5 Interchange at T.B.

Study alternatives for upgrading and widening US 301 through Waldorf and/ or constructing an access-controlled bypass.

#### **6. Manassas National Battlefield Bypass, US 29 to Planned Tri-County Parkway/Route 234**

Close Routes 29 and 234 through the Manassas Battlefield Park to through traffic. Construct a bypass north of the park in the following segments:

- Segment 1 – Construct a new 4-lane road from US 29 east of the Park to existing VA 234 north of the Park
- Segment 2 – Widen existing VA 234 from north of the Park to the proposed Tri-County Parkway/VA 234.

#### **7. VRE Expansion**

City of Manassas to Gainesville and Haymarket

Preliminary engineering and environmental work to extend VRE commuter rail service to Haymarket and Gainesville.

## **Changes to Selected Existing Major Projects in the CLRP**

The following changes were made to four of the region's existing major projects.

### **Maryland**

1. Intercounty Connector (ICC) – Completion date changed from 2010 to 2012.

### **Virginia**

2. Springfield Interchange – Completion date changed from 2007 to 2008.
3. Tri-County Parkway – Alignment changed (revised alignment below) and completion date changed from 2020 to 2012.
4. Beltway HOT Lanes – Completion date changed from 2010 to 2013 and the project cost changed from \$899 million to \$1.5 billion.

## **2.2 2007 CLRP Highway Improvements**

TPB highway networks include all regionally significant roads, i.e., all freeways, interstates, and expressways in the modeled area, all arterials, most collectors, and some local roads. In many cases projects identified in the CLRP and TIP are not coded into regional networks since such projects do not involve changes in capacity (e.g., highway rehabilitation, bridge reconstruction) or are not regionally significant (e.g., intersection improvements, improvements to a facility which is not contained in the regional networks).

Exhibit 2-3 presents a sample of major highway improvements included in the networks representing the 2007 CLRP and the FY 2008-2013 TIP. Although the exhibit is divided into seven sections, only six network scenarios were modeled, 2002-2030. The first section of the exhibit lists projects that are in the base year 2000 network. For example, the Dulles Greenway (Eastbound) had been widened between VA 772 (Exit 6) and VA 28 (Sully Road). In networks for 2002, the base year network for the 2007 CLRP, construction of the VA 234 (Manassas Bypass), the Dulles Greenway (Westbound lanes), and sections of the Fairfax County Parkway were completed in 2001 and are modeled in highway networks for 2002. The widening of Harry Byrd Highway was also completed in 2002.

Major highway improvements programmed for completion beyond those in the 2000 and 2002 base networks are also listed in Exhibit 2-3. A majority of the major projects are slated for completion between years 2010 and 2020. One new significant project slated for completion in 2010 is the addition of HOT lanes in the I-395/I-95 corridor. Networks for 2020 add HOT lanes on I-495 (Capital Beltway VA) from I-395/I-95 to south of Georgetown Pike. A complete list of highway projects that were modeled in the analysis of the 2007 CLRP and the FY 2008-2013 TIP is presented in Appendix A.

*FY-2008 Network Documentation: Highway and Transit Network Development*

**Exhibit 2-3: Major Highway Improvements in the 2007 CLRP and FY2008-2013 TIP**

| Network                         | Facility/Service  | Improv.      | From  | To  | Facil. Type | Lanes | Comp Year |
|---------------------------------|---|--------------|---|---|-------------|-------|-----------|
| <b>2000</b>                     |   |              |   |   |             |       |           |
|                                 | Dulles Greenway Eastbound                               | (Completed)  | VA 772 (Exit 6)                                     | VA 28                                       | 1           | 5     | 2000      |
|                                 | Middlebrook Road  | (Completed)  | Great Seneca Highway                                | I-270                                       | 2           | 6     | 2000      |
|                                 | MD 228 (Berry Road)                                     | (Completed)  | W. of Mattawoman Creek                              | MD 210 (Indian Head Hwy.)                   | 2           | 4     | 2000      |
| <b>2002 Same as 2000, plus:</b> |   |              |   |   |             |       |           |
|                                 | VA 234 (Manassas Bypass)                                | (Completed)  | VA 28   | VA 234/649 S. of Manassas                   | 5           | 4     | 2001      |
|                                 | Dulles Greenway Westbound                               | (Completed)  | VA 28   | VA 772 (Exit 6)                             | 1           | 6     | 2001      |
|                                 | VA 7100 (Fairfax County Parkway)                        | (Completed)  | VA 606 (Baron Cameron Avenue)                       | VA 7 (Leesburg Pike)                        | 5           | 4     | 2001      |
|                                 | VA 7100 (Fairfax County Parkway)                        | (Completed)  | VA 675 (Sunset Hills Road)                          | VA 606 (Baron Cameron Avenue)               | 5           | 6     | 2001      |
|                                 | VA 7100 (Fairfax County Parkway)                        | (Completed)  | VA 620 (Braddock Rd)                                | US 29/VA 608 (West Ox Rd)                   | 5           | 5     | 2001      |
|                                 | VA 7 (Harry Byrd Highway)                               | (Completed)  | VA 28   | Algonkian Parkway                           | 1           | 6     | 2002      |
| <b>2008 Same as 2002, plus:</b> |   |              |   |   |             |       |           |
|                                 | I-95/I-495 (Capital Beltway)                            | (Completed)  | Interchange at Ritchie Marlboro Road                |   | 1           | 8     | 2003      |
|                                 | US 50 (John Hanson Highway)                             | (Completed)  | Columbia Park Road                                  |   | 1           | 3     | 2003      |
|                                 | VA 267 (Dulles Toll Road) Ramps                         | (Completed)  | I-495 Interchange                                   |   | 1           | -     | 2004      |
|                                 | I-95 interchange  | (Completed)  | at VA 627   |   | 1           | -     | 2004      |
|                                 | I-270 (West Spur) Reconstr/Constr.                      | (Completed)  | Interchanges at Democracy Blvd and Westlake Terrace |   | 1           | 6     | 2004      |
|                                 | I-270 (East Spur) Reconstr/Constr.                      | (Completed)  | Rockledge Dr. Connector and MD 187                  |   | 1           | 6     | 2004      |
|                                 | Dulles Greenway Interchanges                            | Construct    | VA 653 & Battlefield Pkwy.                          |   | 1           | -     | 2005      |
|                                 | MD 27 (Ridge Road)                                      | Widen        | MD 355 (Rockville Pike)                             | A-305                                       | 2           | 6     | 2006      |
|                                 | MD 5 Relocated at Hughesville                           | Construct    | End of divided highway south of Hughesville         | End of divided highway north of Hughesville | 5           | 4     | 2007      |
|                                 | I-95/I-495 Woodrow Wilson Bridge                        | Widen        | MD 210 Interchange                                  | US 1  | 1           | 12    | 2008      |
| <b>2009 Same as 2008, plus:</b> |   |              |   |   |             |       |           |
|                                 | I-95/I-495/Arena Drive Interchange                      | Construct    | MD 214  | MD 202                                      | 1           | 8+2   | 2009      |
|                                 | I-95/I-495 (Capital Beltway)                            | Construct    | Branch Avenue Metro Access                          |   | 1           | 8     | 2009      |
| <b>2010 Same as 2009, plus:</b> |   |              |   |   |             |       |           |
|                                 | I-95 (provide 4th lane)                                 | Widen        | Newington   | VA 123                                      | 1           | 8     | 2010      |
|                                 | I-395/I-95 HOT Lanes                                    | Widen/Constr | Eads St.  | VA 234                                      | 1           | 3     | 2010      |
|                                 | I-95 HOT Lanes  | Construct    | VA 234  | VA 610 Stafford Co.                         | 1           | 2-1   | 2010      |
|                                 | I-66 (HOV during AM peak 5 lanes EB)                    | Widen        | US 29 (Gainesville)                                 | VA 234 (Prince William Pkwy.)               | 1           | 8     | 2010      |
|                                 | Dulles Airport Access Road                              | Widen        | Dulles Airport                                      | VA 123                                      | 1           | 6     | 2010      |
|                                 | I-70 - Phases 2B,2C, 2D, 3, 4, & East Street Extension. | Widen        | Mount Phillip Road                                  | MD 144FA                                    | 1           | 6     | 2010      |
|                                 | MD 2/4 at Lusby Southern Connector Road                 | Construct    | MD 765  | MD 2/4 at Lusby                             | 2           | 3     | 2010      |
|                                 | VA 28 PPTA (Phase II)                                   | Widen/Upgrd  | I-66  | VA 7  | 1           | 8     | 2010      |

Ref: C8Exh2-3.xls

**Exhibit 2-3: Major Highway Improvements in the 2007 CLRP and 2008-2013 TIP**

| Network     | Facility/Service                      | Improv.     | From   | To   | Facil. Type | Lanes | Comp Year |
|-------------|---------------------------------------|-------------|--|--|-------------|-------|-----------|
| <b>2020</b> | <b>Same as 2010, plus:</b>            |             |  |  |             |       |           |
|             | I-95 (Wilson Bridge)                  | Widen       | VA 241 (Telegraph Rd.)   | US 1                                       | 1           | 12    | 2011      |
|             | VA 234 (Dumfries Road)                | Widen       | I-95   | US 1                                       | 5           | 6     | 2011      |
|             | US 29 (Lee Highway)                   | Widen       | VA 898 (Old Centreville Road)  | WCL of Fairfax Co.                         | 2           | 6     | 2011      |
|             | VA 7100 (Fairfax County Parkway)      | Construct   | VA 4600 (Fullerton Road)   | VA 7900 (Franconia-Springfield Parkway)    | 1           | 6     | 2011      |
|             | VA 234 (Manassas Bypass)              | Construct   | I-66   | Loudoun County Line                        | 1           | 6     | 2012      |
|             | ICC                                   | Construct   | I-270  | I-95 / US 1                                | 1           | 6     | 2012      |
|             | I-495 HOT Lanes                       | Construct   | I-395  | S. of VA 193 (Georgetown Pike)             | 1           | 8+4   | 2013      |
|             | I-495 HOT Lanes Interchange           | Construct   | Provides SB to WB, SB to EB, EB to SB, & NB to WB HOV to HOT or HOT to HOV | at VA 267 (Dulles Toll Road)               | 1           | -     | 2013      |
|             | I-495 HOT Lanes Interchange           | Construct   | All movements  | at VA 123 (Chain Bridge Road)              | 1           | -     | 2013      |
|             | I-495 HOT Lanes Interchange           | Construct   | Provides SB to WB, WB to SB, EB to SB, NB to WB, & EB to NB HOV to HOT     | at I-66 HOV LanesVA 267 (Dulles Toll Road) | 1           | -     | 2013      |
|             | I-495 HOT Lanes Interchange           | Construct   | HOT movements to and from South Only                                       | at VA 29 (Lee Highway)                     | 1           | -     | 2013      |
|             | I-495 HOT Lanes Interchange           | Construct   | All movements  | at VA 620 (Braddock Road)                  | 1           | -     | 2013      |
|             | I-66 Interchange                      | Reconstruct | @ I-495 (Capital Beltway)  |  | 1           | 0     | 2013      |
|             | US 29 (Lee Highway)                   | Widen       | Virginia Oaks Drive  | I-66                                       | 5           | 6     | 2014      |
|             | M-83 (Midcounty Hwy) Extended         | Construct   | MD 27 (Ridge Road)   | Middlebrook Road                           | 2           | 4-6   | 2015      |
|             | VA 7 Bypass                           | Widen       | VA 7 West  | VA 7/US 15 East                            | 1           | 6     | 2015      |
|             | VA 7 (New Interchanges)               | Upgrade     | VA 7/15 (Leesburg Bypass)  | VA 28                                      | 1           | 6     | 2015      |
|             | US 50 (Arlington Blvd.)               | Reconstruct | ARL/FFX Line   | Washington Blvd.                           | 2           | 6     | 2015      |
|             | US 50 (Arlington Blvd.)               | Reconstruct | Pershing Dr.   | Ft. Myer Dr.                               | 2           | 6     | 2015      |
|             | VA 7100 (Fairfax County Parkway)      | Widen       | I-66   | VA 123 (Ox Road)                           | 5           | 6     | 2015      |
|             | VA 7900 (Franconia/Springfield Pkwy.) | Upgrade     | VA 638 (Rolling Road)  | VA 617 (Backlick Road)                     | 1           | 6+2   | 2020      |
|             | VA 7900 (Franconia/Springfield Pkwy.) | Construct   | Interchange at Neuman Street   |  | 1           | 1     | 2020      |
|             | I-95 (Collector/Distributor Roads)    | Construct   | Contee Road Relocated  |  | 1           | 8+4   | 2020      |
|             | US 29, Columbia Pike                  | Upgrade     | Sligo Creek Parkway  | South of MD 193                            | 5           | 6     | 2020      |
|             | US 29, Columbia Pike                  | Upgrade     | North of MD 193  | South of MD 650                            | 5           | 6     | 2020      |
|             | US 29, Columbia Pike                  | Upgrade     | North of MD 650  | Howard County Line                         | 5           | 6     | 2020      |
|             | M-83 (Midcounty Highway Ext.)         | Construct   | Middlebrook Road   | Montgomery Village Ave.                    | 2           | 4-6   | 2020      |
|             | VA 234 (Manassas Bypass)              | Widen/Upgrd | VA 234 S. of Manassas  | I-66                                       | 1           | 6     | 2020      |
|             | I-270 (Interchange)                   | Construct   | At Watkins Mill Road Extended  |  | 1           | 8+2   | 2020      |
|             | MD 4                                  | Widen       | MD 223   | I-95/I-495                                 | 1           | 6     | 2020      |
|             | MD 210 Indian Head Highway            | Upgrade     | MD 228   | I-495 (Capital Beltway)                    | 2           | 6     | 2020      |
|             | MD 450 Annapolis Road                 | Widen       | Stonybrook Drive   | West of MD 3                               | 2           | 4     | 2020      |
| <b>2030</b> | <b>Same as 2020, plus:</b>            |             |  |  |             |       |           |
|             | Suitland Pkwy. (Interchange)          | Construct   | At Rena/Forrestville Roads   |  | 5           | 1     | 2025      |
|             | VA 28 (Centrevill Rd.)                | Widen       | N.City Limits of Manassas Pk.  | Old Centreville Road                       | 2           | 6     | 2025      |
|             | VA 3000 (Prince William Pkwy.)        | Widen       | VA 776 (Liberia Road)  | VA 640 (Minnieville Rd.)                   | 2           | 6     | 2025      |
|             | US. 1 (Jefferson Davis Hwy.)          | Widen       | VA 212 (Butler Road)   | Princess Anne Street                       | 2           | 6     | 2030      |
|             | US 301 (Crain Highway)                | Upgrd/Widen | North of Mount Oak Road  | US 50                                      | 5           | 6+2   | 2030      |
|             | MD 3 (Robert Crain Highway)           | Construct   | US 50  | Anne Arundel Co. Line                      | 2           | 6     | 2030      |
|             | MD 5 (Branch Avenue)                  | Upgrd/Widen | US 301   | North of Capital Beltway                   | 5           | 6     | 2030      |
|             | MD 28 (Norbeck Rd) / MD 198           | Construct   | MD 97  | I-95                                       | 2           | 4-6   | 2030      |
|             | US 29 (Columbia Pike)                 | Widen       | I-70   | MD 100                                     | 5           | 8     | 2030      |
|             | MD 32                                 | Widen       | I-70   | Carroll County                             | 2           | 4     | 2030      |

Ref: C8Exh2-3.xls

**2.3 2007 CLRP High-Occupancy Vehicle / HOT Lane Facilities**

Existing and planned HOV lane facilities are described in this section and a complete list of HOV and HOT lane facilities is presented in Exhibit 2-4. Base year networks for 2000 and 2002 include peak period HOV priority operations on I-95/I-395 from Quantico Creek (Prince William County) to the Potomac River (exclusive right-of-way 3+ minimum occupancy requirement).

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Base year networks also include HOV lane operations on I-66 from Route 234 to the Potomac River (combination diamond lanes and exclusive right-of-way 2+ minimum occupancy requirements). Diamond HOV lane operations also existed on I-270 from MD 121 to the Capital Beltway, and on the Dulles Toll Road (VA267) from VA 28 to the Capital Beltway, both of which required a 2+ minimum occupancy.

In 2003, diamond lane HOV operations began on US 50 in Maryland from US 301 to the Capital Beltway with 2+ minimum occupancy and in 2006, HOV lanes were opened on I-66 from VA 234 (Prince William Parkway to VA 234 Business (Sudley Road)). Both projects are captured in networks for 2008.

**Exhibit 2-4: HOV/HOT Facilities in the 2007 CLRP and 2008-2013 TIP**

| Network     | Facility   | Improvement   | Limits  | Requirements | Year      |
|-------------|--|---------------|---|--------------|-----------|
| <b>2000</b> |  |               |   |              |           |
|             | I-95/I-395   | Base          | Potomac River to Springfield, VA                    | 3+           | NA        |
|             | I-95   | Construct     | Springfield to Quantico Creek                       | 3+           | NA        |
|             | I-66   | Base          | Inside Beltway                                      | 2+           | NA        |
|             | I-66   | Construct     | I-495 to US 50                                      | 2+           | NA        |
|             | I-66   | Construct     | US 50 to VA 234                                     | 2+           | NA        |
|             | I-270  | Construct     | Eastern Spur  | 2+           | NA        |
|             | I-270  | Construct     | I-370 to MD 121                                     | 2+           | NA        |
|             | I-270  | Construct     | Western Spur  | 2+           | NA        |
|             | US 1   | Base          | Wilkes Street to Vernon Street                      | 2+           | NA        |
|             | Dulles Toll Road   | Construct     | VA 28 to I-495                                      | 2+           | NA        |
| <b>2002</b> | <b>Same as 2000:</b>   |               |   |              |           |
| <b>2008</b> | <b>Same as 2002, plus the following:</b>                                     |               |   |              |           |
|             | US 50 (Maryland)   | Construct     | E. of US 301 / MD 3 to E. of I-95/I-495             | 2+           | Completed |
|             | I-66   | Construct     | VA 234 (Sudley Rd.) to VA 234 (PW.Pkwy.)            | 3+           | 2006      |
| <b>2009</b> | <b>Same as 2008:</b>   |               |   |              |           |
| <b>2010</b> | <b>Same as 2009 (except, all HOV facilities were tested as HOV 3+) Plus:</b> |               |   |              |           |
|             | I-66   | Construct     | US 29 (Gainesville) to VA 234 (PW Parkway)          | 3+           | 2010      |
|             | I-395/I-95   | Widen/Constr. | Eads St. to VA 234 (HOV3/ HOT/Bus Lanes)            | 3+           | 2010      |
|             | I-95   | Construct     | VA 234 to VA 610 Stafford Co. (HOV3/ HOT/Bus Lanes) | 3+           | 2010      |
|             | I-95 W. Wilson Bridge  | Construct     | US 1 (VA) to MD 210                                 | 3+           | 2010      |
|             | VA 7100 (Fairfax County Pkwy.)   | Upgrd/Widen   | US 50 to I-66                                       | 3+           | 2010      |
|             | VA 7900 (Fran./Sprfld. Pkwy.)  | Construct     | Fairfax County Pkwy. to Frontier Drive              | 3+           | 2010      |
| <b>2020</b> | <b>Same as 2010 Plus:</b>  |               |   |              |           |
|             | I-95 W. Wilson Bridge  | Construct     | VA 241 (Telegraph Rd) to US 1 (VA)                  | 3+           | 2011      |
|             | I-495 (HOT)  | Construct     | I-395/I-95 to S. of Georgetown Pike                 | 3+           | 2013      |
|             | I-66   | Construct     | US 15 to US 29 (Gainesville)                        | 3+           | 2015      |
|             | I-95   | Construct     | Quantico Creek to PW/Stafford Line                  | 3+           | 2015      |
|             | I-495  | Construct     | S. of VA 193 (Gtown Pike) to American Legion Bridge | 3+           | 2015      |
|             | VA 7100 (Fairfax County Pkwy.)   | Convert       | VA 267 (Dulles Toll Rd.) to Sunrise Valley Dr.      | 3+           | 2015      |
|             | VA 7100 (Fairfax County Pkwy.)   | Widen         | Sunrise Valley Dr. to Rugby Rd.                     | 3+           | 2015      |
|             | VA 7100 (Fairfax County Pkwy.)   | Widen         | Rugby Road to US 50                                 | 3+           | 2015      |
|             | VA 7100 (Fairfax County Pkwy.)   | Construct     | VA 640 to Franconia/Springfield Pkwy.               | 3+           | 2015      |
|             | VA 7900 (Fran./Sprfld. Pkwy.)  | Upgrade       | VA 638 (Rolling Rd.) to VA 617 (Backlick Rd.)       | 3+           | 2020      |
|             | VA 7900 (Fran./Sprfld. Pkwy.)  | Construct     | Interchange @ Neuman St.                            | 3+           | 2020      |
|             | I-270  | Construct     | Shady Grove Metro to I-70                           | 3+           | 2020      |
| <b>2030</b> | <b>Same as 2020 Plus:</b>  |               |   |              |           |
|             | No new projects modeled  |               |   |              |           |

Ref: C8Exh2-4.xls

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Networks for 2010 include an extension of HOV lanes on I-66 to US 29 Gainesville and on VA 7100 (Fairfax Parkway) and VA 7900 (Franconia-Springfield Parkway). Existing HOV lanes on I-395 and I-95 are re-striped and reconstructed to a three lane capacity, and converted to HOT lane operations. HOT lanes are also constructed on I-95 between VA Route 234 in Prince William County to VA Route 610 Garrisonville Road in Stafford County. It is important to note that the minimum occupancy requirement for all future HOV facilities will be 3+ beginning in 2010.

In 2020, the expansion of HOV and HOT lane facilities continues with the extension of HOV lanes on I-66 and I-270. The construction of HOV lanes also occur on the Fairfax County and Franconia-Springfield Parkways. Networks for 2020 also include the construction of HOT lanes on I-495 (Capital Beltway) from I-395/I-95 to South of Georgetown Pike. No new projects are added to networks for 2030.

## **2.4 2007 CLRP Transit Service**

Major transit improvements are also programmed for completion in the 2007 CLRP and FY-2008-2013 TIP and are listed in Exhibit 2-5. Base year networks for year 2000 include the full 103-mile Metrorail system, three MARC commuter rail lines in Maryland (Penn, Camden, and Brunswick Lines), and two VRE commuter rail lines in Virginia (Fredericksburg and Manassas Lines). Networks for 2002 add upgraded bus and express service in the Dulles corridor.

Transit networks for 2008 include an extension of the Metrorail Blue Line from Addison Road to Largo, a new Red Line station at New York Avenue between Union Station and Rhode Island Avenue Stations, and the extension of MARC service from Point of Rocks to the City of Frederick in Maryland. In the District of Columbia, Phase I of the Anacostia Streetcar project replaces the Shepherd Branch project, and K Street NW is reconstructed to include a busway.

No new service is added in networks for 2009 but 2010 transit networks reflect WMATA's changes in service patterns on the Blue and Orange lines, to optimize passenger loads through Rosslyn. In Maryland, bus service is upgraded and enhanced in the ICC corridor, Randolph Road corridor, and in Southern Maryland. Transit improvements in Virginia include the Cherry Hill VRE station, Crystal City/Potomac Yards Busway, and service improvements for PRTC/Omni Bus and VRE commuter rail.

Phase I of the Dulles Corridor rail line is planned to open between West Falls Church and Wiehle Avenue in 2011, and is included as part of the full build from Wiehle Avenue to Route 772 in Loudoun County in transit networks for 2020. The 2020 networks also include the service upgrade of Crystal City/Potomac Yards Busway to BRT, construction of the Potomac Yards Metrorail Station, the Bi-County Transit-way from Silver Spring to Bethesda, and completion of Corridor Cities Transit-way from the COMSAT Station to Shady Grove Metrorail Station in Montgomery County. One transit project is added to networks for 2030; bus/right-turn lanes on Route 1 between Route 235 north and I-95 Capital Beltway in Virginia. A complete list of the transit projects included in the 2006 CLRP and the FY 2007-2012 TIP is shown in Appendix B.



**Exhibit 2-5: Major Transit Facilities and Improvements in the 2007 CLRP and the FY2008-2013 TIP**

| <b>Network</b>                                     | <b>Facility/Service</b>           | <b>Improvement</b> | <b>Limits</b>   | <b>Comp Year</b> |
|--|-----------------------------------|--------------------|---|------------------|
| <b>2000</b>  |                                   |                    |   |                  |
|  | Metrorail                         | Construct          | Complete 103-mile system                              | Completed        |
|  | MARC, Penn Line                   | Upgrade Service    | Union Station to Perryville, MD                       | Implimented      |
|  | MARC, Camden Line                 | Upgrade Service    | Union Station to Camden Station (Balt.)               | Implimented      |
|  | MARC, Brunswick Line              | Upgrade Service    | Union Station to Martinsburg, WV                      | Implimented      |
|  | VRE, Manassas Line                | Upgrade Service    | Union Station to Broad Run Airport                    | Implimented      |
|  | VRE, Fredericksburg Line          | Upgrade Service    | Union Station to Fredericksburg, VA                   | Implimented      |
|  | VRE, Fredericksburg Line          | Construct          | Franconia/Springfield Commuter Rail Station           | Completed        |
|  | VRE, Fredericksburg Line          | Construct          | Lorton Commuter Rail Station                          | Completed        |
| <b>2002 Same as 2000 base, plus the following:</b> |                                   |                    |   |                  |
|  | Express Bus - BRT Elements        | Upgrade Service    | E. Falls Church Metrorail Sta. to VA 772              | Implimented      |
| <b>2008 Same as 2002 base, plus the following:</b> |                                   |                    |   |                  |
|  | MARC, City of Frederick Line      | Construct          | Frederick to Point of Rocks                           | 2003             |
|  | Metrorail, Blue Line              | Construct          | Addison Road to Largo                                 | 2004             |
|  | Metrorail, Red Line               | Construct          | NY Avenue Station                                     | 2004             |
|  | PRTC/Omni Bus                     | Implement          | Corridor Service Improvements                         | 2005             |
|  | VRE, Fredericksburg Line          | Construct          | Cherry Hill Commuter Rail Station                     | 2006             |
|  | Metrorail (Red) / MARC            | Construct          | Silver Spring Transit Center Phase II                 | 2007             |
|  | Anacostia Streetcar Proj. Phase I | Construct          | Firth Sterling/S.Capital St to Howard Rd./ML King Jr. | 2007             |
|  | Crystal C./Potomac Yard Busway    | Construct          | Vicinity of Glebe Rd. Ext. to 26th Street             | 2007             |
|  | Bus, K Street Busway              | Reconstruct        | Mt. Vernon Sq./ 7th St. NW to Wash.Circle NW          | 2008             |
| <b>2009 Same as 2008 base, plus the following:</b> |                                   |                    |   |                  |
|  | Crystal C./Potomac Yard Busway    | Construct          | 26th Street to Crystal City Metro Station             | 2009             |
| <b>2010 Same as 2002, plus the following:</b>      |                                   |                    |   |                  |
|  | Revised Metrorail Operating Plan  | Modify             | Blue and Orange Lines                                 | 2010             |
|  | I-95/I-395 HOV/BUS/HOT Lanes      | Implement          | Transit Service                                       | 2010             |
|  | VRE Commuter Rail                 | Upgrade Service    | Fredericksburg and Manassas Lines                     | 2010             |
|  | VRE Commuter Rail                 | Construct          | Cherry Hill Commuter Rail Station                     | 2010             |
|  | ICC Corridor Bus Service Improver | Implement          | ICC Corridor  | 2010             |
|  | Southern MD Commuter Bus          | Constr/Upgrade     | Park & Ride Lots and increase bus Service             | 2010             |
|  | Randolph Bus Enhancement          | Implement          | Randolph Road Corridor                                | 2010             |
| <b>2020 Same as 2010, plus the following:</b>      |                                   |                    |   |                  |
|  | Dulles Corridor Rail              | Construct          | E. Falls Church Metrorail Sta. to Wiehle Ave. Sta.    | 2011             |
|  | Purple Line Transitway            | Construct          | Silver Spring to Bethesda                             | 2015             |
|  | Corridor Cities Transitway        | Construct          | Shady Grove to Metropolitan Grove                     | 2012             |
|  | Crystal C./Potomac Yard BRT       | Upgrade Service    | Glebe Rd. Extension to Crystal City Metro Station     | 2012             |
|  | Dulles Corridor Rail              | Construct          | Wiehle Ave. Sta. To VA 772 Station                    | 2015             |
|  | I-95/I-395 HOV/BUS/HOT Lanes      | Implement          | Transit Service                                       | 2020             |
|  | I-495 VA belwtway HOT Lanes       | Implement          | Transit Service                                       | 2020             |
|  | Viers Mill Rd. Bus Enhancement    | Construct          | Rockville to Wheaton                                  | 2020             |
|  | University Blvd. Bus Enhancement  | Construct          | Kensington to Silver Spring                           | 2020             |
|  | Norbeck Rd. Bus Enhancement       | Implement          | Norbeck Road Corridor                                 | 2020             |
|  | Corridor Cities Transitway        | Construct          | Metropolitan Grove to COMSAT                          | 2020             |
| <b>2030 Same as 2020</b>                           |                                   |                    |   |                  |
|  | US 1 (bus\right-turn lanes)       | Widening           | Va 235 North to SCL Alex. (I-95 Capital Beltway)      | 2025             |
|  | I-95/I-395 HOV/BUS/HOT Lanes      | Implement          | Transit Service                                       | 2030             |
|  | I-495 VA belwtway HOT Lanes       | Implement          | Transit Service                                       | 2030             |
|  | Metrorail Station (Proposed)      | Construct          | Potomac Yards Station                                 | 2030             |

**2.5 Highway and Rail Statistics for Improvements Coded in 2007 CLRP Transportation Networks**

Base-year networks for 2002 are comprised of 20,488 directional (one-way) links, excluding centroid connectors. There are 20,697 directional links in the year 2008 network and 20,830 links in the 2009 network. Networks for 2010, 2020 and 2030 contain 21,173 links, 21,614 links, and 21,671 links respectively. Exhibit 2-6 provides a summary for the regional transit service modeled. Exhibit 2-7 presents mileage summaries for LOV and HOV/HOT lane miles, and rail miles for light and heavy rail service.

**Exhibit 2-6: AM and Off-Peak Transit Line Summaries**

| Network Year | AM Transit Line | Off-Peak Transit Line | Transit Line |
|--------------|-----------------|-----------------------|--------------|
|              | TOTAL           | TOTAL                 | TOTAL        |
| 2002         | 987             | 717                   | 1704         |
| 2008         | 1,031           | 765                   | 1796         |
| 2009         | 1,031           | 765                   | 1796         |
| 2010         | 1,035           | 765                   | 1800         |
| 2020         | 1,109           | 816                   | 1925         |
| 2030         | 1,109           | 844                   | 1953         |

**Exhibit 2-7: Highway and Rail Network Statistics for Improvements Coded in the 2007 CLRP and the FY-2008-2013 TIP (modeled area)**

|      | LOV        | HOV/HOT    | METRORAIL | MD/DC*               | VA**                 |
|------|------------|------------|-----------|----------------------|----------------------|
|      | LANE MILES | LANE MILES | MILES     | NON-METRO RAIL MILES | NON-METRO RAIL MILES |
|      | TOTAL      | TOTAL      | TOTAL     | TOTAL                | TOTAL                |
| 2002 | 19,216     | 187        | 103       | 116                  | 95                   |
| 2008 | 19,790     | 207        | 106       | 132                  | 95                   |
| 2009 | 19,866     | 217        | 106       | 132                  | 95                   |
| 2010 | 20,356     | 281        | 106       | 132                  | 95                   |
| 2020 | 21,827     | 365        | 131       | 149                  | 95                   |
| 2030 | 22,029     | 365        | 131       | 149                  | 95                   |

\* Includes MARC, Bi-County Transitway, and Corridor Cities Transitway in Maryland, and Anacostia Street Car in the District of Columbia

\*\* Includes VRE

## **Chapter 3 Version 2.2 Model Network Development**

The Version 2.2 model was employed in the air quality conformity assessment of the 2007 CLRP and FY2008-2013 TIP. The TPB's approach to models development is one that favors incremental change to currently adopted application methods. Consequently, the Version 2.2 model is very similar in structure and operation to the previous Version 2.1D #50 model. The first phase of model development was summarized in a draft report released to the TFS on January 19, 2007 (COG/TPB 2007.1.19).

The model requires the development of a single highway network file containing attributes that represent three time periods: the AM peak period (6:00-9:00 AM), the PM peak period (4:00-7:00 PM), and the off-peak period (comprised of the remaining 18 hours). Highway network coding reflects operational differences between the three periods. The model also requires peak and off-peak transit networks.

Transit networks are built "over" highway network links and are designed to represent service conditions during the two time periods. The AM peak-hour is defined service occurring between 7 AM-7:59 AM<sup>1</sup>. The off-peak period frequencies are based on service occurring between 10:00 AM-2:59 PM. Although the off-peak period covers 5 hours, the maximum headway coded on the transit line files is 60 minutes. Transit in-vehicle times are controlled by the RUNTIME parameter coded on each transit line. This means that bus running times are not computed on the basis of highway link-coded speeds over which lines are coded, but rather, are based on actual bus schedule times.

The transit fare computation process, sometimes referred to as the *MFARE1/2* process, serves to compute transit fares used in the mode choice process. The process ultimately produces four total fare files representing walk/drive-access transit fares for the AM peak period, and walk/drive-access transit fares for the off-peak period.

This chapter of the network development report describes files that support network building and fare development in greater detail. The network and fare development process, supporting the Version 2.2 model, requires files in text format, which are necessary for highway and transit network building/skimming and transit fare development. The following section describes the model's network building process and is followed by a section containing detailed format descriptions of each file. A list of network files and their input types filenames, and descriptions are shown in Exhibit 3-1, and further discussion is provided in the Version 2.2 model User's Guide.

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<sup>1</sup> In the case of express bus service, which generally originates in the outer reaches of the study area and begins much earlier than 7 AM, the AM peak period definition is relaxed to an earlier period for which service is most concentrated.

**Exhibit 3-1: List of Network and Fare Files Prepared for the Version 2.2 Model**

| <b>Input Type</b> | <b>Filename</b> | <b>Description</b>                     | <b>Text or Binary</b> |
|-------------------|-----------------|--|-----------------------|
| Land use          | ZONE.ASC        | Zonal Land Use                         | Text                  |
| Network, highway  | LINK.ASC        | Highway Links                          | Text                  |
| Network, highway  | NODE.ASC        | Highway Node File                      | Text                  |
| Network, transit  | MODE1-9AM.TP    | AM Mode 1-9 Transit Lines              | Text                  |
| Network, transit  | MODE1-9OP.TP    | Off-Pk Mode 1-9 Transit Lines          | Text                  |
| Network, transit  | STA_TPP.BSE     | Rail Station/PNR File                  | Text                  |
| Network, transit  | RAIL_LNK.BSE    | Rail Links                             | Text                  |
| Network, transit  | GISWKAAM.ASC    | GIS AM Zonal Transit Access File       | Text                  |
| Network, transit  | GISWKAOP.ASC    | GIS Off-Peak Zonal Transit Access File | Text                  |
| Network, transit  | GISWKLAM.ASC    | GIS AM Walk Link File                  | Text                  |
| Network, transit  | GISWKLOP.ASC    | GIS Off-Peak Walk Link File            | Text                  |
| Network, transit  | TAZFRZN.ASC     | TAZ/Bus Fare Zone Equivalency          | Text                  |
| Network, transit  | BUSFARAM.ASC    | MFARE2 AM Bus Fare Zone Matrix         | Text                  |
| Network, transit  | BUSFAROP.ASC    | MFARE2 Off-Peak Fare Zone Matrix       | Text                  |
| Network, transit  | TARIFF.TXT      | WMATA Tariff Policy Control File       | Text                  |

**3.1 Highway Network Building Overview**

The network building process begins with the creation of a single binary highway network containing AM, PM, and off-peak highway network attributes that is developed from a single highway link file. The link file includes directional link attributes that vary in accordance with actual highway operations in effect for each time period. Network building also requires a node file containing the x/y coordinate units of each highway node (Maryland State Plane, NAD83, in whole feet).

Highway network files are managed and pre-processed in COG/TPB's GIS. The application consists of the master highway network database and GIS application tools. The coverage-based database and the GIS application tools are intended to integrate the TPB transportation planning procedures with CUBE/TP+, TPB. A two-stage integration process for transportation network modeling is used. In the first stage, ArcInfo is used for highway network development and maintenance.

The GIS-based master highway network (MAN) consists of a coverage of links and nodes. Each link represents a roadway facility with the roadway attributes of that facility coded on the link. The node coverage consists of X and Y coordinates for each junction/intersection. The link and node coverage's are maintained separately. The system consists of a 2000 base highway network and a database of all future link changes. Generally, the base network remains unchanged and the database file is updated as needed to reflect CLRP and TIP inputs. Within the process, the following applications exist: 1) a conformity table and highway link comparison procedure that relates a modified conformity table (see Exhibit 3-2) to the database and updates the database with project completion dates, facility types, and number of lanes, 2) GIS-based application tools that provide a graphical means for users to add or delete nodes and links and to edit the attributes of these features, and 3) capability to generate highway link and node files for any specified year beyond the base year (i.e. 2001 or beyond).

*FY-2008 Network Documentation: Highway and Transit Network Development*

During the second stage of the process, a set of conversion tools are used to export the master network to TP+ format text files that meet coding specifications employed by CUBE TP+. Network conversion and export procedures are automated into TP+ readable format using the converting tools.

**Exhibit 3-2: Example of CLRP/TIP Project List**

| Agency | Project ID     | Improv.   | Environ. Review | Facility   | From  | To                             | Facility |    | Lanes  |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|----------------|-----------|-----------------|--|---|--------------------------------|----------|----|--------|-----|-------------------------------|------------------------|---------|
|        |                |           |                 |  |   |                                | from     | to | from   | to  |                               |                        |         |
| MDSHA  | M2r            | Reconstr  | Approved        | I-270  | Interchange at MD117 including park and ride lot    |                                | 1        | 1  | 8      | 8   | Completed                     | 2004                   | Yes     |
| MDSHA  | M2q            | Construct | Approved        | I-270  | Interchange at Watkins Mill Road Extended           |                                | 1        | 1  | 8      | 8+2 | Nb                            | 2020                   | Yes     |
| MDSHA  | M2h            | Recon/Co  | Approved        | I-270 (East Spur)                                      | Rockledge Dr. Connector and MD 187                  |                                | 1        | 1  | 6      | 6   | Completed                     | 2004                   | Yes     |
| MDSHA  | M2l            | Recon/Co  | Approved        | I-270 (West Spur)                                      | Interchanges at Democracy Blvd and Westlake Terrace |                                | 1        | 1  | 6      | 6   | Completed                     | 2004                   | Yes     |
| MDSHA  | M2S-HV/<br>M2S | Construct | Pending         | I-270/US 15 Corridor                                   | Shady Grove Metro                                   | I-70                           | 1        | 1  | varies |     | Nb                            | 2020                   | Yes     |
| MDSHA  | M4             | Widen     | Approved        | I-70 - Phases 2B, 2C, 2D, 3, 4, and East St. Extension | Mburt Phillip Road                                  | MD 144FA                       | 1        | 1  | 4      | 6   | Nb                            | 2010                   | Yes     |
| MDSHA  | M4c            | Construct | Approved        | I-70 (Phase II A)                                      | MD 85 Extended/MD 355                               |                                | 2        | 2  | 0      | 4   | Completed                     | 2005                   | Yes     |
| MDSHA  | M1f            | Construct | Pending         | I-95   | Contee Road Relocated w/ CD Roads                   |                                | 1        | 1  | 8      | 8+4 | Nb                            | 2020                   | Yes     |
| MDSHA  | M1k            | Construct | Approved        | I-95/I-495 (Capital Beltway)                           | Branch Avenue Metro Access                          |                                | 1        | 1  | 8      | 8   | Nb                            | 2010                   | Yes     |
| MDSHA  | M1p            | Construct | Pending         | I-95/I-495 (Capital Beltway)                           | Interchange at Greenbelt Metro                      |                                | 1        | 1  | 8      | 8+2 | Nb                            | 2010                   | Yes     |
| MDSHA  | VA             | Widen     | Approved        | I-95/I-495 Woodrow Wilson Bridge                       | MD 210 Interchange                                  | Virginia Line                  | 1        | 1  | 6      | 12  | Yes                           | 2008                   | Yes     |
| MDSHA  | M1m            | Construct | Pending         | I-95/I-495 Arena Drive Interchange                     | MD 214  | MD 202                         | 1        | 1  | 8      | 8+2 | Nb                            | 2010                   | Yes     |
| MDSHA  | M1a            | Study     | Pending         | I-95/I-495 (Capital Beltway)                           | American Legion Bridge                              | Woodrow Wilson Bridge          | 1        | 1  | 6      | 6+4 | Nb                            | not coded              | Yes     |
| MDSHA  | MP12           | Construct | Pending         | Intercounty Connector                                  | I-270   | I-95 / US 1                    | 0        | 1  | 0      | 6   | Nb                            | 2010                   | Yes     |
| VDOT   | V13b           | Restripe  | PCE-1           | I-395 HOV (3 lanes total)                              | I-95  | DC                             | 1        | 1  | 2      | 3   | Nb                            | 2010                   | Nb      |
| VDOT   | V13c           | Study     | PCE-1           | I-395 HOV ramp connections                             | HOV access in Alexandria                            |                                | 1        | 1  | -      | -   | Nb                            | not coded              | Nb      |
| VDOT   | V4i            | Construct | EA-2            | I-495 HOT (peak)                                       | I-395   | S. of VA 193 (Georgetown Pike) | 1        | 1  | 8      | 8+4 | Nb                            | 2010                   | Yes     |

Ref: c8exh3-2.xls

### **3.2 Highway Network Link Attributes**

The highway network files that result from the GIS network conversion and export procedures are a set of nodes (ASCII input file node.asc) and a set of links (ASCII input file link.asc) that represent connections between those nodes. Each record represents one direction of the link containing directional link characteristics or attributes such as distance, number of lanes, operational codes, and functional classification. These highway network link attributes are described in the following chapter.

Highway network link distances are developed from arcs built on TIGER centerline files and calculated (in feet). However, link distances are coded in whole miles with an explicit decimal. The speed class, capacity class, and TAZ are added to the highway network during the highway network building phase, so they are not present in the ASCII input file (link.asc). Unused columns have been defined for these three attributes and their subsequent population.

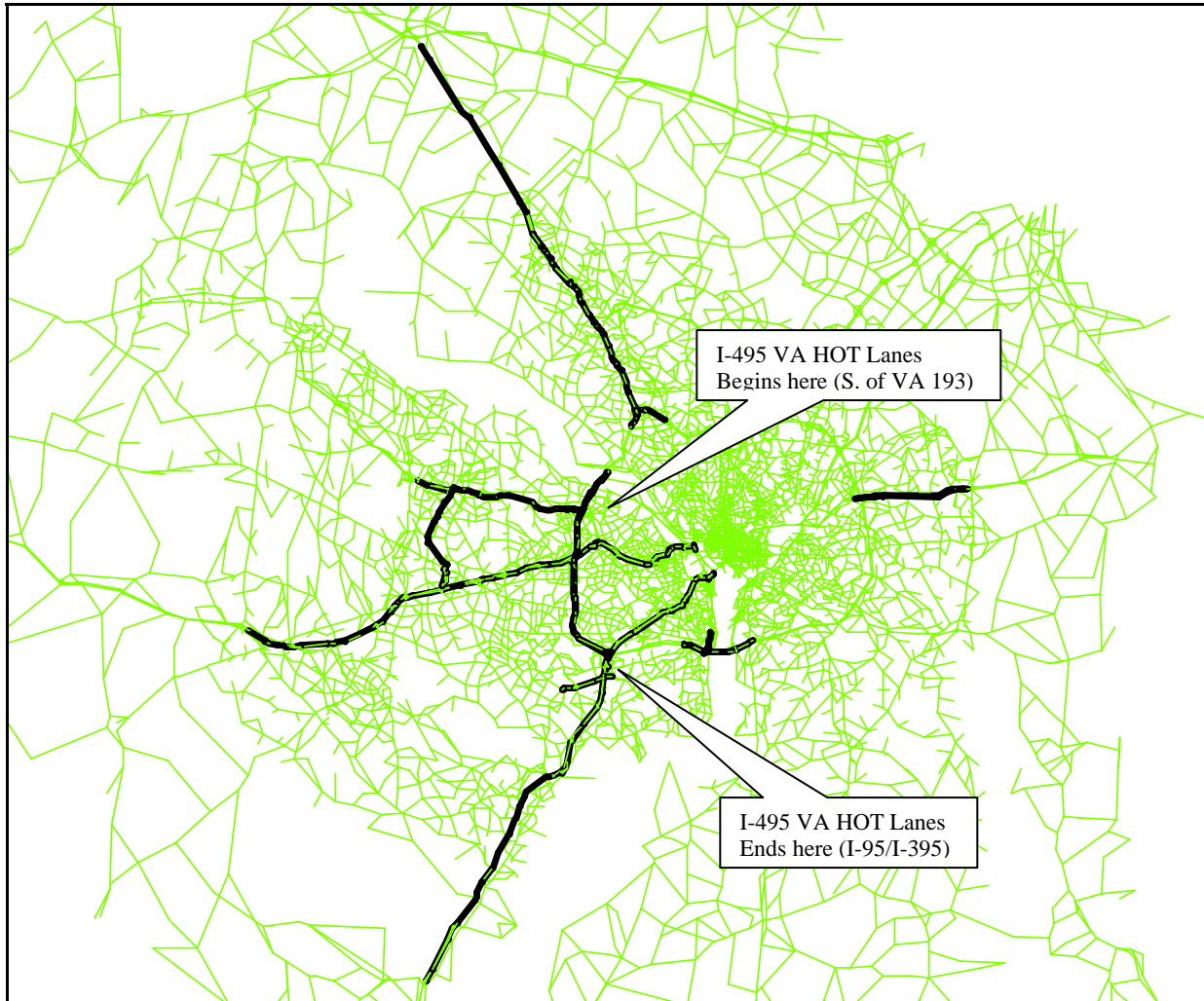
Highway operations are represented in networks using link attributes corresponding to AM peak, PM peak, and off-peak time periods. Two link attributes used to represent operational characteristics of each time period are “lanes” and “limit” codes. Lanes describe the number of through lanes and the limit code describes special vehicle prohibitions. During network development process, each link is assigned three lane codes and three limit codes, corresponding to each modeled time period. Operational changes of regional significance are represented in the highway networks and include facilities that convert from two-way to one-way operations and/or facilities that change in lane configuration during peak traffic periods. Limit codes are presented below:

| <u>Limit Code</u> | <u>Vehicles Allowed</u>             | <u>Vehicles Disallowed</u> |
|-------------------|-------------------------------------|----------------------------|
| 0                 | All Vehicles                        | No Vehicles                |
| 2                 | HOV 2+ Occ. Vehicles                | 1-Occ. Vehicles, Trucks    |
| 3                 | HOV 3+ Occ. Vehicles                | 1, 2 Occ. Vehicles, Trucks |
| 4                 | All Vehicles, other than trucks     | Trucks                     |
| 5                 | Airport Passenger Auto Driver Trips | All other Vehicles         |
| 9                 | Transit Only                        | All other Vehicles         |

Limit codes are also used to model HOV operations, truck prohibitions (primarily on Parkways), and I-66 inside the beltway. Other designated facilities and streets are added to the networks to enable transit routes to be coded accurately relative to zonal activity centers. For these links, a Limit code 9 (‘Transit Only’) is used to more accurately depict coded transit routes, that are below the grain of the zone system; these links are not included in the highway assignment process).

There are numerous cases in the Washington region where through traffic is prohibited from entering into residential neighborhoods during peak periods. These types of prohibitions are typically not of regional significance, and therefore, are not explicitly coded in the highway network. Exhibit 3-3 displays HOV/HOT lane facilities coded in 2030 networks and Exhibit 3-4 shows truck prohibited links.

**Exhibit 3-3: HOV and HOT-Lane Facilities – 2030 AM Highway Network**



**Exhibit 3-4: Truck Prohibited Network Links (Limit Code 4)**

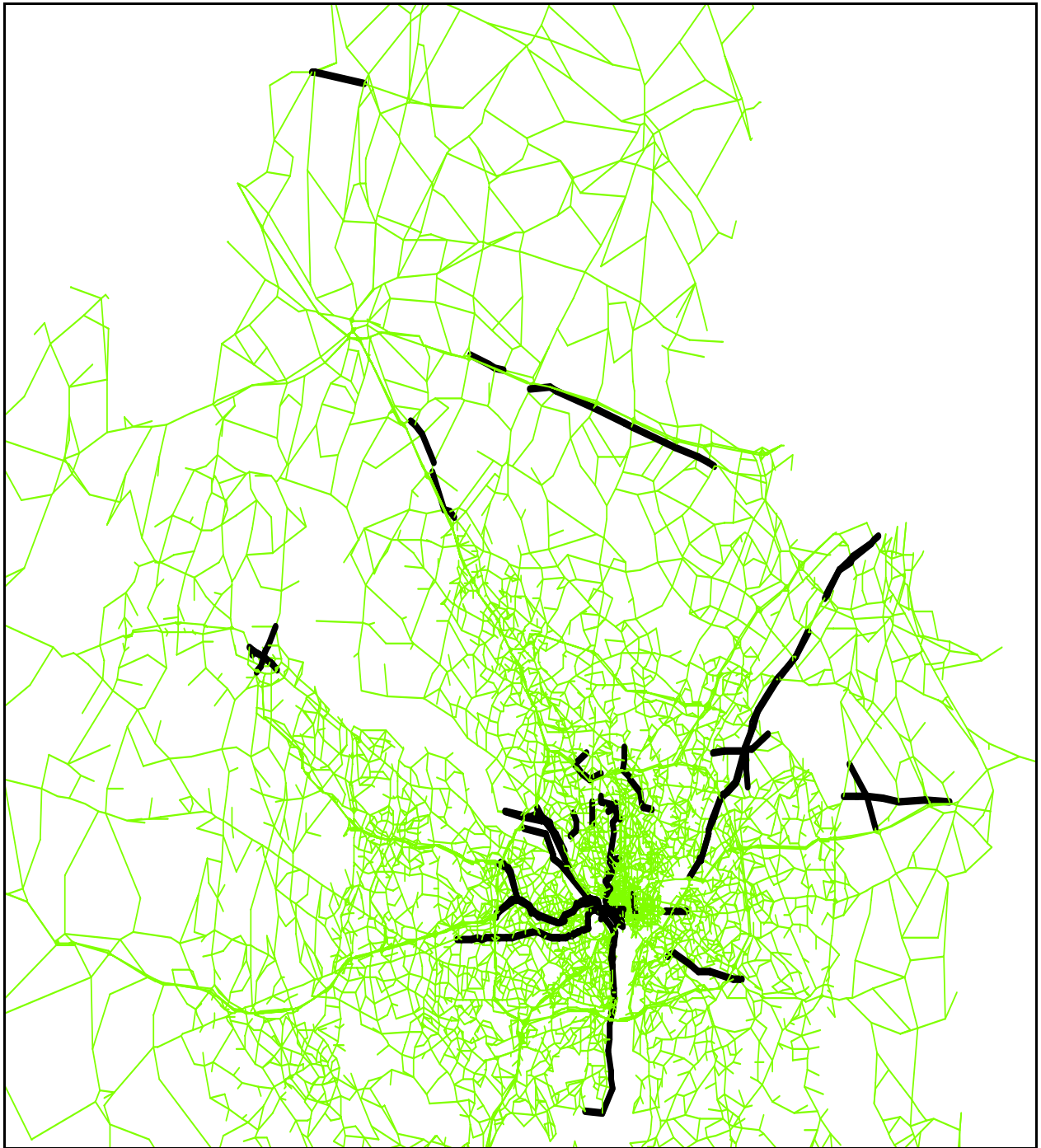
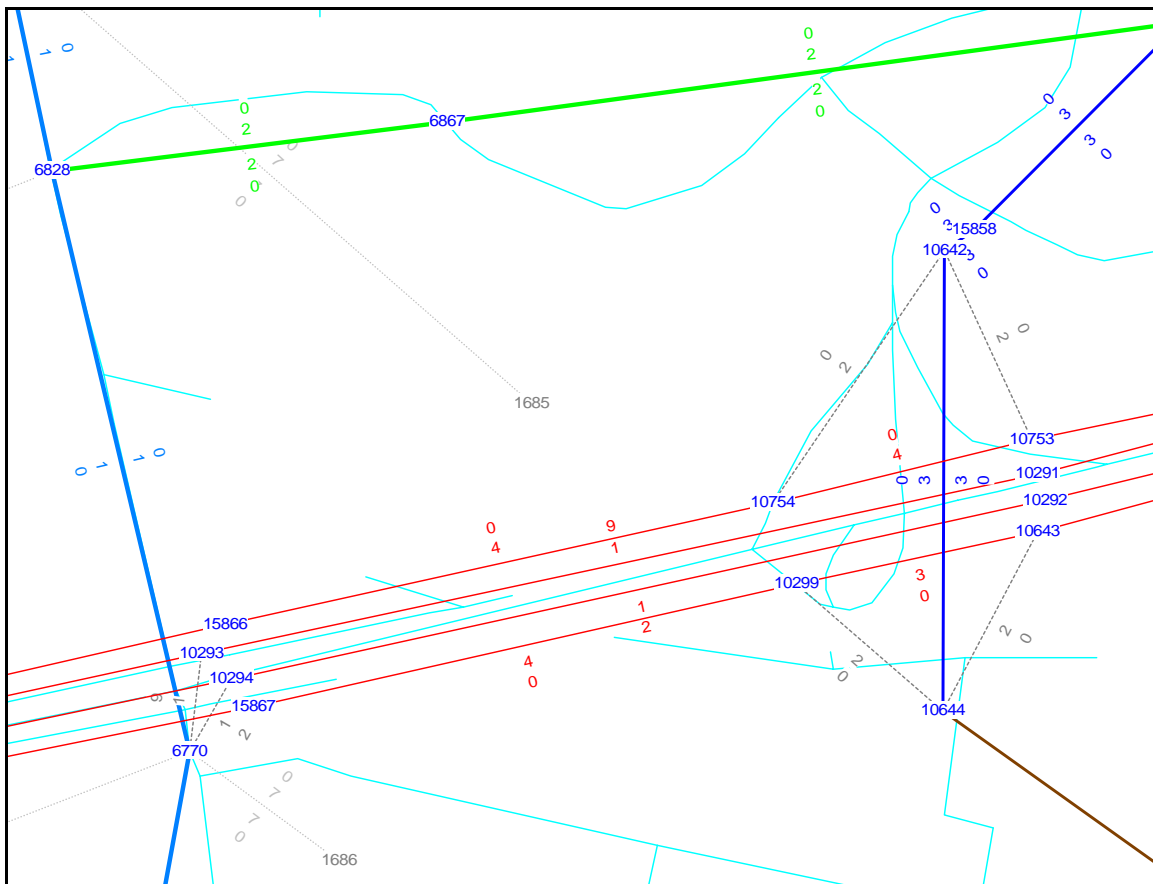




Exhibit 3-5 displays an example of specialized network coding for HOV facilities. During non-peak periods, 8 conventional lanes are provided on the I-66 segment from the Fairfax County Parkway to VA Route 645 Stringfellow Road. During the peak periods, the median lane operates as a concurrent HOV lane in the peak direction. The schematic diagram shows lane configuration for the AM peak period.

Link 15867-10299 operates with 4 LOV lanes eastbound and Limit Code 0 (all vehicles permitted) and link 10294-10292 operates as 1 HOV lane and Limit Code 2 (HOV 2+ vehicles only). Westbound, link 10754-15866 operates with 4 LOV lanes and Limit Code 0 (all vehicles permitted) and link 10291-10293 as 1 HOV lane and Limit Code 9 (all vehicles prohibited). Although transit service is permitted on links with Limit Code 9, transit service is not coded on I-66's westbound HOV links.

**Exhibit 3-5: Year 2000 Highway Network (AM Peak Period)**



Link attributes “Ftype” and “AREATP” (facility type and area type) are used to determine the free-flow speed and hourly capacity of each link. Facility type codes are based on 7 categories (0/centroid connectors, 1/freeways, 2/major arterials, 3/minor arterials, 4/ collectors, 5/expressways, and 6/freeway-arterial ramps) and are manually coded into networks on a link-by-link basis.

A facility type 6 was added to networks in FY2003 to represent freeway-arterial ramps. The code was assigned to meet an Air Quality model requirement for the calculation of ramp-specific emissions for freeways. The ramp designation is presently used for accounting purposes in the air quality emissions calculations of ramps. It has no relevance with respect to capacity or speed in the current travel model. The existing freeway capacities and free flow speeds are presently used for ramps.

Free-flow speeds (speed class) and hourly capacities (capacity class) are established during traffic assignments based upon facility type and area type codes. Area type values are assigned during the network building process, on the basis of employment and population density of the TAZ centroid that is nearest to the link. Area type codes range in value from 1 to 7, as indicated in Exhibit 3-6.

The determination of the nearest TAZ, the density calculations, and subsequent area type value assignment are undertaken with a series of computer programs. The program first determines the nearest zone centroid associated with each link in the highway network.<sup>2</sup> It then determines the area type of each zone in the region based on land activity density. The density measure is defined jointly by population and employment densities for a one-mile ‘floating’ radius about each zone. Therefore, a zonal land use file containing land area and land activity information must be provided. A coordinate file is also necessary in order to enable graphical viewing of the network and to perform a number of other modeling tasks, which require information regarding network node positions.

**Exhibit 3-6: Area Type Definitions**

| One-Mile ‘Floating’<br>Pop. Density (Pop/Sq mi.) | One-Mile ‘Floating’ Employment Density (Emp / Sq mi) |         |           |             |              |               |         |
|--|--|---------|-----------|-------------|--------------|---------------|---------|
|  | 0-100  | 101-500 | 501-1,500 | 1,501-5,000 | 5,001-15,000 | 15,001-35,000 | 35,001+ |
| <b>0-100</b>                                     | 7  | 7       | 5         | 5           | 2            | 2             | 2       |
| <b>101-350</b>                                   | 7  | 5       | 5         | 5           | 2            | 2             | 2       |
| <b>351-1,500</b>                                 | 6  | 6       | 5         | 5           | 2            | 2             | 2       |
| <b>1,501-3,500</b>                               | 6  | 6       | 4         | 3           | 2            | 2             | 2       |
| <b>3,501-6,500</b>                               | 4  | 4       | 3         | 3           | 2            | 2             | 1       |
| <b>6,501-10,000</b>                              | 4  | 3       | 3         | 3           | 2            | 2             | 1       |
| <b>10,001+</b>                                   | 3  | 3       | 3         | 2           | 2            | 2             | 1       |

<sup>2</sup> Each link is associated with one zone, but there is no guarantee that each zone is associated with a link.

Tolls are coded in the highway network by utilizing two highway link attributes: TOLL and TOLLGRP. TOLL is the monetary value of the fee charged at the link location in current year cents. The current year should be consistent with the transit fare tariff year assumed in the development of transit fares. TOLLGRP is a 4-digit facility type index. The TOLLGRP value should be coded with a non-zero value if the TOLL value is non-zero. (If the TOLL value of a given link is non-zero and the TOLLGRP value equals zero, the highway network building process automatically imposes a TOLLGRP override value of '1').

If there is a desire to reflect a per-mile TOLL value on a link, there is no need to code a manually calculated TOLL value on the link. In this instance, the TOLL value should not be coded, but a unique TOLLGRP code should be assigned to the link and an associated per-mile rate should be specified in the TOLL.ESC file (described below). The highway building process ultimately creates six period-specific toll attributes: AMTOLL, PMTOLL, OPTOLL (tolls by time-of-day on all toll facilities) and AMTOLL\_VP, PMTOLL\_VP, OPTOLL\_VP (tolls by time-of-day on variable priced facilities only).

Three toll facilities are modeled in base year highway networks: the Dulles Toll Road (VA 267), the Dulles Greenway, and the Harry W. Nice Memorial Bridge (between Charles County, Maryland and King George County, Virginia). Although a toll is levied on the Chesapeake Bay Bridge (Eastbound), no toll has been coded since the facility is located at an external station.

The Dulles Toll Road involves both access and egress tolls which vary by location. In 2005, tolls were increased on the Dulles Toll Road (VA 267). The entry and exit charge at the Main Toll Plaza end of the facility is increased from 50 cents to 75 cents, levied in both directions. A toll charge of 50 (from 25 cents) cents is now charged at all westbound off-ramps and eastbound on-ramps and at the Sully Road (Route 28) Toll Plaza. Dulles Greenway tolls are coded in COG networks based on the *average* of the cash rates and "SmartTag" rates. This assumes that the "SmartTag" market accounts for roughly half of all Greenway users.

The 14-mile Greenway connects to the Dulles Toll Road at Route 28 at the Dulles International Airport and extends west to Route 15 at Leesburg. The main toll facility is represented north of the Route 28 interchange with a toll of \$1.88. This toll applies to cars only and represents an average of \$2.00 cash and \$1.75 for Smart Tag. A toll of \$1.53 is used for all westbound and eastbound on-ramps at Routes 28, 606, and 607. A toll of \$1.00 is coded for all westbound and eastbound on-ramps at Routes 772, 659, and Claiborne Parkway.

A toll of \$1.00 is coded on the Harry W. Nice Bridge, in both directions. A list of the toll values coded on base network links is presented in Exhibit 3-7. Toll information is reviewed every year and furnished by state DOT's.

One toll facility and two variably priced (HOT) lane facilities are added to forecast year networks for the 2007 CLRP. In 2010, HOT/HOV-lanes replace HOV-only lanes on I-95 and I-395, from VA 234 Dumfries Road to the 14<sup>th</sup> Street Bridge. The Inter-County Connector in Maryland is added to 2012 networks, as a tolled facility. HOV/HOT lanes begin operations on the Beltway I-495 in Virginia, from I-95/I 395 to the south of VA Route 193 in 2013.

**Exhibit 3-7: Highway Network Toll Links**

| Seg | Anode | Bnode | Facility             | Limits                               | Direction | Operation | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 | 2030 | Notes |
|-----|-------|-------|----------------------|--------------------------------------|-----------|-----------|------|------|------|------|------|------|------|-------|
| 1   | 10701 | 10704 | Dulles Toll Road     | Main Toll Plaza - Rt 684 Interchange | Inbound   | LOV       | 50   | 75   | 75   | 75   | 75   | 75   | 75   |       |
| 2   | 10707 | 10700 | Dulles Toll Road     | Main Toll Plaza - Rt 684 Interchange | Outbound  | LOV       | 50   | 75   | 75   | 75   | 75   | 75   | 75   |       |
| 3   | 10917 | 10918 | Dulles Toll Road     | Main Toll Plaza - Rt 684 Interchange | Inbound   | HOV       | 50   | 75   | 75   | 75   | 75   | 75   | 75   |       |
| 4   | 11004 | 11006 | Dulles Toll Road     | Main Toll Plaza - Rt 684 Interchange | Outbound  | HOV       | 50   | 75   | 75   | 75   | 75   | 75   | 75   |       |
| 5   | 10701 | 10703 | Dulles Toll Road     | Spring Hill Rd - Off Ramp            | Inbound   | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 6   | 10702 | 10700 | Dulles Toll Road     | Spring Hill Rd - On Ramp             | Outbound  | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 7   | 10703 | 10704 | Dulles Toll Road     | Spring Hill Rd - On Ramp             | Inbound   | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 8   | 10707 | 10702 | Dulles Toll Road     | Spring Hill Rd - Off Ramp            | Outbound  | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 9   | 10667 | 10666 | Dulles Toll Road     | Hunter Mill Rd - Off Ramp            | Inbound   | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 10  | 10765 | 10665 | Dulles Toll Road     | Hunter Mill Rd - On Ramp             | Outbound  | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 11  | 10671 | 10670 | Dulles Toll Road     | Wiehle Rd - On Ramp                  | Inbound   | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 12  | 10767 | 10669 | Dulles Toll Road     | Wiehle Rd - Off Ramp                 | Outbound  | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 13  | 10675 | 10674 | Dulles Toll Road     | Reston Pkwy - On Ramp                | Inbound   | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 14  | 10769 | 10673 | Dulles Toll Road     | Reston Pkwy - Off Ramp               | Outbound  | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 15  | 10679 | 10678 | Dulles Toll Road     | Centerville Rd - On Ramp             | Inbound   | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 16  | 10771 | 10677 | Dulles Toll Road     | Centerville Rd - Off Ramp            | Outbound  | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 17  | 10862 | 10866 | Dulles Toll Road     | Fairfax Pkwy - On Ramp               | Inbound   | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 18  | 10864 | 10861 | Dulles Toll Road     | Fairfax Pkwy - Off Ramp              | Outbound  | LOV       | 25   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 19  | 6921  | 6913  | Dulles Toll Road     | Rt 28 Toll Plaza - On Ramp           | Inbound   | LOV       | 35   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 20  | 6942  | 6914  | Dulles Toll Road     | Rt 28 Toll Plaza - Off Ramp          | Outbound  | LOV       | 35   | 50   | 50   | 50   | 50   | 50   | 50   |       |
| 21  | 14400 | 14200 | Governor Nice Bridge | Virginia - Maryland                  | Inbound   | LOV       | 100  | 100  | 100  | 100  | 100  | 100  | 100  |       |
| 22  | 14200 | 14400 | Governor Nice Bridge | Virginia - Maryland                  | Outbound  | LOV       | 100  | 100  | 100  | 100  | 100  | 100  | 100  |       |
| 23  | 6942  | 6995  | Dulles Greenway      | Rt 28                                | Outbound  | LOV       | 188  | 188  | 188  | 188  | 188  | 188  | 188  |       |
| 24  | 15601 | 6913  | Dulles Greenway      | Rt 28                                | Inbound   | LOV       | 188  | 188  | 188  | 188  | 188  | 188  | 188  |       |
| 25  | 6939  | 6995  | Dulles Greenway      | Dulles Greenway to Airport Ramp      | Outbound  | LOV       | 153  | 153  | 153  | 153  | 153  | 153  | 153  |       |
| 26  | 15601 | 6943  | Dulles Greenway      | Airport to Dulles Greenway Ramp      | Inbound   | LOV       | 153  | 153  | 153  | 153  | 153  | 153  | 153  |       |
| 27  | 6961  | 6995  | Dulles Greenway      | Rt 28 to Dulles Greenway On-Ramp     | Outbound  | LOV       | 153  | 153  | 153  | 153  | 153  | 153  | 153  |       |
| 28  | 15601 | 6961  | Dulles Greenway      | Dulles Greenway to Rt 28 Off-Ramp    | Inbound   | LOV       | 153  | 153  | 153  | 153  | 153  | 153  | 153  |       |
| 29  | 6925  | 15606 | Dulles Greenway      | Rt 606 On-Ramp                       | Outbound  | LOV       | 153  | 153  | 153  | 153  | 153  | 153  | 153  |       |
| 30  | 15607 | 15608 | Dulles Greenway      | Rt 606 Off-Ramp                      | Inbound   | LOV       | 153  | 153  | 153  | 153  | 153  | 153  | 153  |       |
| 31  | 6962  | 15616 | Dulles Greenway      | Rt 772 On-Ramp                       | Outbound  | LOV       | 100  | 100  | 100  | 100  | 100  | 100  | 100  |       |
| 32  | 15617 | 15618 | Dulles Greenway      | Rt 772 Off-Ramp                      | Inbound   | LOV       | 100  | 100  | 100  | 100  | 100  | 100  | 100  |       |
| 33  | 15625 | 15626 | Dulles Greenway      | Claiborn Pkwy On-Ramp                | Outbound  | LOV       | 153  | 153  | 153  | 153  | 153  | 153  | 153  |       |
| 34  | 6966  | 15624 | Dulles Greenway      | Claiborn Pkwy Off-Ramp               | Inbound   | LOV       | 153  | 153  | 153  | 153  | 153  | 153  | 153  |       |
| 35  | 6967  | 15629 | Dulles Greenway      | Belmont Rd On-Ramp                   | Outbound  | LOV       | 100  | 100  | 100  | 100  | 100  | 100  | 100  |       |
| 36  | 15630 | 15631 | Dulles Greenway      | Belmont Rd Off-Ramp                  | Inbound   | LOV       | 100  | 100  | 100  | 100  | 100  | 100  | 100  |       |
| 37  | 6997  | 15611 | Dulles Greenway      | Rt 607 (LDN Co Pkwy) On-Ramp         | Outbound  | LOV       | -    | 153  | 153  | 153  | 153  | 153  | 153  | VSL39 |
| 38  | 15612 | 15613 | Dulles Greenway      | Rt 607 (LDN Co Pkwy) Off-Ramp        | Inbound   | LOV       | -    | 153  | 153  | 153  | 153  | 153  | 153  | VSL39 |
| 39  | 6969  | 15639 | Dulles Greenway      | Battlefield Pkwy On-Ramp             | Outbound  | LOV       | -    | 100  | 100  | 100  | 100  | 100  | 100  | VP21b |
| 40  | 15640 | 15641 | Dulles Greenway      | Battlefield Pkwy Off-Ramp            | Inbound   | LOV       | -    | 100  | 100  | 100  | 100  | 100  | 100  | VP21b |
| 41  | 6968  | 15634 | Dulles Greenway      | Rt 653 (Shreve Mill Rd) On-Ramp      | Inbound   | LOV       | -    | 100  | 100  | 100  | 100  | 100  | 100  | VP21b |
| 42  | 15635 | 15636 | Dulles Greenway      | Rt 653 (Shreve Mill Rd) Off-Ramp     | Outbound  | LOV       | -    | 100  | 100  | 100  | 100  | 100  | 100  | VP21b |

Ref: TOLLNK07.xls

For the variably priced lane facilities, I-95/I-395 and I-495 Capital Beltway in Virginia, the network link toll value (TOLL) is left blank and the toll facility type variable (TOLLGRP) is used to access a lookup table of fixed fees and per-mile rates.

The ICC in Maryland is modeled as TOLLGRP code 4 with tolls of 15 and 20 cents for the peak and off-peak periods respectively, in 2010 cents. HOT-Lanes on I-95 and I 395 are modeled as TOLLGRP codes 15-41 and HOT-Lanes in Virginia on I-495 Capital Beltway are modeled as TOLLGRP codes 2, 3, and 5-10. The remaining toll facilities in the region, the Dulles Toll Road (VA 267), the Dulles Greenway, and the Harry W. Nice Memorial Bridge, are modeled as TOLLGRP code 1. Exhibits 3-8 through 3-11 display tolls per mile (in 2010 cents) for the Beltway and Shirley Highway HOT Lanes.

**Exhibit 3-8: Tolls per Mile (in 2010 cents) for Year 2010 Beltway HOT Lanes**

| Toll Group | Segments                   | AM Peak |      | PM Peak |      | Off Peak |      |
|------------|----------------------------|---------|------|---------|------|----------|------|
|            |                            | 2020    | 2030 | 2020    | 2030 | 2020     | 2030 |
| 3          | VA 123 - VA 267            | 20      | 20   | 20      | 40   | 15       | 15   |
| 4          | I-66 - Lee Hwy.            | 20      | 20   | 20      | 20   | 15       | 15   |
| 5          | Braddock Rd. - Lee Hwy.    | 60      | 70   | 20      | 20   | 15       | 15   |
| 6          | VA 123 - I-66              | 20      | 20   | 130     | 80   | 15       | 15   |
| 7          | I-66 VA 123                | 20      | 50   | 20      | 20   | 15       | 15   |
| 8          | Braddock Rd. - Lee Hwy.    | 20      | 20   | 260     | 360  | 15       | 15   |
| 9          | Heming Ave. - Braddock Rd. | 20      | 20   | 20      | 20   | 15       | 15   |
| 10         | VA 193 - VA 267            | 20      | 20   | 20      | 20   | 15       | 15   |
| 11         | VA 267 - VA 123            | 20      | 20   | 20      | 20   | 15       | 15   |
| 12         | Braddock Rd. - Heming Ave. | 20      | 20   | 20      | 20   | 15       | 15   |
| 13         | Lee Hwy - I-66             | 20      | 20   | 20      | 20   | 15       | 15   |
| 14         | VA 267 - VA 193            | 20      | 20   | 20      | 30   | 15       | 15   |

**Exhibit 3-9: Toll per Mile (in 2010 cents) for Year 2010 Shirley Highway HOT Lanes (AM Peak)**

| Toll Group | Segments                            | Analysis Year |      |      |
|------------|-------------------------------------|---------------|------|------|
|            |                                     | 2010          | 2020 | 2030 |
| 15         | Joplin Rd. (VA 619) - Dale Blvd.    | 20            | 20   | 20   |
| 17         | Dale Blvd. - PW Pkwy.               | 20            | 20   | 20   |
| 19         | PW Pkwy - VA 123                    | 20            | 20   | 20   |
| 21         | VA 123 - US 1                       | 20            | 20   | 20   |
| 23         | US 1 - S. of Pohick Rd.             | 20            | 20   | 130  |
| 25         | S. of Pohick Rd. - N. of Pohick Rd. | 30            | 80   | 120  |
| 27         | N. of Pohick Rd. - Backlick Rd.     | 20            | 20   | 20   |
| 29         | Backlick Rd. - Franconia S.F. Pkwy. | 20            | 60   | 70   |
| 31         | Franconia S.F. Pkwy- Franconia Rd.  | 20            | 50   | 60   |
| 33         | Franconia Rd. - I-495               | 60            | 170  | 300  |
| 35         | I-495 - Edsall Rd.                  | 60            | 40   | 20   |
| 37         | Edsall Rd.- Seminary Rd.            | 90            | 40   | 20   |
| 39         | Seminary Rd.- N. Quaker Ln.         | 60            | 200  | 180  |
| 41         | N. Quaker Ln.- S. Eads St.          | 40            | 30   | 20   |

**Exhibit 3-10: Toll per Mile (in 2010 cents) for Year 2010 Shirley Highway HOT Lanes (PM Peak)**

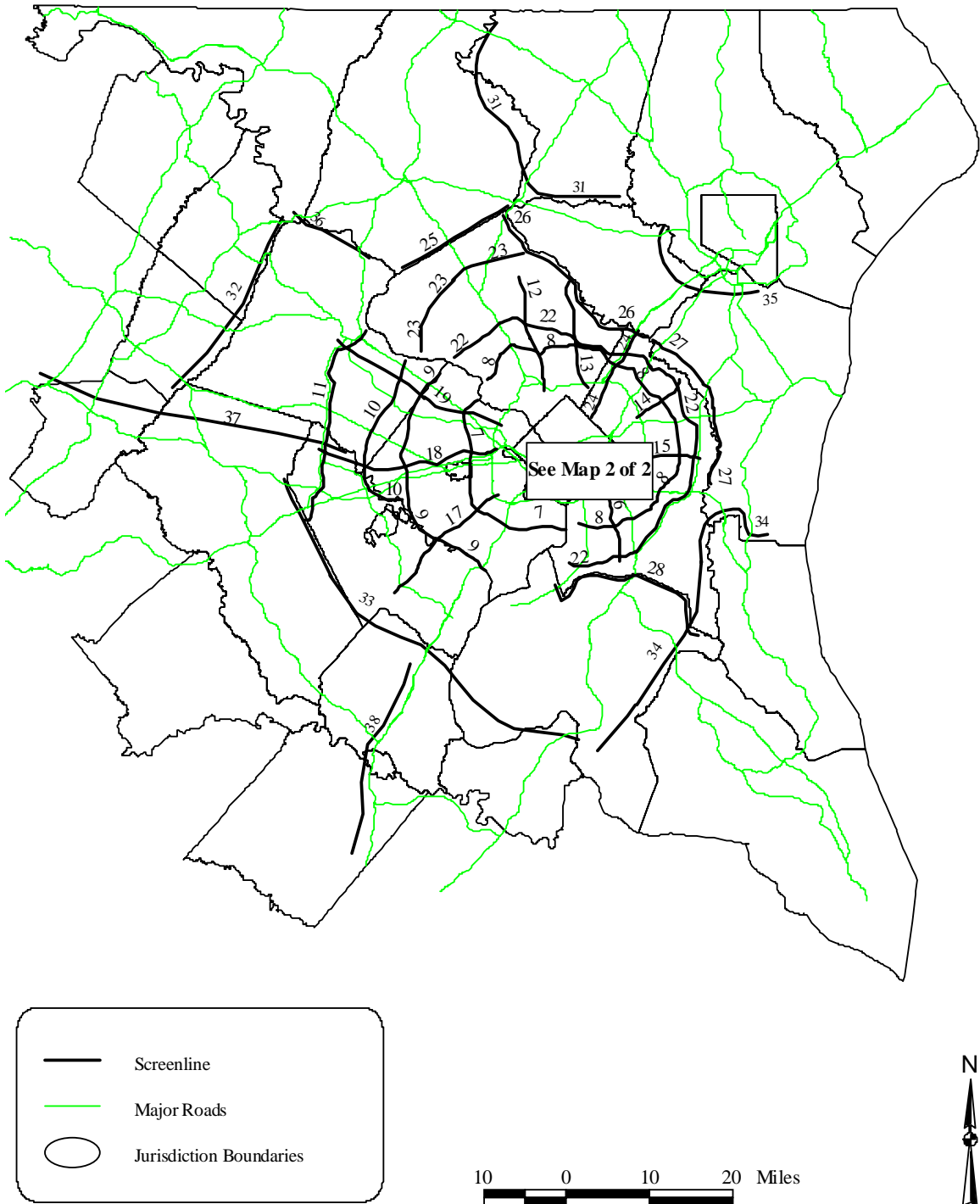
| Toll Group | Segments                                | Analysis Year |      |      |
|------------|---|---------------|------|------|
|            |   | 2010          | 2020 | 2030 |
| 18         | S. Eads St.- S. Joyce St.               | 20            | 20   | 20   |
| 20         | S. Joyce St.- N. Quaker Ln.             | 150           | 220  | 220  |
| 22         | N. Quaker Ln.- Seminary Rd.             | 350           | 520  | 550  |
| 24         | Seminary Rd.- Edsall Rd.                | 20            | 40   | 50   |
| 26         | Edsall Rd.-I-495                        | 290           | 320  | 310  |
| 28         | I-495 - Franconia Rd.                   | 290           | 820  | 820  |
| 28         | Franconia Rd.- Franconia S.F. Pkwy.     | 20            | 20   | 20   |
| 30         | Franconia S.F. Pkwy- N. of Backlick Rd. | 20            | 20   | 20   |
| 32         | N. of Backlick Rd.- Backlick Rd.        | 20            | 20   | 20   |
| 34         | Backlick Rd.- S. of Pohick Rd.          | 240           | 480  | 580  |
| 36         | S. of Pohick Rd. - Garrisonville Rd.    | 20            | 20   | 20   |

**Exhibit 3-11: Toll per Mile (in 2010 cents) for Year 2010 Shirley Highway HOT Lanes (Off Peak)**

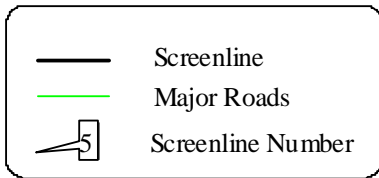
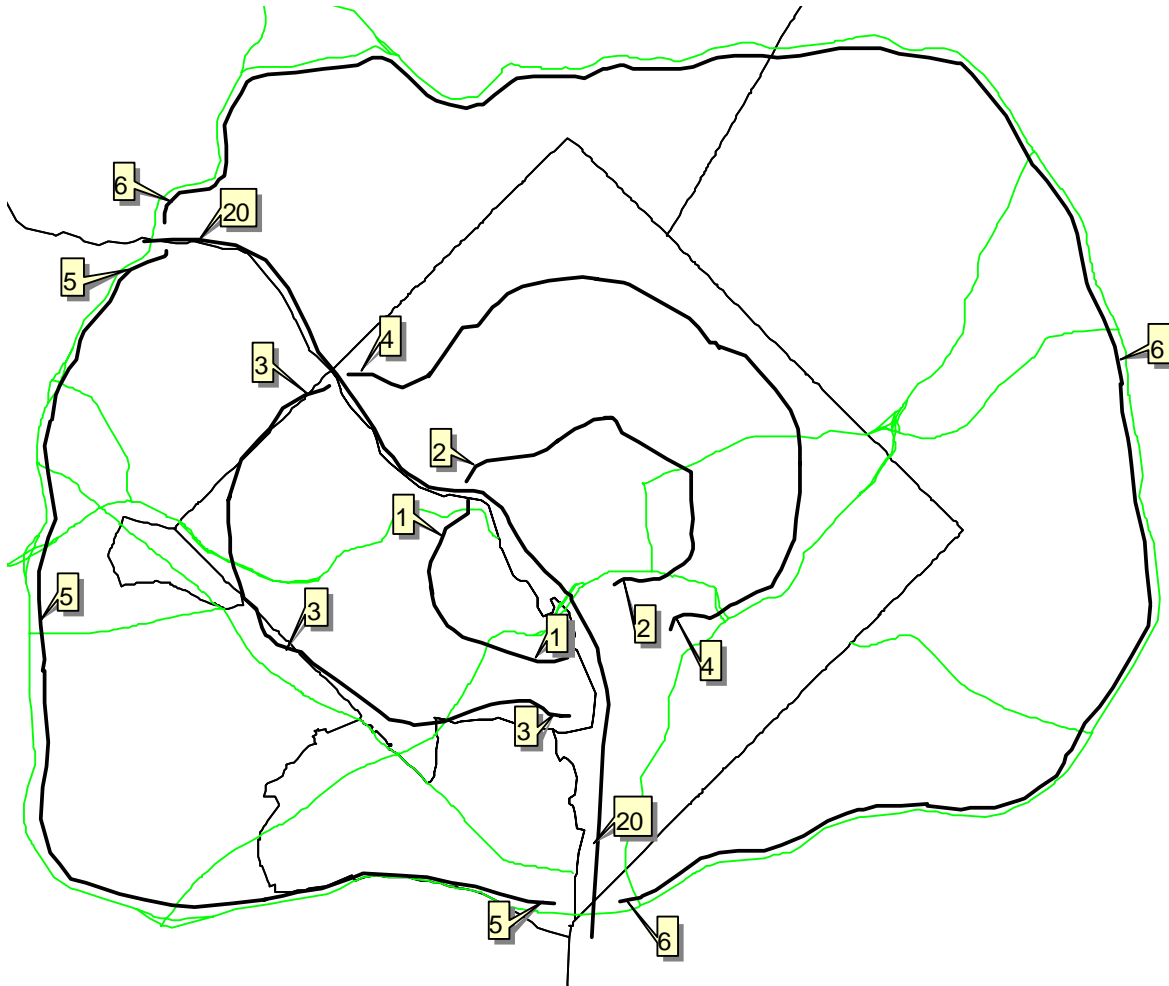
| Toll Group | Segments                                | Analysis Year |      |      |
|------------|---|---------------|------|------|
|            |   | 2010          | 2020 | 2030 |
| 15         | Joplin Rd. (VA 619) - Dale Blvd.        | 15            | 15   | 15   |
| 17         | Dale Blvd. - PW Pkwy.                   | 15            | 15   | 15   |
| 18         | S. Eads St.- S. Joyce St.               | 15            | 15   | 15   |
| 19         | PW Pkwy - VA 123                        | 15            | 15   | 15   |
| 20         | S. Joyce St.- N. Quaker Ln.             | 15            | 15   | 15   |
| 21         | VA 123 - US 1                           | 15            | 15   | 15   |
| 22         | N. Quaker Ln.- Seminary Rd.             | 15            | 15   | 15   |
| 23         | US 1 - S. of Pohick Rd.                 | 15            | 15   | 15   |
| 24         | Seminary Rd.- Edsall Rd.                | 15            | 15   | 15   |
| 25         | S. of Pohick Rd. - N. of Pohick Rd.     | 15            | 15   | 15   |
| 26         | Edsall Rd.-I-495                        | 15            | 15   | 15   |
| 27         | N. of Pohick Rd. - Backlick Rd.         | 15            | 15   | 15   |
| 28         | I-495 - Franconia Rd.                   | 15            | 15   | 15   |
| 29         | Backlick Rd. - Franconia S.F. Pkwy.     | 15            | 15   | 15   |
| 30         | Franconia S.F. Pkwy- N. of Backlick Rd. | 15            | 15   | 15   |
| 31         | Franconia S.F. Pkwy- Franconia Rd.      | 15            | 15   | 15   |
| 32         | N. of Backlick Rd.- Backlick Rd.        | 15            | 15   | 15   |
| 33         | Franconia Rd. - I-495                   | 15            | 15   | 15   |
| 34         | Backlick Rd.- S. of Pohick Rd.          | 15            | 15   | 15   |
| 35         | I-495 - Edsall Rd.                      | 15            | 15   | 15   |
| 36         | S. of Pohick Rd. - Garrisonville Rd.    | 15            | 15   | 15   |
| 37         | Edsall Rd.- Seminary Rd.                | 15            | 15   | 15   |
| 39         | Seminary Rd.- N. Quaker Ln.             | 15            | 15   | 15   |
| 41         | N. Quaker Ln.- S. Eads St.              | 15            | 15   | 15   |

Highway network link attributes also include screenline codes. Screenlines are used for comparing trip and vehicle crossings during model calibration and validation purposes. The highway network includes 38 screen-lines throughout the modeled area. Screenlines 21 and 30 are not used. The screenline locations currently analyzed by TPB staff are provided in Exhibits 3-12 and Exhibit 3-13.

**Exhibit 3-12: Highway Network Screen lines: Map 1 of 2**



**Exhibit 3-13: Highway Network Screen lines (Inside the Capital Beltway)  
Map 2 of 2**





### **3.3 Transit Network Building Overview**

The development of bus and rail inputs for CLRP networks begins with the compilation of local and commuter bus and rail service data for all regional transit providers in the Metropolitan Washington region. Although transit service is changing throughout the year, we update our transit networks in the fall of each year. This updated information informs both our base-year networks (e.g., 2006, 2007) and our future-year networks (e.g. 2008, 2009, 2010, 2020, and 2030).

Two types of data are needed to model transit service: schedule data and spatial data (the path each route takes). Historically, we have obtained these two types of data by collecting paper schedules provided by the transit providers and manually calculating headways and run times from the paper timetables. “Headway” is the time between successive arrivals (or departures) of transit vehicles on a given route and “Run time” is the time in minutes that it takes for the transit vehicle to go from the start to the finish of its route and is a measure of the average speed of the vehicle on that route.

Since 1999, we have obtained schedule information from WMATA (and later Ride On) in a computer-readable format. WMATA bus routes and Ride On bus routes, represent the lion’s share of transit routes in a given transit network. Although the data provided by WMATA and Montgomery County contain more detail than we need, we use SAS programs to calculate, for each route, the average headway and average run time during the AM peak period and the off peak period

This automated process has ensured consistency of transit networks across network years for WMATA bus routes and Ride On bus routes, something that is very important for correct use of travel demand models. The headways and run times for the twenty remaining transit providers in the Metropolitan Washington region were calculated manually using published transit provider information. Transit files employed in assessment of the 2007 CLRP and FY2008-2013 TIP were based on 2006 transit data.

In the future, we would like to obtain transit service data as computer-readable comma delimited files from all transit providers. Examples of WMATA’s Braille file, Ride On’s comma delimited text file, and an internet-based paper schedule for Fairfax Connector are presented in Exhibits 3-14, 3-15, and 3-16, respectively.

The AM and off-peak bus line files are established ‘over’ the AM and off-peak highway networks, respectively. The highway network contains some links that are coded below the grain of the TAZ system, so that the proximity of transit service to zonal activity centers can be more accurately represented<sup>3</sup>.

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<sup>3</sup> The sub-zonal highway links used to more accurately reflect transit route alignments are disallowed from use during normal highway path building and highway assignments, however.

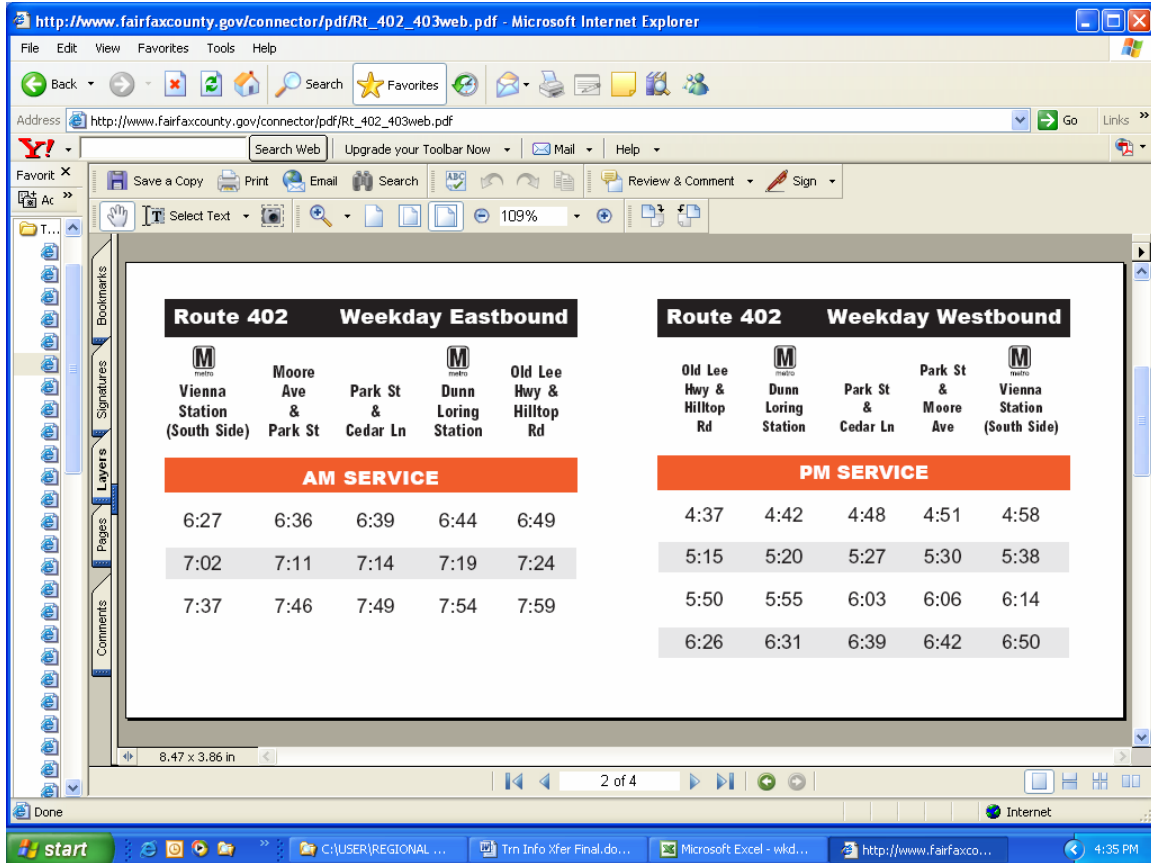
**Exhibit 3-14: Example of WMATA's Braille Text File**

| DAY OF  | THE WEEK: WEEKDY | HUNTING TOWERS | KING & WASHINGTON STS | PENDLETON & COLUMBUS |
|---------|------------------|----------------|-----------------------|----------------------|
| ?10A*2A | -                | -              | -                     | 4:54                 |
| ?10A*2A | -                | -              | -                     | 5:24                 |
| ?10A*2A | -                | -              | -                     | 5:54                 |
| ?10A*2A | -                | -              | -                     | 6:15                 |
| 10E A   | -                | -              | -                     | -                    |
| ?10E A  | -                | -              | -                     | -                    |
| ?10A A  | 6:38             | -              | 6:42                  | 6:45                 |
| ?10E A  | -                | -              | -                     | -                    |
| 10E A   | -                | -              | -                     | -                    |
| ?10A A  | 7:08             | -              | 7:12                  | 7:15                 |
| ?10E A  | -                | -              | -                     | -                    |
| ?10E A  | -                | -              | -                     | -                    |
| ?10A A  | 7:38             | -              | 7:42                  | 7:45                 |
| 10E A   | -                | -              | -                     | -                    |
| ?10A A  | 7:56             | -              | 8:01                  | 8:05                 |
| ?10E A  | -                | -              | -                     | -                    |
| ?10A A  | 8:30             | -              | 8:35                  | 8:39                 |
| ?10A A  | 9:00             | -              | 9:05                  | 9:09                 |
| ?10A A  | 9:30             | -              | 9:35                  | 9:39                 |
| ?10A A  | 10:00            | -              | 10:05                 | 10:09                |
| ?10A A  | 10:29            | -              | 10:34                 | 10:38                |
| ?10A A  | 11:00            | -              | 11:05                 | 11:09                |
| ?10A A  | 11:30            | -              | 11:35                 | 11:39                |
| ?10A P  | 12:00            | -              | 12:05                 | 12:09                |
| ?10A P  | 12:30            | -              | 12:35                 | 12:39                |
| ?10A P  | 1:00             | -              | 1:05                  | 1:09                 |
| ?10A P  | 1:30             | -              | 1:35                  | 1:39                 |
| ?10A P  | 2:00             | -              | 2:05                  | 2:09                 |
| ?10A P  | 2:32             | -              | 2:37                  | 2:41                 |
| ?10A P  | 3:00             | -              | 3:05                  | 3:09                 |
| ?10A P  | 3:30             | -              | 3:35                  | 3:39                 |
| ?10A P  | 4:00             | -              | 4:05                  | 4:09                 |
| ?10A P  | 4:30             | -              | 4:34                  | 4:39                 |
| ?10A P  | 5:00             | -              | 5:04                  | 5:09                 |
| ?10A P  | 5:31             | -              | 5:35                  | 5:41                 |
| ?10A P  | 6:00             | -              | 6:04                  | 6:10                 |
| ?10A P  | 6:30             | -              | 6:34                  | 6:39                 |
| ?10A P  | 7:00             | -              | 7:04                  | 7:09                 |
| ?10A P  | 7:30             | -              | 7:34                  | 7:39                 |
| ?10A P  | 8:00             | -              | 8:04                  | 8:09                 |
| ?10A P  | 9:00             | -              | 9:04                  | 9:07                 |
| ?10A P  | 10:00            | -              | 10:04                 | 10:07                |
| ?10A P  | 11:00            | -              | 11:04                 | 11:07                |
| ?10A X  | 12:00            | -              | 12:04                 | 12:07                |

**Exhibit 3-15: Example of RideOn Text**

| Block Name | Departure Terminal | Route Number | Departure Time | Arrival Time | Arrival Terminal | Direction Code | Run Number |
|------------|--------------------|--------------|----------------|--------------|------------------|----------------|------------|
| A6,        | SS,                | 1C,          | 507,           | 526,         | FH,              | I,             | 16 X       |
| E5,        | SS,                | 1C,          | 537,           | 556,         | FH,              | I,             | 23 X       |
| A7,        | SS,                | 11,          | 552,           | 609,         | FH,              | I,             | 8 X        |
| A3,        | SS,                | 1C,          | 603,           | 624,         | FH,              | I,             | 21 X       |
| D9,        | SS,                | 11,          | 613,           | 630,         | FH,              | I,             | 403 X      |
| B6,        | SS,                | 1C,          | 623,           | 646,         | FH,              | I,             | 11 X       |
| C4,        | SS,                | 11,          | 633,           | 652,         | FH,              | I,             | 12 X       |
| B1,        | SS,                | 11,          | 640,           | 659,         | FH,              | I,             | 3 X        |
| H3,        | SS,                | 11,          | 646,           | 705,         | FH,              | I,             | 54SX       |
| D8,        | SS,                | 1,           | 652,           | 718,         | FH,              | I,             | 40SX       |
| D4,        | SS,                | 11,          | 658,           | 720,         | FH,              | I,             | 38 X       |
| B5,        | SS,                | 11,          | 704,           | 726,         | FH,              | I,             | 14 X       |
| E9,        | SS,                | 11,          | 710,           | 732,         | FH,              | I,             | 42SX       |
| E4,        | SS,                | 1,           | 716,           | 744,         | FH,              | I,             | 68SX       |
| I4,        | SS,                | 11,          | 722,           | 747,         | FH,              | I,             | 408 X      |
| C7,        | SS,                | 11,          | 728,           | 754,         | FH,              | I,             | 1 X        |
| A1,        | SS,                | 11,          | 734,           | 801,         | FH,              | I,             | 20 X       |
| J9,        | SS,                | 1,           | 740,           | 811,         | FH,              | I,             | 76SX       |
| D3,        | SS,                | 11,          | 746,           | 813,         | FH,              | I,             | 13 X       |
| A7,        | SS,                | 11,          | 752,           | 819,         | FH,              | I,             | 8 X        |
| I8,        | SS,                | 11,          | 759,           | 826,         | FH,              | I,             | 74SX       |
| G3,        | SS,                | 1,           | 807,           | 838,         | FH,              | I,             | 52SX       |
| B2,        | SS,                | 11,          | 815,           | 842,         | FH,              | I,             | 25 X       |
| F4,        | SS,                | 11,          | 823,           | 850,         | FH,              | I,             | 48SX       |
| I3,        | SS,                | 1,           | 832,           | 901,         | FH,              | I,             | 79SX       |
| J7,        | SS,                | 11,          | 841,           | 907,         | FH,              | I,             | 81SX       |
| J2,        | SS,                | 1,           | 850,           | 917,         | FH,              | I,             | 78SX       |
| J4,        | SS,                | 11,          | 900,           | 922,         | FH,              | I,             | 80SX       |
| K2,        | SS,                | 1,           | 910,           | 936,         | FH,              | I,             | 89SX       |
| A6,        | SS,                | 11,          | 920,           | 942,         | FH,              | I,             | 16 X       |
| H4,        | SS,                | 1,           | 930,           | 956,         | FH,              | I,             | 71SX       |
| F5,        | SS,                | 11,          | 940,           | 1002,        | FH,              | I,             | 84 X       |
| C1,        | SS,                | 1,           | 951,           | 1017,        | FH,              | I,             | 15 X       |
| B4,        | SS,                | 1,           | 1005,          | 1031,        | FH,              | I,             | 93 X       |
| H7,        | SS,                | 1,           | 1021,          | 1047,        | FH,              | I,             | 65SX       |
| E6,        | SS,                | 1,           | 1041,          | 1107,        | FH,              | I,             | 43 X       |
| I5,        | SS,                | 1,           | 1101,          | 1127,        | FH,              | I,             | 61 X       |
| A6,        | SS,                | 1,           | 1121,          | 1147,        | FH,              | I,             | 16 X       |
| K3,        | SS,                | 1,           | 1151,          | 1217,        | FH,              | I,             | 96 X       |
| B2,        | SS,                | 1,           | 1221,          | 1247,        | FH,              | I,             | 25 X       |
| F1,        | SS,                | 1,           | 1251,          | 1317,        | FH,              | I,             | 97 X       |
| A8,        | SS,                | 1,           | 1321,          | 1347,        | FH,              | I,             | 10 X       |
| D6,        | SS,                | 1,           | 1351,          | 1417,        | FH,              | I,             | 32 /       |
| D5,        | SS,                | 1,           | 1421,          | 1447,        | FH,              | I,             | 37 X       |
| C8,        | SS,                | 1,           | 1451,          | 1520,        | FH,              | I,             | 422 X      |
| K4,        | SS,                | 1C,          | 1521,          | 1549,        | FH,              | I,             | 101 X      |

**Exhibit 3-16: Fairfax Connector Schedule (Internet)**



In accordance with the requirements of the mode choice model, both ‘walk access’ and ‘drive access’ versions of both the AM and off-peak networks are prepared. The AM peak period is represented by the headways and run times in effect from 7-8 AM,<sup>4</sup> and transit service in the off-peak period is represented by the headways and run times in effect from 10 AM - 3 PM.

TPB transit line files are developed using mode codes, which designate a specific provider (or provider group) and represent operations for twenty-three transit service providers. Nine mode codes are employed: 1) local Metrobus routes, 2) Express Metrobus routes that traverse HOV lanes, 3) Metrorail lines, 4) Commuter Rail lines, 5) Light Rail and Transitway service, 6) Primary local bus lines and 7) Primary express bus lines for the inner jurisdictions, and 8) Secondary local bus lines for the outer jurisdictions and 9) Secondary express commuter bus lines. Exhibit 3-17 presents a summary of in-vehicle and out-of-vehicle mode conventions used in coding transit line files.

<sup>4</sup> This peak period definition is relaxed, however, to reflect earlier hourly periods for some express services that originate in the outer fringes of the study area.

**Exhibit 3-17: Transit Network Mode Codes**

| <b>In-Vehicle Mode Codes</b>     |                               |                            |  |
|----------------------------------|-------------------------------|----------------------------|--|
| <b>Mode No.</b>                  | <b>Mode Description</b>       | <b>Abbreviation/Prefix</b> | <b>Transit Service</b>   |
| 1                                | Local Metrobus                | "WM01 - 97, A - Z"         | WMATA (DC, Alex., Falls Church, & MTG, PG, ARL, FFX Counties)                              |
|                                  |                               | "DCC"                      | District of Columbia Circulator  |
| 2                                | Express Metrobus              | "WM05 - 29"                | WMATA (ARL, ALEX, FFX)   |
|                                  |                               | "REX"                      | WMATA (FFX. Co.)   |
| 3                                | Metrorail                     | "MRED"                     | RED Line   |
|                                  |                               | "MBLU"                     | BLUE Line  |
|                                  |                               | "MGRN"                     | GREEN Line   |
|                                  |                               | "MORN"                     | ORANGE Line  |
|                                  |                               | "MYEL"                     | YELLOW Line  |
|                                  |                               | "MDULL"                    | DULLES Line  |
| 4                                | Commuter Rail                 | "FRED"                     | Frederick Line (VRE)   |
|                                  |                               | "MASS"                     | Manassas Line (VRE)  |
|                                  |                               | "MBRU"                     | Brunswick Line (MARC)  |
|                                  |                               | "MCAM"                     | Camden Line (MARC)   |
|                                  |                               | "MPENN"                    | Penn Line (MARC)   |
|                                  |                               | "MFRED"                    | Frederick City Line (MARC)   |
|                                  |                               | "AMTRAK"                   | AMTRAC Service   |
| 5                                | Light Rail                    | "MTGLRT"                   | Georgetown Branch Light Rail (MTA)   |
|                                  |                               | "LRTDC"                    | Anacostia Light Rail Line (DDOT / WMATA)   |
|                                  |                               | "CCTLRT"                   | Montgomery Co. Corridor Cities Light Rail Line (MTA)                                       |
| 6                                | Other Primary - Local Bus     | "ART"                      | Arlington County Bus   |
|                                  |                               | "DAT"                      | City of Alexandria Bus   |
|                                  |                               | "F"                        | Fairfax County Bus   |
|                                  |                               | "GO"                       | Prince Georges County Bus  |
|                                  |                               | "RO"                       | Montgomery Co. Ride On Bus   |
|                                  |                               | "SG"                       | Fairfax City Bus   |
|                                  |                               | "TYSL"                     | Tyson's Circulator   |
| 7                                | Other Primary - Express Bus   | "DAT"                      | City of Alexandria Bus   |
|                                  |                               | "F"                        | Fairfax County Bus   |
| 8                                | Other Secondary - Local Bus   | "CC"                       | Calvert County Bus   |
|                                  |                               | "FT"                       | Frederick County Bus   |
|                                  |                               | "HT"                       | Howard County Bus  |
|                                  |                               | "L"                        | City of Laurel Bus   |
|                                  |                               | "LT"                       | Loudoun County Local Bus   |
|                                  |                               | "OL"                       | OMNI-LINK (PrinceWilliam Co. Local)  |
|                                  |                               | "VG"                       | Charles County Bus (VanGO)   |
|                                  |                               | "ST"                       | St Mary's County Bus   |
| 9                                | Other Secondary - Express Bus | "LC"                       | Lee Coaches Commuter Bus   |
|                                  |                               | "LCS"                      | Loudoun Co. Commuter Bus   |
|                                  |                               | "LINK"                     | Washington Flyer- Dulles/WFC   |
|                                  |                               | "MT"                       | Maryland MTA Bus (Frederick, Howard, Anne Arundel, Calvert, St Mary's, & Charles Counties) |
|                                  |                               | "OR"                       | OMNI-RIDE (Prince William Co. Commuter Bus)  |
|                                  |                               | "PQ"                       | Quicks Commuter Bus (Fredericksburg, Spotsylvania & Stafford Counties)                     |
|                                  |                               | "SDC"                      | Nat'l Coach Commuter Bus (Fredericksburg, Spotsylvania & Stafford Co's)                    |
| <b>Out-of-Vehicle Mode Codes</b> |                               |                            |  |
| 10                               | (Unused)                      |                            |  |
| 11                               | Drive Access Links            |                            |  |
| 12                               | Bus-toRail transfer Link      |                            |  |
| 13                               | Walkinfg Link                 |                            |  |
| 14                               | (Unused)                      |                            |  |
| 15                               | PNR-to_Bus Stop               |                            |  |
| 16                               | Zonal Access or Egress        |                            |  |

Ref:

C8exh3-14.xls

Light rail and transit systems using transitways are represented using Mode code “5”. Transit services coded as mode 5 are not modeled as premium rail (Metrorail and Commuter Rail). However, in the COG/TPB travel model, each transit line is unique and independent, so there are different operating characteristics by transit line, not simply by transit mode. For example, we can have a transit network with two LRT lines that have maximum cruise speeds of 35 mph and a third LRT line with a maximum cruise speed of 65 mph. Or you could have an LRT line coded with exactly the same operating characteristics as a BRT line. Exhibit 3-18 shows some of the planning guidelines for transit vehicles that are used in cases where COG/TPB staff lack detailed coding instructions.

The AM Peak and Off-Peak transit line files are text files containing information about transit lines, such as the headway, the run time, and the itinerary (i.e., the sequence of nodes taken by the transit vehicle as it travels its route). Line files are time-of-day specific, so there is one set of line files for the AM peak period and one set for the off-peak period.

As noted in Chapter one, prior TPB model versions have required that transit line files be provided in the older MINUTP TRNPTH format. Transit line files developed for the Version 2.2 model now reflect the newer TP+ TRNBUILD format. This newer format will allow for more accurate and consistent coding of transit lines over time. For example, using the newer format, one can designate bus stops as board-only or alight-only (useful for accurately coding express bus service). Similarly, one can code run times for sub-sections of a route, not just for the entire route, a feature useful for the accurate depiction of transit lines that undergo extensions or cutbacks.

The newer format also allowed the use of the OWNER keyword in TP+ TRNBUILD (TB) to store route-specific comments (such as route origin, route destination, and notes). In the past, we would store route-specific comments as a series of comment records/cards/lines, directly above the LINE (i.e., route) keyword. These route-specific comments records were indicated by a semicolon at the start of each record. When we edited the transit routes as text files, this presented no problems. But, if we were to edit the transit routes graphically in Viper or Cube Base (which is now possible using TRNBUILD, but was not possible under MINUTP TRNPTH), all the route-specific comment cards/records would float to the top of the file, thus becoming disassociated with the transit routes they were meant to describe.

The solution that has been instituted is to convert the information found in the comment records to information that is stored in the OWNER keyword, which can hold a fairly long text string, and is otherwise not used by TP+ for anything. Additionally, the OWNER keyword always remains attached to the other keywords describing a transit route (LINE) and two new variables have been added as route-specific comments; network year and Project\_ID or scenario. These variables will enable referencing transit lines by project identifiers and their completion years that are linked to the CLRP and TIP project list. A sample showing transit lines in TB format is displayed in Exhibit 3-19.

**Exhibit 3-18: Planning Guidelines for Transit Vehicles, U.S. Averages**

|  | <b>Bus</b>  | <b>BRT</b>   | <b>Light Rail</b>                                   | <b>Heavy Rail</b>                                   | <b>Commuter Rail</b>                                |
|--|---|--|---|---|---|
| <b>Speed, max. operational</b>                   | 65 mph  | 65 mph   | 50 to 60 mph  | 55 to 65 mph  | 70 to 125 mph                                       |
| <b>Speed, average operating (stops included)</b> | 13 mph  | Freeway:<br>* Non-stop: 40-50 mph<br>* All-stop: 25-35 mph<br>Arterial: 15 mph | 21 mph  | 28 to 33 mph  | 36 mph  |
| <b>Acceleration rate</b>                         | 2.5 to 2.7 mph/s<br>(2.9 to 4.0 ft/s <sup>2</sup> ) | 2.5 to 2.7 mph/s<br>(2.9 to 4.0 ft/s <sup>2</sup> )                            | 2.5 to 3.0 mph/s<br>(2.9 to 4.3 ft/s <sup>2</sup> ) | 2.5 to 3.0 mph/s<br>(2.9 to 4.3 ft/s <sup>2</sup> ) | 2.5 to 3.0 mph/s<br>(2.9 to 4.3 ft/s <sup>2</sup> ) |
| <b>Deceleration rate</b>                         | 2.5 to 2.7 mph/s<br>(2.9 to 4.0 ft/s <sup>2</sup> ) | 2.5 to 2.7 mph/s<br>(2.9 to 4.0 ft/s <sup>2</sup> )                            | 2.5 to 3.0 mph/s<br>(2.9 to 4.3 ft/s <sup>2</sup> ) | 2.5 to 3.0 mph/s<br>(2.9 to 4.3 ft/s <sup>2</sup> ) | 2.5 to 3.0 mph/s<br>(2.9 to 4.3 ft/s <sup>2</sup> ) |
| <b>Vehicle capacity, crush (persons/vehicle)</b> | 60 to 85  | 60 to 130  | 100 to 175  | 175 to 187  | 132 to 255  |
| <b>Dwell time</b>                                | 35 to 45 s  | 35 to 45 s   | 35 to 45 s  | 35 to 45 s  | 35 to 45 s  |
| <b>Capital costs: Total</b>                      | N/A   | 21.2 million \$/mi for a Busway (4, 8)   | 25.4 million \$/mi (4, 9)                           | 158.8 million \$/mi (4, 9)                          | N/A   |
| <b>Theoretical line capacity (persons/hour)</b>  | 60,600 per freeway lane (4, 10)                     | 60,600 per freeway lane (4, 10)  | 36,000 (4, 10)                                      | 69,000 (4, 10)                                      | 46,000 (4, 10)                                      |

Ref: c8exh3-15.xls

Notes:

1. Dollar values are for 2002, unless otherwise stated.
2. N/A: Not applicable or not available.

Sources:

1. Light rail: The Urban Transportation Monitor, September 3, 2004.
2. Heavy rail: The Urban Transportation Monitor, January 23, 2004.
3. Commuter rail: The Urban Transportation Monitor, April 4, 2003.
4. Modal Master Table, The Urban Transportation Monitor, May 2, 2003.
5. Bus rapid transit: Bus Rapid Transit, Volume 1: Case Studies in Bus Rapid Transit, TCRP Report 90, Transportation Research Board, 2003.
6. Bus rapid transit: Characteristics of Bus Rapid Transit for Decision-Making, Roderick B. Diaz (editor), prepared for the Federal Transit Administration, August 2004.
7. Acceleration/deceleration rates: Transit Capacity and Quality of Service Manual, 2<sup>nd</sup> Edition, Transit Cooperative Research Program (TCRP) Report 100, Transportation Research Board, 2003. Part 4: Bus Transit Capacity (pp 4-39 to 4-53) and Part 5: Rail Transit Capacity (p 5-50).
8. Characteristics of Urban Transportation Systems, Federal Transit Administration, 1992.
9. Includes guideway elements, yards and shops systems, stations, vehicles, special conditions, right of way, soft costs. Source: No. 8 above.
10. Obtained by taking the minimum headway and the maximum seating/standing capacity into account. This capacity is generally not obtained in actual operations of buses. Assumes 6 cars per train for LRT, 10 for rapid rail, and 6 for commuter rail.

**Exhibit 3-19: Example of TB Line File**

```

.
;** THE DC CIRCULATOR *****
.
; THE CIRCULATOR, --
; DCCWest
; UNION STATION
; WISCONSIN & K STREET NW
.
LINE NAME="DCCW",
OWNER="DCC;UNION STATION;WISCONSIN & K ST NW;2006;BASE",
ONEWAY=Y,MODE=01,FREQ[1]=10,RUNTIME=30,
N= 8654 8656 8657 -8659 8662 8580 8578 8566 8990,
8557 8552 8548 8547 8884 8512 8511 8503 -8502,
8470 8468 8450 8842 -8446 8441 8440 8439 8438,
8422 8421 8420 8419 8949 8527 8974
.
; THE CIRCULATOR, --
; DCCEast
; WISCONSIN & K STREET NW
; UNION STATION
.
LINE NAME="DCCE",
OWNER="DCC;WISCONSIN & K ST NW;UNION STATION;2006;BASE",
ONEWAY=Y,MODE=01,FREQ[1]=10,RUNTIME=30,
N= 8974 8973 8971 8970 8969 8965 8948 8949,
8419 8420 8421 8422 8438 8439 8440 8441 8446,
8842 8450 8468 -8470 -8502 -8503 8511 8512 8884,
-8547 -8548 -8552 -8557 -8990 8566 -8578 -8580 -8662 -8659,
-8657 8656 8654
.
; THE CIRCULATOR, --
; DCCNorth
; 6TH & MAINE AVE SW
; DC CONVENTION CENTER
.
LINE NAME="DCCN",
OWNER="DCC;6TH & MAINE AVE SW;DC CONVENTION CTR;2006;BASE",
ONEWAY=Y,MODE=01,FREQ[1]=10,RUNTIME=30,
N= 9775 9774 9770 -9771 8415 -8414 -8416 8445 8444 8443,
-8400 8464 8456 -8491 8492 -8478 8521 8955 -8554 8553,
8552 -8551 -8989 8927
.
; THE CIRCULATOR, --
; DCCSouth
=====> |
.

```



The prospect of manually coding the various access-to-transit and transfer links associated with transit networks is especially onerous, because of the size and complexity of the COG/TPB transit networks. To facilitate coding requirements, several automated procedures are used as part of the transit network building process to enable automatic generation of auxiliary transit links, including walk-connect links, auto-connect links, transfer links, and downtown walk links.

Two file types, transit line files and a single station/PNR file are required for the automatic generation of auxiliary transit links. The station/PNR file contains a list of all rail stations and park-and-ride lots (both existing and future) included in the transit network. It also contains an array of information that is associated with each station, including bus transfer nodes and the nearest TAZ. An example of a Station and Park-and-ride file is displayed in Exhibit 3-20. A description of the station/PNR file format can be found in Exhibit 3-37.

It is assumed that travelers access the transit system by either walking or driving, so zone centroids are connected to the transit system via a series of walk-access links and drive-access links. If a traveler accesses the transit system by auto, the traveler must go via a designated park-and-ride (PNR) lot, so these drive-access links are also called PNR access links.

An automated procedure is used to generate drive-access links for both the peak and off-peak time periods. In the past, such as for the Version 2.0/TP+ model, we generated up to four drive-access links, for each zone, to the four “closest” rail or bus station’s park-and-ride lot. However, using such a procedure (“best N stations”) can lead to a phenomenon known as the “transit paradox,” when one applies the procedure to multiple network scenarios (years).

An example of the transit paradox is a case where a major rail extension is added to a network, but the extension results in a *loss* in transit trips for some zones, instead of the increase that would be expected. The paradox is caused by inconsistent coding of transit access links, usually drive-access links, where, instead of simply adding new drive-access links that are associated with the rail extension, the modeler both adds some drive-access links and removes some existing drive-access links.

The removal of some links usually occurs at end-of-the-line stations that, because of the extension, are no longer end-of-the-line stations. Thus, in adding the new rail extension, some drive-access links that existed in the base scenario were removed by the modeler (or modeler’s software) as the rail line is extended, instead of simply adding new drive-access links in addition to the existing ones. The result is that, for some interchanges, the drive-access transit travel time goes up and transit trips are reduced, despite the addition of the transit service.

**Exhibit 3-20: Station/Park-and Ride File**

| Seq. No. | Mode | PNR Y/N | Sta Y/N | Station / Park-n-Ride | Sta. Cent. | Zone | Station No. | PNR No. | Stop Node#1 | Stop Node#2 | Stop Node#3 | Stop Node#4 | X Coord. | Y Coord. | Operation |
|----------|------|---------|---------|-----------------------|------------|------|-------------|---------|-------------|-------------|-------------|-------------|----------|----------|-----------|
| 81       | M    | Y       | Y       | Shady Grove           | 2331       | 482  | 7301        | 7501    | 3402        | 3404        |             |             | 1265612  | 529165   | 1990      |
| 82       | M    | Y       | Y       | Rockville             | 2332       | 478  | 7302        | 7502    | 3358        | 7605        | 3377        |             | 1270634  | 516535   | 1990      |
| 83       | M    | Y       | Y       | Twinbrook             | 2333       | 413  | 7303        | 7503    | 3351        | 3684        |             |             | 1278226  | 508219   | 1990      |
| 84       | M    | Y       | Y       | White Flint           | 2334       | 405  | 7304        | 7504    | 3339        | 3682        |             |             | 1280534  | 503092   | 1990      |
| 85       | M    | Y       | Y       | Grosvenor             | 2335       | 403  | 7305        | 7505    | 3334        |             |             |             | 1282836  | 496371   | 1990      |
| 86       | M    |         | Y       | Medical Center        | 2336       | 346  | 7306        |         | 3054        |             |             |             | 1284770  | 485106   | 1990      |
| 87       | M    | Y       | Y       | Bethesda              | 2337       | 344  | 7307        | 7507    | 3048        |             |             |             | 1285562  | 479783   | 1990      |
| 88       | M    |         | Y       | Friendship Heights    | 2338       | 204  | 7308        |         | 9140        |             |             |             | 1288006  | 471198   | 1990      |
| 89       | M    |         | Y       | Tenleytown            | 2339       | 207  | 7309        |         | 9117        |             |             |             | 1289640  | 466682   | 1990      |
| 90       | M    |         | Y       | Van Ness-UDC          | 2340       | 122  | 7310        |         | 9153        |             |             |             | 1294409  | 464951   | 1990      |
| 91       | M    |         | Y       | Cleveland Park        | 2341       | 117  | 7311        |         | 9156        |             |             |             | 1295609  | 462324   | 1990      |
| 92       | M    |         | Y       | Woodley Park-Zoo      | 2342       | 117  | 7312        |         | 9163        |             |             |             | 1297352  | 458473   | 1990      |
| 93       | M    |         | Y       | Dupont Circle         | 2343       | 46   | 7313        |         | 8901        | 8905        |             |             | 1299825  | 453021   | 1990      |
| 94       | M    |         | Y       | Farragut North        | 2344       | 9    | 7314        |         | 8440        |             |             |             | 1301031  | 450307   | 1990      |
| 95       | M    |         | Y       | Metro Center          | 2345       | 19   | 7315        |         | 8912        | 8919        |             |             | 1304332  | 448558   | 1990      |
| 96       | M    |         | Y       | Gallery Place         | 2346       | 23   | 7316        |         | 8955        |             |             |             | 1306089  | 448605   | 1990      |
| 97       | M    |         | Y       | Judiciary Square      | 2347       | 26   | 7317        |         | 8474        |             |             |             | 1307581  | 447815   | 1990      |
| 98       | M    |         | Y       | Union Station         | 2348       | 64   | 7318        |         | 8656        | 8654        | 7601        |             | 1310220  | 448408   | 1990      |
| 99       | M    | Y       | Y       | Rhode Island Ave      | 2349       | 145  | 7319        | 7519    | 9422        |             |             |             | 1313227  | 456640   | 1990      |
| 100      | M    |         | Y       | Brookland-CUA         | 2350       | 139  | 7320        |         | 9575        |             |             |             | 1313751  | 461393   | 1990      |
| 101      | M    | Y       | Y       | Fort Totten           | 2351       | 248  | 7321        | 7521    | 9544        |             |             |             | 1311788  | 467989   | 1990      |
| 102      | M    |         | Y       | Takoma                | 2352       | 242  | 7322        |         | 9273        |             |             |             | 1307187  | 476759   | 1990      |
| 103      | M    | Y       | Y       | Silver Spring         | 2353       | 361  | 7323        | 7523    | 3178        | 7602        | 3900        | 3901        | 1303398  | 483452   | 1990      |
| 104      | M    | Y       | Y       | Forest Glen           | 2354       | 429  | 7324        | 7524    | 3605        |             |             |             | 1300177  | 491390   | 1990      |
| 105      | M    | Y       | Y       | Wheaton               | 2355       | 425  | 7325        | 7525    | 3607        |             |             |             | 1297955  | 499408   | 1990      |
| 106      | M    |         | Y       | Archives              | 2356       | 25   | 7336        |         | 8458        | 8494        |             |             | 1306106  | 446727   | 1990      |
| 107      | M    |         | Y       | L'Enfant Plaza        | 2357       | 77   | 7337        |         | 8444        | 8445        | 7701        |             | 1306103  | 443645   | 1990      |
| 108      | M    | Y       | Y       | Huntington            | 2358       | 1468 | 7348        | 7548    | 6121        |             |             |             | 1290877  | 410419   | 1990      |
| 109      | M    |         | Y       | Eisenhower Avenue     | 2359       | 1366 | 7349        |         | 5678        |             |             |             | 1291897  | 413065   | 1990      |
| 110      | M    |         | Y       | King Street           | 2360       | 1364 | 7350        |         | 5660        | 7704        |             |             | 1294645  | 414996   | 1990      |
| 111      | M    |         | Y       | Braddock Road         | 2361       | 1336 | 7351        |         | 5661        |             |             |             | 1296953  | 417688   | 1990      |
| 112      | M    |         | Y       | National Airport      | 2362       | 1240 | 7352        |         | 5200        |             |             |             | 1299828  | 432187   | 1990      |
| 113      | M    |         | Y       | Crystal City          | 2363       | 1242 | 7353        |         | 5304        | 5307        | 7702        |             | 1298129  | 433637   | 1990      |
| 114      | M    |         | Y       | Pentagon City         | 2364       | 1243 | 7354        |         | 5211        |             |             |             | 1295342  | 435270   | 1990      |
| 115      | M    |         | Y       | Pentagon              | 2365       | 1230 | 7355        |         | 5225        | 5389        | 5390        |             | 1297011  | 437934   | 1990      |

Ref: c8exh3-16.xls

To minimize the occurrence of the transit paradox, we developed a new routine for generating drive-access links that is based on one or more set distances from each zone. Specifically, two conditions apply:

1. The straight-line distance from a zone to a PNR lot must be: (1) within 4 miles for DC, Arlington Co., and Alexandria; (2) within 5 miles for Montgomery Co., Fairfax Co., and Prince George's Co.; and (3) within 8 miles for all remaining jurisdictions.
2. Zone to PNR connections will not cross the Potomac River, except for origin zones in Loudoun Co. and Jefferson Co., since the MARC commuter rail system in Maryland does serve commuters from those jurisdictions.

One other enhancement used in automated coding of drive-access links in the model involves the time and distance coded on drive-access links. Although drive-access links were always coded with a time and distance representing the over-the-road travel between the zone and the PNR, in the past, this time and distance were based on a lookup table of speeds. Now, however, the time and distance values are updated based on the output speeds from the initial "pump prime" traffic assignment. This means that the times and speeds on drive-access links should reflect the fact that they will congest as roadway links congest. Further details can be found in the Version 2.2 model User's Guide, which discusses the automatic generation of both auto-access links and walk-access links.

Transit network data is shown for the Metrorail system in Exhibit 3-21. The Washington Metropolitan Area Transit Authority developed future-year Metrorail service plans based on findings from studies such as the Core Capacity Study, 10-Year Capital Improvement Plan, and the Dulles Corridor Final Environmental Impact Study (FEIS). Metrorail system information is displayed for base year 2002, and forecast 2008, 2009, 2010, 2020, and 2030 networks. The exhibit lists COG's transit route name, origin and destination stations, headways, run-times, line distances, and average line speed for service during the AM peak hour and Off-peak period. Based on model staff recommendations, Metrorail runtimes were revised in transit networks developed during FY2007 for the following lines: Green Line (Greenbelt-Branch Ave.) 47 minutes, Blue-B Line (Franconia/Springfield-Greenbelt) 60 minutes, and Orange-C Line (Vienna-Largo) 65 minutes.

Exhibit 3-21: Metrorail Data for 2007 CLRP and FY2008-2013 TIP Transit Networks

| Line   | 2002                |                     |         |         |            |           |           | Year 2008           |                     |         |         |            |           |           |
|--------|---------------------|---------------------|---------|---------|------------|-----------|-----------|---------------------|---------------------|---------|---------|------------|-----------|-----------|
|        | Rail Network Data   |                     |         |         |            |           |           | Rail Network Data   |                     |         |         |            |           |           |
|        | O-Sta.              | D-Sta.              | am hdwy | op hdwy | time (min) | dist (mi) | spd (mph) | O-Sta.              | D-Sta.              | am hdwy | op hdwy | time (min) | dist (mi) | spd (mph) |
| Red-A  | Shady Grove (1)     | Glenmont (26)       | 6       | 12      | 62         | 31.38     | 30.37     | Shady Grove (1)     | Glenmont (26)       | 6       | 12      | 62         | 31.38     | 30.37     |
| Red-B  | Grosvenor (5)       | Silver Spring (23)  | 6       | 12      | 40         | 19.27     | 28.91     | Grosvenor (5)       | Silver Spring (23)  | 6       | 12      | 40         | 19.29     | 28.94     |
| Grn-A  | Greenbelt (27)      | Branch (45)         | 6       | 12      | 47         | 22.45     | 28.66     | Greenbelt (27)      | Branch (45)         | 6       | 12      | 47         | 22.45     | 28.66     |
| Yel-A  | Mt. Vn Sq.-UDC (35) | Huntington (48)     | 6       | 12      | 26         | 10.6      | 24.46     | Mt. Vn Sq.-UDC (35) | Huntington (48)     | 6       | 12      | 26         | 10.6      | 24.46     |
| Blu-A  | FranSpgfld (47)     | Addison Rd. (83)    | 6       | 12      | 60         | 26.85     | 26.9      | FranSpgfld (47)     | Largo (87)          | 6       | 12      | 62         | 29.27     | 28.33     |
| Blu-B  | --                  | --                  | --      | --      | --         | --        | --        | --                  | --                  | --      | --      | --         | --        | --        |
| Oran-A | Vienna (57)         | New Carrollton (80) | 6       | 12      | 57         | 25.8      | 27.16     | Vienna (57)         | New Carrollton (80) | 6       | 12      | 57         | 25.8      | 27.16     |
| Oran-B | --                  | --                  | --      | --      | --         | --        | --        | --                  | --                  | --      | --      | --         | --        | --        |
| Oran-C | --                  | --                  | --      | --      | --         | --        | --        | --                  | --                  | --      | --      | --         | --        | --        |

| Line   | Year 2009           |                     |         |         |            |           |           | Year 2010           |                     |         |         |            |           |           |
|--------|---------------------|---------------------|---------|---------|------------|-----------|-----------|---------------------|---------------------|---------|---------|------------|-----------|-----------|
|        | Rail Network Data   |                     |         |         |            |           |           | Rail Network Data   |                     |         |         |            |           |           |
|        | O-Sta.              | D-Sta.              | am hdwy | op hdwy | time (min) | dist (mi) | spd (mph) | O-Sta.              | D-Sta.              | am hdwy | op hdwy | time (min) | dist (mi) | spd (mph) |
| Red-A  | Shady Grove (1)     | Glenmont (26)       | 6       | 12      | 62         | 31.38     | 30.37     | Shady Grove (1)     | Glenmont (26)       | 6       | 12      | 62         | 31.38     | 30.37     |
| Red-B  | Grosvenor (5)       | Silver Spring (23)  | 6       | 12      | 40         | 19.29     | 28.94     | Grosvenor (5)       | Silver Spring (23)  | 6       | 12      | 40         | 19.29     | 28.94     |
| Grn-A  | Greenbelt (27)      | Branch (45)         | 6       | 12      | 47         | 22.45     | 28.66     | Greenbelt (27)      | Branch (45)         | 6       | 12      | 47         | 22.45     | 28.66     |
| Yel-A  | Mt. Vn Sq.-UDC (35) | Huntington (48)     | 6       | 12      | 26         | 10.6      | 24.46     | Mt. Vn Sq.-UDC (35) | Huntington (48)     | 7       | 12      | 26         | 10.6      | 24.46     |
| Blu-A  | FranSpgfld (47)     | Largo (87)          | 6       | 12      | 62         | 29.27     | 28.33     | FranSpgfld (47)     | Largo (87)          | 14      | 12      | 62         | 29.27     | 28.33     |
| Blu-B  | --                  | --                  | --      | --      | --         | --        | --        | FranSpgfld (47)     | Greenbelt (27)      | 14      | --      | 60         | 28.19     | 28.19     |
| Oran-A | Vienna (57)         | New Carrollton (80) | 6       | 12      | 57         | 25.8      | 27.16     | Vienna (57)         | New Carrollton (80) | 7       | 12      | 57         | 25.8      | 27.16     |
| Oran-B | --                  | --                  | --      | --      | --         | --        | --        | --                  | --                  | --      | --      | --         | --        | --        |
| Oran-C | --                  | --                  | --      | --      | --         | --        | --        | Vienna (57)         | Largo (87)          | 14      | --      | 65         | 26.37     | 24.34     |

| Line   | Year 2020           |                     |         |         |            |           |           | Year 2030           |                     |         |         |            |           |           |
|--------|---------------------|---------------------|---------|---------|------------|-----------|-----------|---------------------|---------------------|---------|---------|------------|-----------|-----------|
|        | Rail Network Data   |                     |         |         |            |           |           | Rail Network Data   |                     |         |         |            |           |           |
|        | O-Sta.              | D-Sta.              | am hdwy | op hdwy | time (min) | dist (mi) | spd (mph) | O-Sta.              | D-Sta.              | am hdwy | op hdwy | time (min) | dist (mi) | spd (mph) |
| Red-A  | Shady Grove (1)     | Glenmont (26)       | 2.5     | 6       | 62         | 31.38     | 30.37     | Shady Grove (1)     | Glenmont (26)       | 2.5     | 6       | 62         | 31.38     | 30.37     |
| Red-B  | Grosvenor (5)       | Silver Spring (23)  | --      | --      | --         | --        | --        | Grosvenor (5)       | Silver Spring (23)  | --      | --      | --         | --        | --        |
| Grn-A  | Greenbelt (27)      | Branch (45)         | 7       | 12      | 47         | 22.45     | 28.66     | Greenbelt (27)      | Branch (45)         | 7       | 12      | 47         | 22.45     | 28.66     |
| Yel-A  | Mt. Vn Sq.-UDC (35) | Huntington (48)     | 7       | 12      | 26         | 10.6      | 24.46     | Mt. Vn Sq.-UDC (35) | Huntington (48)     | 7       | 12      | 26         | 10.6      | 24.46     |
| Blu-A  | Franconia (47)      | Largo (87)          | 14      | 12      | 62         | 29.27     | 28.33     | FranSpgfld (47)     | Largo (87)          | 14      | 12      | 62         | 29.27     | 28.33     |
| Blu-B  | Franconia (47)      | Greenbelt (27)      | 14      | --      | 60         | 28.19     | 28.2      | FranSpgfld (47)     | Greenbelt (27)      | 14      | --      | 60         | 28.16     | 28.16     |
| Oran-A | Vienna (57)         | New Carrollton (80) | 7       | 12      | 57         | 25.8      | 27.16     | Vienna (57)         | New Carrollton (80) | 7       | 12      | 57         | 25.8      | 27.16     |
| Oran-B | Dulles GrnWay (98)  | Stadium-Armory (75) | 7       | 12      | 75         | 34.74     | 27.79     | Dulles GrnWay (98)  | Stadium-Armory (75) | 7       | 12      | 75         | 34.74     | 27.79     |
| Oran-C | Vienna (57)         | Largo (87)          | 14      | --      | 65         | 26.37     | 24.34     | Vienna (57)         | Largo (87)          | 14      | --      | 65         | 26.37     | 24.34     |

*FY-2008 Network Documentation: Highway and Transit Network Development*

Commuter rail and light rail transit line data is based on schedule information obtained in the fall/winter of 2007 and 2007 CLRP inputs and shown in Exhibits 3-22 through 3-24. Rail line characteristics are displayed for base year 2002, and forecast 2008, 2009, 2010, 2020, and 2030. These exhibits list COG’s transit route name, origin and destination stations, headways, run-times, line distances, and average line speed for service during the AM peak hour and Off-peak period. As a note, MARC commuter rail’s Brunswick line MBRU2O was re-designated as MBRU1O, Penn Line MPEN3I was merged with MPEN1I, lines MPEN2O (Local service) and MPEN4O (Limited service) were re-designated as MPEN1O and MPEN2O, in all transit networks developed for and after 2004. MCAM3I was removed from transit networks in 2001 and MCAM4O was removed from transit networks in 2004. AMTRAC routes are also modeled and are designated with the line prefix identifier “AMTK”.

**Exhibit 3-22: Commuter Rail and Light Rail Network Data for 2002 and 2008**

| * Express<br>** Limited Stops<br>Line | Origin Station      | Destination Station  | Year 2002  |            |               |               |              |                |                 | Year 2008  |            |               |               |              |                |                 |
|---------------------------------------|---------------------|----------------------|------------|------------|---------------|---------------|--------------|----------------|-----------------|------------|------------|---------------|---------------|--------------|----------------|-----------------|
|                                       |                     |                      | am<br>hdwy | op<br>hdwy | amRT<br>(min) | opRT<br>(min) | dist<br>(mi) | amspd<br>(mph) | opsdpd<br>(mph) | am<br>hdwy | op<br>hdwy | amRT<br>(min) | opRT<br>(min) | dist<br>(mi) | amspd<br>(mph) | opsdpd<br>(mph) |
| FRED1I                                | Fredericksburg      | Union Station (01)   | 30         | --         | 88            | --            | 53.92        | 36.76          | --              | 30         | --         | 90            | --            | 53.92        | 35.95          | --              |
| FRED1O                                | Union Station (01)  | Fredericksburg       | --         | 60         | --            | 86            | 53.92        | --             | 37.62           | --         | 60         | --            | 91            | 53.92        | --             | 35.55           |
| FRED2I                                | Fredericksburg      | Union Station (01)   | 60         | 60         | 75            | 75            | 53.92        | 43.14          | 43.14           | --         | 60         | --            | 74            | 53.92        | --             | 43.72           |
| FRED3O**                              | Union Station (01)  | Fredericksburg       | --         | 60         | --            | 67            | 53.92        | --             | 48.29           | 60         | 60         | 64            | 67            | 53.92        | 50.55          | 48.29           |
| FRED4O                                | Union Station (01)  | Fredericksburg       | --         | 60         | --            | 70            | 53.92        | --             | 46.22           | --         | 60         | --            | 70            | 53.92        | --             | 46.22           |
| MASS1I                                | Broad Run Airport   | Union Station (01)   | 30         | 60         | 75            | 75            | 34.34        | 27.47          | 27.47           | 30         | --         | 75            | --            | 34.34        | 27.47          | --              |
| MASS1O                                | Union Station (01)  | Broad Run Airport    | --         | 60         | --            | 73            | 34.34        | --             | 28.22           | --         | 60         | --            | 73            | 34.34        | --             | 28.22           |
| MASS2I**                              | Broad Run Airport   | Union Station (01)   | --         | --         | --            | --            | --           | --             | --              | --         | 60         | --            | 70            | 34.34        | --             | 29.43           |
| MASS2O**                              | Union Station (01)  | Broad Run Airport    | 60         | --         | 75            | --            | 34.34        | 27.47          | --              | 60         | --         | 75            | --            | 34.34        | 27.47          | --              |
| MFREDI                                | Frederick City (18) | Union Station (01)   | --         | --         | --            | --            | --           | --             | --              | --         | --         | --            | --            | --           | --             | --              |
| AMTK1I**                              | Fredericksburg      | Union Station (01)   | --         | --         | --            | --            | --           | --             | --              | 60         | --         | 80            | --            | 53.92        | 40.44          | --              |
| AMTK1O**                              | Union Station (01)  | Fredericksburg       | --         | --         | --            | --            | --           | --             | --              | 60         | 60         | 65            | 65            | 53.92        | 49.77          | 49.77           |
| AMTK2I**                              | Fredericksburg      | Union Station (01)   | --         | --         | --            | --            | --           | --             | --              | --         | 60         | --            | 91            | 53.92        | --             | 35.55           |
| AMTK2O**                              | Union Station (01)  | Fredericksburg       | --         | --         | --            | --            | --           | --             | --              | --         | 60         | --            | 62            | 53.92        | --             | 52.18           |
| AMTK3O**                              | Union Station (01)  | Manassas             | --         | --         | --            | --            | --           | --             | --              | --         | 60         | --            | 69            | 53.92        | --             | 46.89           |
| AMTK4O**                              | Union Station (01)  | Manassas             | --         | --         | --            | --            | --           | --             | --              | --         | 60         | --            | 52            | 31.82        | --             | 36.72           |
| MBRU1I                                | Duffields (16)      | Union Station (01)   | --         | --         | --            | --            | --           | --             | --              | 60         | --         | 92            | --            | 47.02        | 30.67          | --              |
| MBRU1O                                | Union Station (01)  | Brunswick (14)       | --         | --         | --            | --            | --           | --             | --              | --         | 60         | --            | 83            | 47.02        | --             | 33.99           |
| MBRU2O                                | Union Station (01)  | Brunswick (14)       | --         | 60         | --            | 78            | 47.02        | --             | 36.17           | --         | --         | --            | --            | --           | --             | --              |
| MBRU2I                                | Brunswick (14)      | Union Station (01)   | 60         | --         | 78            | --            | 47.02        | 36.17          | --              | 60         | --         | 104           | --            | 58.62        | 33.82          | --              |
| MBRU3I**                              | Brunswick (14)      | Union Station (01)   | 60         | --         | 87            | --            | 47.02        | 32.43          | --              | --         | --         | --            | --            | --           | --             | --              |
| MBRU4I**                              | Brunswick (14)      | Union Station (01)   | 60         | --         | 81            | --            | 47.02        | 34.83          | --              | --         | --         | --            | --            | --           | --             | --              |
| MCAMI1                                | Elkridge (32)       | Union Station (01)   | 60         | --         | 55            | --            | 26.80        | 29.24          | --              | --         | --         | --            | --            | --           | --             | --              |
| MCAMI1                                | Dorsey (34)         | Union Station (01)   | --         | --         | --            | --            | --           | --             | --              | 60         | --         | 60            | --            | 26.80        | 26.80          | --              |
| MCAMI1O**                             | Union Station (01)  | Dorsey (34)          | 60         | --         | 39            | --            | 26.80        | 41.23          | --              | 60         | --         | 42            | --            | 26.80        | 38.29          | --              |
| MCAM2I                                | Elkridge (32)       | Union Station (01)   | 60         | --         | 50            | --            | 26.80        | 32.16          | --              | --         | --         | --            | --            | --           | --             | --              |
| MCAM2I                                | Dorsey (34)         | Union Station (01)   | --         | --         | --            | --            | --           | --             | --              | 60         | --         | 55            | --            | 26.80        | 29.24          | --              |
| MCAM3I**                              | Dorsey (34)         | Union Station (01)   | 60         | --         | 43            | --            | 26.80        | 37.40          | --              | 60         | --         | 38            | --            | 33.30        | 52.58          | --              |
| MCAMI1                                | Elkridge (32)       | Union Station (01)   | --         | --         | --            | --            | --           | --             | --              | --         | --         | --            | --            | --           | --             | --              |
| MCAM3O                                | Union Station (01)  | Elkridge (32)        | --         | 60         | --            | 80            | 26.80        | --             | 20.10           | --         | --         | --            | --            | --           | --             | --              |
| MCAM3O**                              | Union Station (01)  | Dorsey (34)          | --         | --         | --            | --            | --           | --             | --              | --         | 60         | --            | 75            | 26.80        | --             | 21.44           |
| MCAM4O                                | Union Station (01)  | Laurel Race Tk. (36) | --         | 60         | --            | 50            | 18.70        | --             | 22.44           | --         | --         | --            | --            | --           | --             | --              |
| MFREDI**                              | Frederick City (18) | Union Station (01)   | --         | --         | --            | --            | --           | --             | --              | 60         | --         | 100           | --            | 55.15        | 33.09          | --              |
| MPEN1I                                | BWI Station (55)    | Union Station (01)   | 60         | 60         | 41            | 39            | 27.03        | 39.56          | 41.58           | 30         | 60         | 40            | 39            | 27.03        | 40.55          | 41.58           |
| MPEN1O                                | Union Station (01)  | BWI Station (55)     | --         | --         | --            | --            | --           | --             | --              | 60         | 60         | 34            | 34            | 27.03        | 47.70          | 47.70           |
| MPEN2I                                | BWI Station (55)    | Union Station (01)   | --         | --         | --            | --            | --           | --             | --              | 60         | --         | 30            | --            | 27.03        | 54.06          | --              |
| MPEN2O                                | Union Station (01)  | BWI Station (55)     | 60         | 60         | 26            | 36            | 27.03        | 62.38          | 45.05           | 60         | --         | 30            | --            | 27.03        | 54.06          | --              |
| MPEN3I*                               | BWI Station (55)    | Union Station (01)   | 60         | --         | 40            | --            | 27.03        | 40.55          | --              | --         | --         | --            | --            | --           | --             | --              |
| MPEN4O*                               | Union Station (01)  | BWI Station (55)     | 60         | --         | 33            | --            | 27.03        | 49.15          | --              | --         | --         | --            | --            | --           | --             | --              |
| CCTLRT                                | Metro Grove         | Shady Grove          | --         | --         | --            | --            | --           | --             | --              | --         | --         | --            | --            | --           | --             | --              |
| CCTPY1                                | Crystal City Metro  | Glebe Rd Ext.        | --         | --         | --            | --            | --           | --             | --              | 6          | 12         | 10            | 10            | 1.10         | 6.60           | 6.60            |
| CCTPY2                                | Crystal City Metro  | Braddock Rd Metro    | --         | --         | --            | --            | --           | --             | --              | --         | --         | --            | --            | --           | --             | --              |
| DCSTCAR                               | Anacostia           | Bolling AFB          | --         | --         | --            | --            | --           | --             | --              | 15         | 30         | 7             | 7             | 0.3          | 2.57           | 2.57            |
| LRTMTG                                | Bethesda(70)        | Silver Spring (73)   | --         | --         | --            | --            | --           | --             | --              | --         | --         | --            | --            | --           | --             | --              |

Ref: c7exh3-18.xls

**Exhibit 3-23: Commuter Rail and Light Rail Network Data for 2009 and 2010**

| * Express<br>** Limited Stops<br>Line | Origin Station      | Destination Station  | Year 2009  |            |               |               |              |                | Year 2010      |            |            |               |               |              |                |                |
|---------------------------------------|---------------------|----------------------|------------|------------|---------------|---------------|--------------|----------------|----------------|------------|------------|---------------|---------------|--------------|----------------|----------------|
|                                       |                     |                      | am<br>hdwy | op<br>hdwy | amRT<br>(min) | opRT<br>(min) | dist<br>(mi) | amspd<br>(mph) | opspd<br>(mph) | am<br>hdwy | op<br>hdwy | amRT<br>(min) | opRT<br>(min) | dist<br>(mi) | amspd<br>(mph) | opspd<br>(mph) |
| FREDI1                                | Fredericksburg      | Union Station (01)   | 30         | --         | 90            | --            | 53.92        | 35.95          | --             | 20         | --         | 90            | --            | 53.92        | 35.95          | --             |
| FRED10                                | Union Station (01)  | Fredericksburg       | --         | 60         | --            | 91            | 53.92        | --             | 35.55          | --         | 60         | --            | 91            | 53.92        | --             | 35.55          |
| AMTK11**                              | Fredericksburg      | Union Station (01)   | 60         | --         | 80            | --            | 53.92        | 40.44          | --             | 60         | --         | 80            | --            | 53.92        | 40.44          | --             |
| AMTK10**                              | Union Station (01)  | Fredericksburg       | 60         | 60         | 65            | 65            | 53.92        | 49.77          | 49.77          | 60         | 60         | 65            | 65            | 53.92        | 49.77          | 49.77          |
| AMTK21**                              | Fredericksburg      | Union Station (01)   | --         | 60         | --            | 91            | 53.92        | --             | 35.55          | --         | 60         | --            | 91            | 53.92        | --             | 35.55          |
| AMTK20**                              | Union Station (01)  | Fredericksburg       | --         | 60         | --            | 62            | 53.92        | --             | 52.18          | --         | 60         | --            | 62            | 53.92        | --             | 52.18          |
| MASS11                                | Broad Run Airport   | Union Station (01)   | 30         | 60         | 75            | 75            | 34.34        | 27.47          | 27.47          | 20         | --         | 75            | --            | 34.34        | 27.47          | --             |
| MASS10                                | Union Station (01)  | Broad Run Airport    | --         | 60         | --            | 73            | 34.34        | --             | 28.22          | --         | 60         | --            | 73            | 34.34        | --             | 28.22          |
| MASS21**                              | Broad Run Airport   | Union Station (01)   | --         | 60         | --            | 70            | 34.34        | --             | 29.43          | --         | 60         | --            | 70            | 34.34        | --             | 29.43          |
| MASS20**                              | Union Station (01)  | Broad Run Airport    | 60         | --         | 75            | --            | 34.34        | 27.47          | --             | 60         | --         | 75            | --            | 34.34        | 27.47          | --             |
| AMTK30**                              | Union Station (01)  | Manassas             | --         | 60         | --            | 69            | 53.92        | --             | 46.89          | --         | 60         | --            | 69            | 53.92        | --             | 46.89          |
| AMTK40**                              | Union Station (01)  | Manassas             | --         | 60         | --            | 52            | 31.82        | --             | 36.72          | --         | 60         | --            | 52            | 31.82        | --             | 36.72          |
| MBRU11                                | Brunswick (14)      | Union Station (01)   | 60         | --         | 92            | --            | 47.02        | 30.67          | --             | 60         | --         | 92            | --            | 47.02        | 30.67          | --             |
| MBRU10                                | Union Station (01)  | Brunswick (14)       | --         | 60         | --            | 83            | 47.02        | --             | 33.99          | --         | 60         | --            | 83            | 47.02        | --             | 33.99          |
| MBRU20                                | Union Station (01)  | Brunswick (14)       | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| MBRU21**                              | Duffields (16)      | Union Station (01)   | 60         | --         | 104           | --            | 58.62        | 33.82          | --             | 60         | --         | 104           | --            | 58.62        | 33.82          | --             |
| MCAM11                                | Dorsey (34)         | Union Station (01)   | 60         | --         | 60            | --            | 26.80        | 26.80          | --             | 60         | --         | 60            | --            | 26.80        | 26.80          | --             |
| MCAM10                                | Union Station (01)  | Dorsey (34)          | 60         | --         | 42            | --            | 26.80        | 38.29          | --             | 60         | --         | 42            | --            | 26.80        | 38.29          | --             |
| MCAM21**                              | Dorsey (34)         | Union Station (01)   | 60         | --         | 55            | --            | 26.80        | 29.24          | --             | 60         | --         | 55            | --            | 26.80        | 29.24          | --             |
| MCAM31**                              | Dorsey (34)         | Union Station (01)   | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| MCAM30**                              | Union Station (01)  | Dorsey (34)          | --         | 60         | --            | 75            | 26.80        | --             | 21.44          | --         | 60         | --            | 75            | 26.80        | --             | 21.44          |
| MCAM40                                | Union Station (01)  | Laurel Race Tk. (36) | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| MFRED1**                              | Frederick City (18) | Union Station (01)   | 60         | --         | 100           | --            | 55.15        | 33.09          | --             | 60         | --         | 100           | --            | 55.15        | 33.09          | --             |
| MPEN11                                | BWI Station (55)    | Union Station (01)   | 30         | 60         | 40            | 39            | 27.03        | 40.55          | 41.58          | 30         | 60         | 40            | 39            | 27.03        | 40.55          | 41.58          |
| MPEN10                                | Union Station (01)  | BWI Station (55)     | 60         | 60         | 34            | 34            | 27.03        | 47.70          | 47.70          | 60         | 60         | 34            | 34            | 27.03        | 47.70          | 47.70          |
| MPEN21                                | BWI Station (55)    | Union Station (01)   | 60         | --         | 30            | --            | 27.03        | 54.06          | --             | 60         | --         | 30            | --            | 27.03        | 54.06          | --             |
| MPEN20                                | Union Station (01)  | BWI Station (55)     | 60         | --         | 30            | --            | 27.03        | 54.06          | --             | 60         | --         | 30            | --            | 27.03        | 54.06          | --             |
| AMTK30**                              | BWI Station (55)    | Union Station (01)   | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| AMTK40**                              | Union Station (01)  | BWI Station (55)     | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| <b>Light Rail</b>                     |                     |                      |            |            |               |               |              |                |                |            |            |               |               |              |                |                |
| CCTLRT                                | Metro Grove         | Shady Grove          | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| CCTPY1                                | Crystal City Metro  | Glebe Rd Ext.        | 6          | 12         | 10            | 10            | 1.10         | 6.60           | 6.60           | 6          | 12         | 10            | 10            | 1.10         | 6.60           | 6.60           |
| CCTPY2                                | Crystal City Metro  | Braddock Rd Metro    | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| DCSTCAR                               | Anacostia           | Bolling AFB          | 15         | 30         | 7             | 7             | 0.30         | 2.57           | 2.57           | 15         | 30         | 7             | 7             | 0.3          | 2.57           | 2.57           |
| LRTMTG                                | Bethesda(70)        | Silver Spring (73)   | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |

Ref: c7exh3-19.xls

**Exhibit 3-24: Commuter Rail and Light Rail Network Data for 2020 and 2030**

| * Express<br>** Limited Stops<br>Line | Origin Station      | Destination Station  | Year 2020  |            |               |               |              |                |                | Year 2030  |            |               |               |              |                |                |
|---------------------------------------|---------------------|----------------------|------------|------------|---------------|---------------|--------------|----------------|----------------|------------|------------|---------------|---------------|--------------|----------------|----------------|
|                                       |                     |                      | am<br>hdwy | op<br>hdwy | amRT<br>(min) | opRT<br>(min) | dist<br>(mi) | amspd<br>(mph) | opspd<br>(mph) | am<br>hdwy | op<br>hdwy | amRT<br>(min) | opRT<br>(min) | dist<br>(mi) | amspd<br>(mph) | opspd<br>(mph) |
| FRED1I                                | Fredericksburg      | Union Station (01)   | 20         | --         | 90            | --            | 53.92        | 35.95          | --             | 20         | --         | 90            | --            | 53.92        | 35.95          | --             |
| FRED1O                                | Union Station (01)  | Fredericksburg       | --         | 60         | --            | 91            | 53.92        | --             | 35.55          | --         | 60         | --            | 91            | 53.92        | --             | 35.55          |
| AMTK1I**                              | Fredericksburg      | Union Station (01)   | 60         | --         | 80            | --            | 53.92        | 40.44          | --             | 60         | --         | 80            | --            | 53.92        | 40.44          | --             |
| AMTK1O**                              | Union Station (01)  | Fredericksburg       | 60         | 60         | 65            | 65            | 53.92        | 49.77          | 49.77          | 60         | 60         | 65            | 65            | 53.92        | 49.77          | 49.77          |
| AMTK2I**                              | Fredericksburg      | Union Station (01)   | --         | 60         | --            | 91            | 53.92        | --             | 35.55          | --         | 60         | --            | 91            | 53.92        | --             | 35.55          |
| AMTK2O**                              | Union Station (01)  | Fredericksburg       | --         | 60         | --            | 62            | 53.92        | --             | 52.18          | --         | 60         | --            | 62            | 53.92        | --             | 52.18          |
| MASS1I                                | Broad Run Airport   | Union Station (01)   | 20         | --         | 75            | --            | 34.34        | 27.47          | --             | 20         | --         | 75            | --            | 34.34        | 27.47          | --             |
| MASS1O                                | Union Station (01)  | Broad Run Airport    | --         | 60         | --            | 73            | 34.34        | --             | 28.22          | --         | 60         | --            | 73            | 34.34        | --             | 28.22          |
| MASS2I**                              | Broad Run Airport   | Union Station (01)   | --         | 60         | --            | 70            | 34.34        | --             | 29.43          | --         | 60         | --            | 70            | 34.34        | --             | 29.43          |
| MASS2O**                              | Union Station (01)  | Broad Run Airport    | 60         | --         | 75            | --            | 34.34        | 27.47          | --             | 60         | --         | 75            | --            | 34.34        | 27.47          | --             |
| AMTK3O**                              | Union Station (01)  | Manassas             | --         | 60         | --            | 69            | 53.92        | --             | 46.89          | --         | 60         | --            | 69            | 53.92        | --             | 46.89          |
| AMTK4O**                              | Union Station (01)  | Manassas             | --         | 60         | --            | 52            | 31.82        | --             | 36.72          | --         | 60         | --            | 52            | 31.82        | --             | 36.72          |
| MBRU1I                                | Brunswick (14)      | Union Station (01)   | 60         | --         | 92            | --            | 47.02        | 30.67          | --             | 60         | --         | 92            | --            | 47.02        | 30.67          | --             |
| MBRU1O                                | Union Station (01)  | Brunswick (14)       | --         | 60         | --            | 83            | 47.02        | --             | 33.99          | --         | 60         | --            | 83            | 47.02        | --             | 33.99          |
| MBRU2O                                | Union Station (01)  | Brunswick (14)       | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| MBRU2I**                              | Duffields (16)      | Union Station (01)   | 60         | --         | 104           | --            | 58.62        | 33.82          | --             | 60         | --         | 104           | --            | 58.62        | 33.82          | --             |
| MCAM1I                                | Dorsey (34)         | Union Station (01)   | 60         | --         | 60            | --            | 26.80        | 26.80          | --             | 60         | --         | 60            | --            | 26.80        | 26.80          | --             |
| MCAM1O                                | Union Station (01)  | Dorsey (34)          | 60         | --         | 42            | --            | 26.80        | 38.29          | --             | 60         | --         | 42            | --            | 26.80        | 38.29          | --             |
| MCAM2I**                              | Dorsey (34)         | Union Station (01)   | 60         | --         | 55            | --            | 26.80        | 29.24          | --             | 60         | --         | 55            | --            | 26.80        | 29.24          | --             |
| MCAM3I**                              | Dorsey (34)         | Union Station (01)   | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| MCAM3O**                              | Union Station (01)  | Dorsey (34)          | --         | 60         | --            | 75            | 26.80        | --             | 21.44          | --         | 60         | --            | 75            | 26.80        | --             | 21.44          |
| MCAM4O                                | Union Station (01)  | Laurel Race Tk. (36) | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| MFREDI**                              | Frederick City (18) | Union Station (01)   | 60         | --         | 100           | --            | 55.15        | 33.09          | --             | 60         | --         | 100           | --            | 55.15        | 33.09          | --             |
| MPEN1I                                | BWI Station (55)    | Union Station (01)   | 30         | 60         | 40            | 39            | 27.03        | 40.55          | 41.58          | 30         | 60         | 40            | 39            | 27.03        | 40.55          | 41.58          |
| MPEN1O                                | Union Station (01)  | BWI Station (55)     | 60         | 60         | 34            | 34            | 27.03        | 47.70          | 47.70          | 60         | 60         | 34            | 34            | 27.03        | 47.70          | 47.70          |
| MPEN2I                                | BWI Station (55)    | Union Station (01)   | 60         | --         | 30            | --            | 27.03        | 54.06          | --             | 60         | --         | 30            | --            | 27.03        | 54.06          | --             |
| MPEN2O                                | Union Station (01)  | BWI Station (55)     | 60         | --         | 30            | --            | 27.03        | 54.06          | --             | 60         | --         | 30            | --            | 27.03        | 54.06          | --             |
| AMTK3O**                              | BWI Station (55)    | Union Station (01)   | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| AMTK4O**                              | Union Station (01)  | BWI Station (55)     | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| <b>Light Rail</b>                     |                     |                      |            |            |               |               |              |                |                |            |            |               |               |              |                |                |
| CCLRT                                 | Metro Grove         | Shady Grove          | 6          | 10         | 40            | 40            | 13.31        | 19.97          | 19.97          | 6          | 10         | 40            | 40            | 13.3         | 19.95          | 19.95          |
| CCTPY1                                | Crystal City Metro  | Glebe Rd Ext.        | --         | --         | --            | --            | --           | --             | --             | --         | --         | --            | --            | --           | --             | --             |
| CCTPY2                                | Crystal City Metro  | Braddock Rd Metro    | 6          | 12         | 21            | 21            | 3.55         | 10.14          | 10.14          | 6          | 12         | 21            | 21            | 3.55         | 10.14          | 10.14          |
| DCSTCAR                               | Anacostia           | Bolling AFB          | 15         | 30         | 7             | 7             | 0.30         | 2.57           | 2.57           | 15         | 30         | 7             | 7             | 0.3          | 2.57           | 2.57           |
| LRTMTG                                | Bethesda(70)        | Silver Spring (73)   | 6          | 12         | 12            | 12            | 3.75         | 18.75          | 18.75          | 6          | 12         | 12            | 12            | 3.75         | 18.75          | 18.75          |

Ref: c7exh3-20.xls

A file named “rail\_Ink.bse” is required in the transit building process and contains link data for Metrorail, commuter rail, and light rail services. Rail link attributes consist of simply the a-node, b-node, distance and average speed. Exhibit 3-38 displays a rail link file format description. Rail link data for Metrorail and commuter rail service is supplied by the Washington Metropolitan Area Transit Authority (WMATA), Maryland Transit Administration (MTA), and Virginia Department of Rail and Public Transportation (VDRPT). Data for light rail service is provided by implementing agencies.

### **3.4 Transit Fare Building Overview**

A series of files is needed to support the fare building process. COG's transit fare process consists of two programs known as MFARE1 and MFARE2, which operate in sequence to estimate Metrorail station-to-station fares and to estimate total (bus and rail) fares between TAZs. A more rigorous description of the MFARE1 and 2 processes can be found in Chapter 15 (Transit Fare Development) of the Version 2.2 model User's Guide.

The files needed to support the fare building process include a transit walk area percentage file, a zone file indicating the equivalence between each TAZ and its associated bus fare zone, a Metrorail network link file and coordinate file, and a bus fare matrix indicating fares between large pre-defined super zones (bus-fare-zone to bus-fare-zone fare matrix). Descriptions of the assumptions employed in the development of bus fare matrices are presented in the following pages.

The year 2002 served as the base year for the air quality conformity assessment of the 2007 CLRP and FY2008-2013 TIP. So, fare matrices are based on WMATA tariffs in effect for base years and the current tariff in effect at the time of network development. The WMATA fare tariffs used for FY2008 follows: year 2002 (Tariff Number 19, effective June 1999), and in forecast years 2008-2030 (Tariff Number 23 effective June 2004). In FY2006, the bus-fare-zone to bus-fare-zone matrix for Tariff Number 23 was modified to reflect a modification in fares for VRE railway express operations. Tariff #23 was revised again in January 2008 and included an increase in the peak base boarding charge. No changes were made to the off-peak Metrorail fare. Exhibit 3-25 displays WMATA's Metrorail and bus fare policy for the peak and off-peak periods and control parameters for the MWCOC's transit fare computation process.

Fares for service outside the WMATA compact area are developed using passenger costs for transit available in each area. Currently, fares for MARC, VRE, MTA, PRTC/Omni, and other transit providers are the same for the peak and off-peak periods. These fares are provided in cents for the year that the Tariff was in effect. The least expensive fares available are used to reflect what the majority of regular work trip commuters would pay and are averaged for areas with multiple services and fare structures.

Areas with multiple services and fare structures are represented as being in a primary and secondary fare zone. For example, S.E. Fairfax County is served by Fairfax Connector (bus fare zone 1) and VRE commuter rail service (bus fare zone 18). Therefore in this area, each TAZ would have two bus fare zones (a primary and a secondary) listed in the TAZ/bus fare equivalence file. MFARE2 would calculate the cost of a trip from a TAZ in this area to downtown D.C. (bus fare zone 1) by averaging the cost of a trip from bus fare zone 1 to bus fare zone 1 with the cost of a trip from bus fare zone 18 to bus fare zone 1.

COG/TPB's bus fare zones are designed to reflect transit service areas. These areas are based on WMATA tariffs, fares for MARC, VRE, and remaining transit providers. The numbering scheme for bus fare zones was revised for use with the Version 2.2 model. Bus fare zones are now numbered 1 - 21 as opposed to 1, 1 - 3,7.



**Exhibit 3-25: WMATA Metrorail and Bus Fare Policy\* and MFARE1/2 Control Parameters**

| Process | Time Period | Control  | Name       | Policy Variable        | Tariff #19<br>6/20/1999 | Tariff #23<br>1/6/2008 |
|---------|-------------|----------|------------|------------------------|-------------------------|------------------------|
| MFARE1  | AM          | MFARE1   | UPARMS (7) | Boarding Distance      | 3 miles                 | 3 miles                |
|         |             |          | UPARMS (8) | Secondary Distance     | 3 miles                 | 3 miles                |
|         |             |          | UPARMS (1) | Boarding Fare          | \$1.10                  | \$1.65                 |
|         |             |          | UPARMS (3) | Maximum Fare           | \$3.25                  | \$4.50                 |
|         |             |          | UPARMS (2) | Secondary Fare         | \$0.19                  | \$0.27                 |
|         |             |          | UPARMS (9) | Tertiary Fare          | \$0.165                 | \$0.240                |
| MFARE1  | OFF-PEAK    | MFARE1OP | UPARMS (7) | Boarding Distance      | 7 miles                 | 7 miles                |
|         |             |          | UPARMS (8) | Secondary Distance     | 3 miles                 | 3 miles                |
|         |             |          | UPARMS (1) | Boarding Fare          | \$1.10                  | \$1.35                 |
|         |             |          | UPARMS (3) | Maximum Fare           | \$2.10                  | \$2.35                 |
|         |             |          | UPARMS (2) | Secondary Fare         | \$0.50                  | \$0.50                 |
|         |             |          | UPARMS (9) | Tertiary Fare          | \$0.50                  | \$0.50                 |
| MFARE2  | AM/OFF-PEAK | MFARE2TP | UPARMS (2) | Deflator               |                         |                        |
|         |             |          | UPARMS (4) | DC Rail-Bus Discount   | \$0.85                  | \$0.90                 |
|         |             |          | UPARMS (5) | MD Rail-Bus Discount   | \$0.85                  | \$0.90                 |
|         |             |          | UPARMS (6) | Va/1 Rail-Bus Discount | \$0.85                  | \$0.90                 |
|         |             |          | UPARMS (7) | Va/2 Rail-Bus Discount | \$0.85                  | \$0.90                 |

The WMATA Metrorail and bus fare policy and control parameters are taken from the Tariff of the Washington Metropolitan Area Transit Authority for the Metrorail and Metrobus operations within the Washington Area, Tariff 19 (effective June 1999), and Tariff 23 (effective January 2008).

In June of 1999, the Washington Metropolitan Area Transit Authority published a new tariff #19 for Metrorail and Metrobus operations. The Metrobus fare structure was changed to integrate the Metrobus and Metrorail system and foster seamless travel with other local transit providers. The Metrorail fare structure featured regular fares and reduced fares by time-of-day, based on composite miles. Fares are provided in year 1999 cents (or the year that the tariff was in effect). A flat fare of \$1.10 for Metrobus trips was created by eliminating all zone charges in Maryland and Virginia as well as eliminating interstate charges for trips traversing the regions major jurisdictions. The tariff also eliminated the 10-cent Metrobus transfer fee, reduced fares on regular and express Metrobus routes, and cut most local bus fares. In addition, transfers from Metrorail to Metrobus cost 25 cents and Metrobus transfers on Montgomery County's Ride-On bus system, as well as other local bus systems such as DASH, Fairfax Connector, CUE, ART, Connect-A-Ride, and PRTC OmniRide were honored.

Fares for MARC, VRE and other transit providers are the same for the peak and off-peak. These fares are based on those in effect during 1999. The least expensive fares available were used to reflect what the majority of regular work trip commuters would pay. Fares were averaged for areas with multiple services. Exhibit 3-25 shows the basic peak and off-peak period fare policies addressed in the modeling procedures for tariff #19.

Bus fare zones/service areas were redesigned to reflect the new Metrobus fare tariff and changes in fares for the remaining transit providers in the modeled area. In addition to new bus fare zones/service areas, the new regional fare structure removed the need for separate matrices for peak period fares and off-peak period fares. This was made possible by creating a flat fare of \$1.10 for Metrobus trips by eliminating all zone charges in Maryland and Virginia as well as eliminating interstate charges for trips traversing the regions major jurisdictions.

Bus fare zones/service areas for WMATA Tariff #19 are defined in Exhibit 3-26. Regional bus fare zone maps showing primary and secondary fare zones are displayed in Exhibit 3-27 and Exhibit 3-28, respectively. The bus fare matrix is shown in Exhibit 3-29.

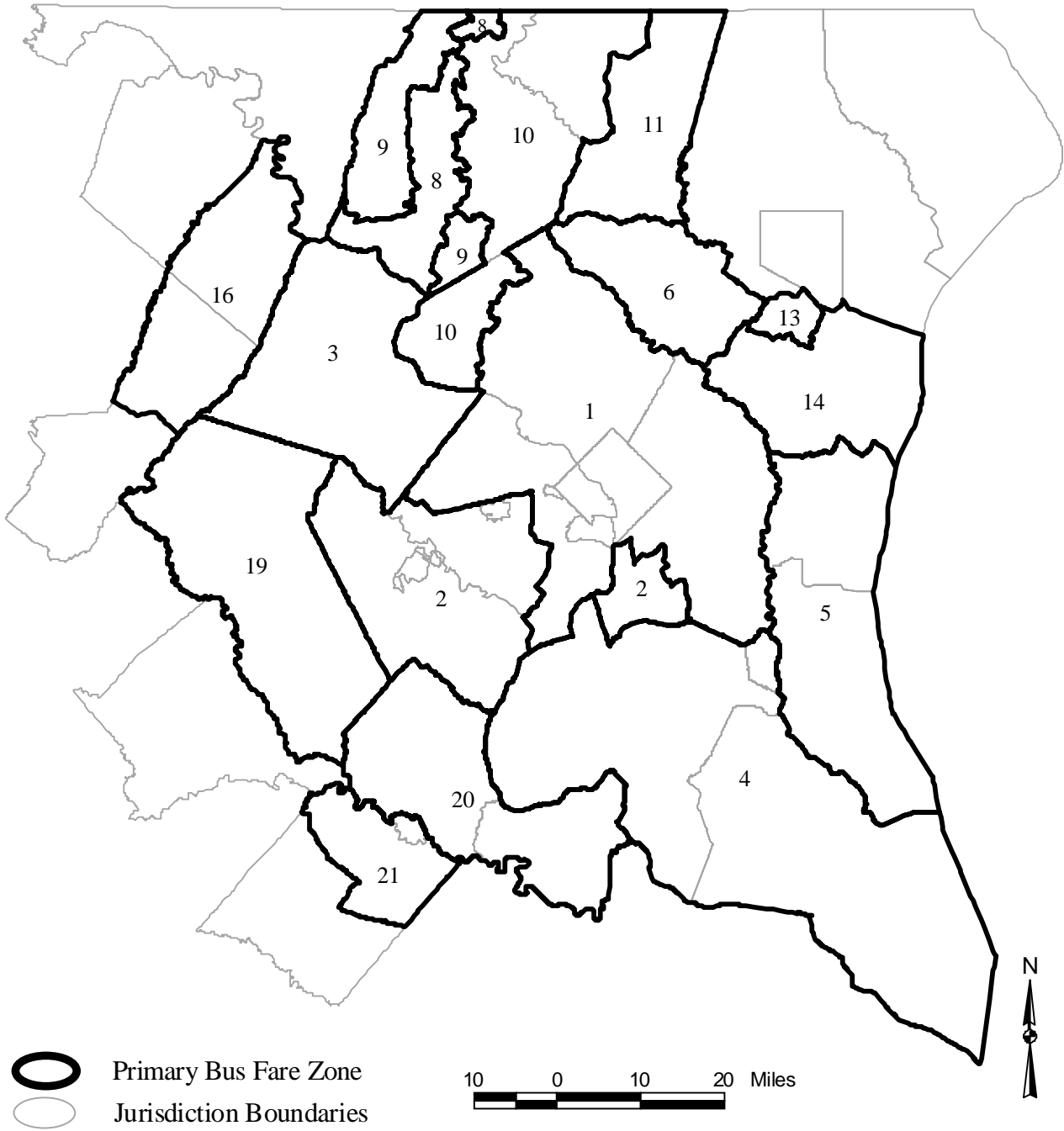
**Exhibit 3-26: Bus Fare Zones/Service Areas for WMATA Tariff #19**

| <b><u>1<sup>st</sup> Fare Zone</u></b> | <b><u>Bus/Rail Service<sup>5</sup></u></b>   | <b><u>Approximate Service Area</u></b>                   |
|--|--|--|
| Fare Zone 1                            | WMATA Regular Service                        | DC, MTG, PG, ALEX, ARL, & FFX                            |
| Fare Zone 2                            | WMATA Express & Special Fare Service, & OMNI | Inner Maryland, Fairfax Suburbs, & Prince William County |
| Fare Zone 3                            | Loudoun Commuter Bus Service                 | Loudoun County   |
| Fare Zone 4                            | MTA Commuter Bus                             | Charles / St Mary's Counties                             |
| Fare Zone 5                            | MTA Commuter Bus                             | S. Anne Arundel / Calvert Counties                       |
| Fare Zone 6                            | MTA Commuter Bus                             | Howard County  |
| Fare Zone 7                            | MTA Commuter Bus                             | Frederick County   |
| Fare Zone 8                            | Frederick Co Local Bus                       | Frederick County   |
| Fare Zone 9                            | MARC Rail / Brunswick Line                   | W. Frederick / N. Loudoun Counties                       |
| Fare Zone 10                           | MARC Rail / Brunswick Line                   | MTG. Co. (Ring 8) / E. Frederick & W. Carroll Counties   |
| Fare Zone 11                           | MARC Rail / Brunswick Line                   | MTG. Co. (Mid County) /W. Howard Co. & E. Carroll Co.    |
| Fare Zone 12                           | MARC Rail / Brunswick Line                   | Montgomery Co. (Inner County)                            |
| Fare Zone 13                           | MARC / Penn, Camden Lines                    | NE. Howard /NW Anne Arundel Co.                          |
| Fare Zone 14                           | MARC / Penn, Camden Lines                    | SE. Howard/Anne Arundel Co. & NE. Prince Georges Co.     |
| Fare Zone 15                           | MARC / Penn, Camden Lines                    | N. Central Prince Georges Co. & SW. Anne Arundel Co.     |
| Fare Zone 16                           | MARC/Brunswick Line                          | Jefferson W.VA. & Clarke Co. VA.                         |
| Fare Zone 17                           | VRE Rail Zones 1&2                           | Inside Beltway   |
| Fare Zone 18                           | VRE Rail Zones 3&4                           | Fairfax & Prince William Counties                        |
| Fare Zone 19                           | VRE Rail Zones 5&6                           | Prince William & Fauquier Counties                       |
| Fare Zone 20                           | VRE Rail Zones 7&8                           | Stafford & King George Counties                          |
| Fare Zone 21                           | VRE Rail Zone 9                              | City of Fredericksburg & Spotsylvania Co.                |

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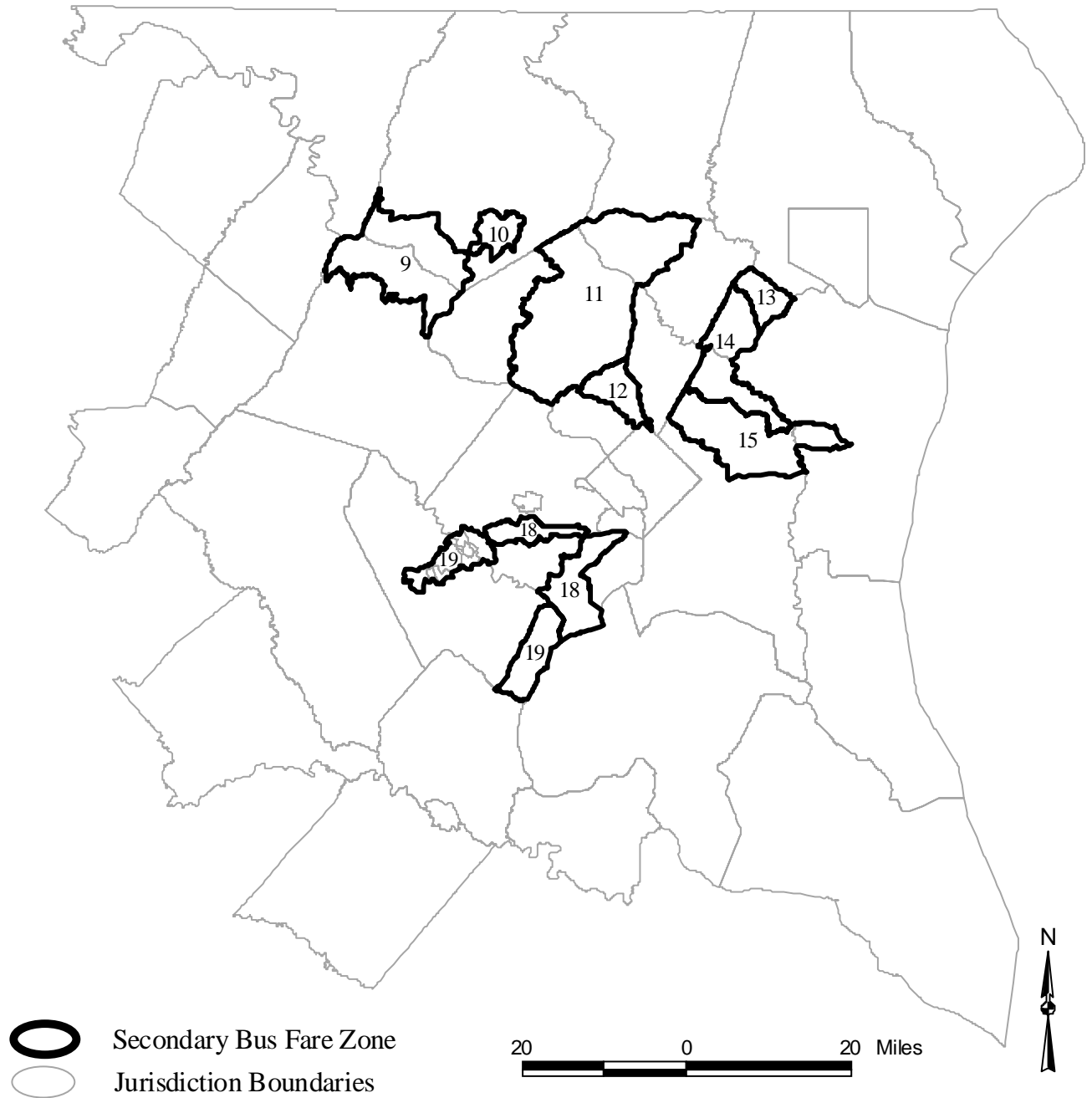
<sup>5</sup>This rail service includes MARC and VRE. Metrorail is not included, but is modeled in the RPFARE1 process.

**Exhibit 3-27: Primary Bus Fare Zone Map for Tariff #19**



Ref: 2002\_primary\_bfzn\_#19.wmf  
WMATA's Tariff Number 19 (effective June 1999)

**Exhibit 3-28: Secondary Bus Fare Zone Map for Tariff #19**



Ref: 2002\_secondary\_bfzn\_#19.wmf  
WMATA's Tariff Number 19 (effective June 1999)

**Exhibit 3-29: Regional AM Peak and Off-Peak Bus Fare Matrix for 2002  
Between MWCOG Fare Zones  
(Expressed in 1999 cents)**

|       | WMATA Regular Service | WMATA Express Ser.&Internal Metrobus Special Fare Service | Loudoun Com. Bus | Charles&St. Mary's Com. Bus (MTA) | Calvert & Southern AA Com. Bus (MTA) | Howard Com. Bus (MTA) | Frederick Com. Bus (MTA) | Frederick Internal Bus | MARC Rail Brunswick (Frederick) | MARC Rail Brunswick (Mont. R8) | MARC Rail Brunswick (Mid Mont.) | MARC Rail Brunswick (Inner) | MARC Rail Penn/ Camden (Outer) | MARC Rail Penn/Camden (Mid) | MARC Rail Penn/Camden (Inner) | MARC Rail Brunswick (WVA&Clark Auto Conn.) | VRE Zones 1&2 (Inside Beltway) |
|-------|-----------------------|---|------------------|-----------------------------------|--------------------------------------|-----------------------|--------------------------|------------------------|---------------------------------|--------------------------------|---------------------------------|-----------------------------|--------------------------------|-----------------------------|-------------------------------|--|--------------------------------|
| Zones | 1                     | 2   | 3                | 4                                 | 5                                    | 6                     | 7                        | 8                      | 9                               | 10                             | 11                              | 12                          | 13                             | 14                          | 15                            | 16   | 17                             |
| 1     | 110                   | 200   | 400              | 278                               | 276                                  | 259                   | 279                      | 433                    | 349                             | 279                            | 234                             | 186                         | 280                            | 234                         | 186                           | 434  | 248                            |
| 2     | 200                   | 50  | 600              | 478                               | 476                                  | 459                   | 479                      | 633                    | 549                             | 479                            | 434                             | 386                         | 480                            | 434                         | 386                           | 634  | 448                            |
| 3     | 400                   | 600   | 100              | 678                               | 676                                  | 629                   | 679                      | 833                    | 749                             | 679                            | 634                             | 586                         | 680                            | 634                         | 586                           | 834  | 648                            |
| 4     | 278                   | 478   | 678              | 278                               | 554                                  | 537                   | 557                      | 711                    | 627                             | 557                            | 512                             | 464                         | 558                            | 512                         | 464                           | 712  | 526                            |
| 5     | 276                   | 476   | 676              | 554                               | 276                                  | 535                   | 555                      | 709                    | 625                             | 555                            | 510                             | 462                         | 556                            | 510                         | 462                           | 710  | 524                            |
| 6     | 259                   | 459   | 629              | 537                               | 535                                  | 259                   | 538                      | 692                    | 608                             | 538                            | 493                             | 445                         | 539                            | 493                         | 445                           | 693  | 507                            |
| 7     | 279                   | 479   | 679              | 557                               | 555                                  | 538                   | 204                      | 204                    | 204                             | 204                            | 204                             | 234                         | 559                            | 513                         | 465                           | 713  | 527                            |
| 8     | 433                   | 633   | 833              | 711                               | 709                                  | 692                   | 204                      | 84                     | 84                              | 294                            | 341                             | 619                         | 713                            | 667                         | 619                           | 867  | 681                            |
| 9     | 349                   | 549   | 749              | 627                               | 625                                  | 608                   | 204                      | 84                     | 186                             | 210                            | 257                             | 303                         | 629                            | 583                         | 535                           | 210  | 597                            |
| 10    | 279                   | 479   | 679              | 557                               | 555                                  | 538                   | 204                      | 294                    | 210                             | 186                            | 186                             | 234                         | 559                            | 513                         | 465                           | 294  | 527                            |
| 11    | 234                   | 434   | 634              | 512                               | 510                                  | 493                   | 204                      | 341                    | 257                             | 186                            | 186                             | 420                         | 514                            | 468                         | 420                           | 340  | 482                            |
| 12    | 186                   | 386   | 586              | 464                               | 462                                  | 445                   | 234                      | 619                    | 303                             | 234                            | 420                             | 186                         | 466                            | 420                         | 372                           | 373  | 434                            |
| 13    | 280                   | 480   | 680              | 558                               | 556                                  | 539                   | 559                      | 713                    | 629                             | 559                            | 514                             | 466                         | 186                            | 186                         | 234                           | 714  | 528                            |
| 14    | 234                   | 434   | 634              | 512                               | 510                                  | 493                   | 513                      | 667                    | 583                             | 513                            | 468                             | 420                         | 186                            | 186                         | 420                           | 668  | 482                            |
| 15    | 186                   | 386   | 586              | 464                               | 462                                  | 445                   | 465                      | 619                    | 535                             | 465                            | 420                             | 372                         | 234                            | 420                         | 186                           | 620  | 434                            |
| 16    | 434                   | 634   | 834              | 712                               | 710                                  | 693                   | 713                      | 867                    | 210                             | 294                            | 340                             | 373                         | 714                            | 668                         | 620                           | 186  | 682                            |
| 17    | 248                   | 448   | 648              | 526                               | 524                                  | 507                   | 527                      | 681                    | 597                             | 527                            | 482                             | 434                         | 528                            | 482                         | 434                           | 682  | 248                            |
| 18    | 285                   | 485   | 685              | 563                               | 561                                  | 544                   | 564                      | 718                    | 634                             | 564                            | 519                             | 471                         | 565                            | 519                         | 471                           | 719  | 285                            |
| 19    | 344                   | 544   | 744              | 622                               | 620                                  | 603                   | 623                      | 777                    | 693                             | 623                            | 578                             | 530                         | 624                            | 578                         | 530                           | 778  | 285                            |
| 20    | 372                   | 572   | 772              | 650                               | 648                                  | 631                   | 651                      | 805                    | 721                             | 651                            | 606                             | 558                         | 652                            | 606                         | 558                           | 806  | 372                            |
| 21    | 379                   | 579   | 779              | 657                               | 655                                  | 638                   | 658                      | 812                    | 728                             | 658                            | 613                             | 565                         | 659                            | 613                         | 565                           | 813  | 379                            |

Ref: BF19MTX.XLS

WMATA fares are based on Tariff #19 effective 6/20/99.  
Remaining transit provider fares are based on 1999 information.

The transit fare policy assumed in the most recent Version 2.2 model forecasts are based on the Washington Metropolitan Area Transit Authority's Tariff #23 (effective June 2004) for Metrorail and Metrobus operations. In 2004, the new fare structure increased the base fare for Metrorail, from \$1.20 to \$1.35, a 5-cent increase for Metrobus from \$1.20 to \$1.25 and a 10-cent increase from \$2.40 to \$2.50 for Metro Access. Other service providers increased fares at that time, and those increases are reflected in the fare matrix. VRE fare increases in the summer of 2006 precipitated an update of the bus fare matrix.

Tariff #23 was revised in January 2008. The tariff included an increase in the peak base boarding charge, which covers the first 3 composite miles by \$0.30 from \$1.35 to \$1.65. The peak period mileage charge, covering travel over 3 composite miles and up to 6 composite miles increased by 0.05/composite mile from \$0.22/composite mile to \$0.27/composite mile. An increase in the peak period mileage charge, covering travel over 6 composite miles by \$0.045/composite mile from \$0.195/composite mile to \$0.24/composite mile and an increase the maximum peak period fare by \$0.60 from \$3.90 to \$4.50. No changes have been made to the off-peak Metrorail fare parameters. The rail-to-bus discount (90 cents, globally) has not changed, but there is language in documentation that in one year it will be available *only* to Smartcard users (something to keep in mind). It is also suspected that the rail-to-bus discount may increase by 10 cents (i.e., change to 1.00) but this is not yet formalized by the WMATA board. For the time being, the 90 cent discount will be maintained.

Please note these increases are not made to other fare inputs, i.e. the bus fare matrix or the TAZ-to-bus fare zone equivalency files, used in the fare modeling process. The tariff.txt file contains the base Metrorail fares (peak and off-peak) and the rail-to-bus discounts by jurisdiction. The Metrorail fares are calculated using a combination of base fares and incremental fare charges based on the composite distance of the trip, i.e., the average of the over-the-rail and airline distance between on/off stations. The Metrorail fares are computed as follows:

**Peak Metrorail Fares:**

| <b>Trip Length</b>   | <b>General Fare Calculation</b>  |
|----------------------|--|
| 0- 3 composite miles | Base peak period fare  |
| 3- 6 composite miles | Base peak period fare + 1 <sup>st</sup> fare rate per mile, beyond 3 miles   |
| > 6 composite miles  | Base peak period fare + 1 <sup>st</sup> fare rate per mile, beyond 3 miles<br>+ 2 <sup>nd</sup> fare rate per mile, beyond 6 miles,<br>subject to a maximum fare |

**Off-Peak Metrorail Fares:**

| <b>Trip Length</b>   | <b>General Fare Calculation</b>   |
|----------------------|---|
| 0- 7 composite miles | Base off-peak period fare   |
| 7-10 composite miles | Base off-peak period fare + 1 <sup>st</sup> fare increment                                  |
| >10 composite miles  | Base off-peak period fare + 1 <sup>st</sup> fare increment + 2 <sup>nd</sup> fare increment |

The base fares, fare rates, and fare increments are expressed in the tariff.txt file as variables that are called in the TP+ scripts. The basic peak and off-peak period fare policies addressed in the modeling procedures are shown in Exhibit 3-25. Future transit improvements in Montgomery County have been reflected in the COG fare zone system. Fare zones 1 and 7 now represent the addition of the Corridor Cities Transit-way service, and Metrorail and bus fares in that corridor.

The bus fare matrix remains comprised of 21 fare zones and are defined in Exhibit 3-30. Regional bus fare zone maps showing primary and secondary fare zones are displayed in Exhibits 3-31 and 3-32. The bus fare matrix for Tariff #23-modified is shown in Exhibit 3-33.

**Exhibit 3-30: Bus Fare Zone/Service Areas for WMATA Tariff #23 (modified)**

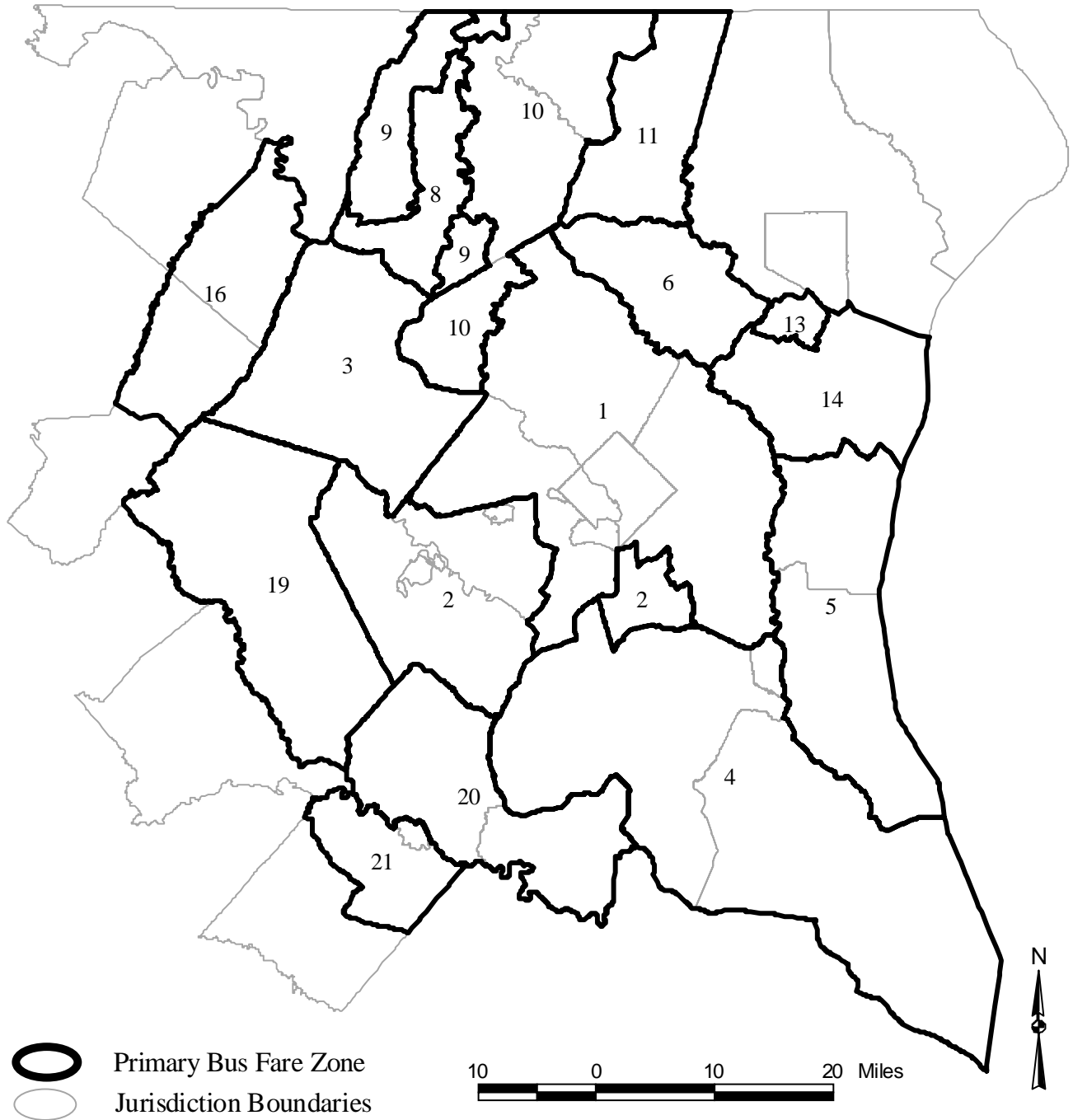
| <b><u>1<sup>st</sup> Fare Zone</u></b> | <b><u>Bus/Rail Service<sup>6</sup></u></b>   | <b><u>Approximate Service Area</u></b>                   |
|--|--|--|
| Fare Zone 1                            | WMATA Regular Service                        | DC, MTG, PG, ALEX, ARL, & FFX                            |
| Fare Zone 2                            | WMATA Express & Special Fare Service, & OMNI | Inner Maryland, Fairfax Suburbs, & Prince William County |
| Fare Zone 3                            | Loudoun Commuter Bus Service                 | Loudoun County   |
| Fare Zone 4                            | MTA Commuter Bus                             | Charles / St Mary's Counties                             |
| Fare Zone 5                            | MTA Commuter Bus                             | S. Anne Arundel / Calvert Counties                       |
| Fare Zone 6                            | MTA Commuter Bus                             | Howard County  |
| Fare Zone 7                            | Corridor Cities Transit-way                  | Montgomery County  |
| Fare Zone 8                            | Frederick Co Local Bus                       | Frederick County   |
| Fare Zone 9                            | MARC Rail / Brunswick Line                   | W. Frederick / N. Loudoun Counties                       |
| Fare Zone 10                           | MARC Rail / Brunswick Line                   | MTG. Co. (Ring 8) / E. Frederick & W. Carroll Co.        |
| Fare Zone 11                           | MARC Rail / Brunswick Line                   | MTG. Co. (Mid County) / W. Howard Co. & E. Carroll Co.   |
| Fare Zone 12                           | MARC Rail / Brunswick Line                   | Montgomery Co. (Inner County)                            |
| Fare Zone 13                           | MARC / Penn, Camden Lines                    | NE. Howard /NW Anne Arundel Co.                          |
| Fare Zone 14                           | MARC / Penn, Camden Lines                    | SE. Howard/Anne Arundel Co. & NE. Prince Georges Co.     |
| Fare Zone 15                           | MARC / Penn, Camden Lines                    | N. Central Prince Georges Co. & SW. Anne Arundel Co.     |
| Fare Zone 16                           | MARC/Brunswick Line                          | Jefferson W.VA. & Clarke Co. VA.                         |
| Fare Zone 17                           | VRE Rail Zones 1&2                           | Inside Beltway   |
| Fare Zone 18                           | VRE Rail Zones 3&4                           | Fairfax & Prince William Counties                        |
| Fare Zone 19                           | VRE Rail Zones 5&6                           | Prince William & Fauquier Counties                       |
| Fare Zone 20                           | VRE Rail Zones 7&8                           | Stafford & King George Counties                          |
| Fare Zone 21                           | VRE Rail Zone 9                              | City of Fredericksburg & Spotsylvania Co.                |

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<sup>6</sup>This rail service includes MARC and VRE. Metrorail is not included, but is modeled in the RPFARE1 process.

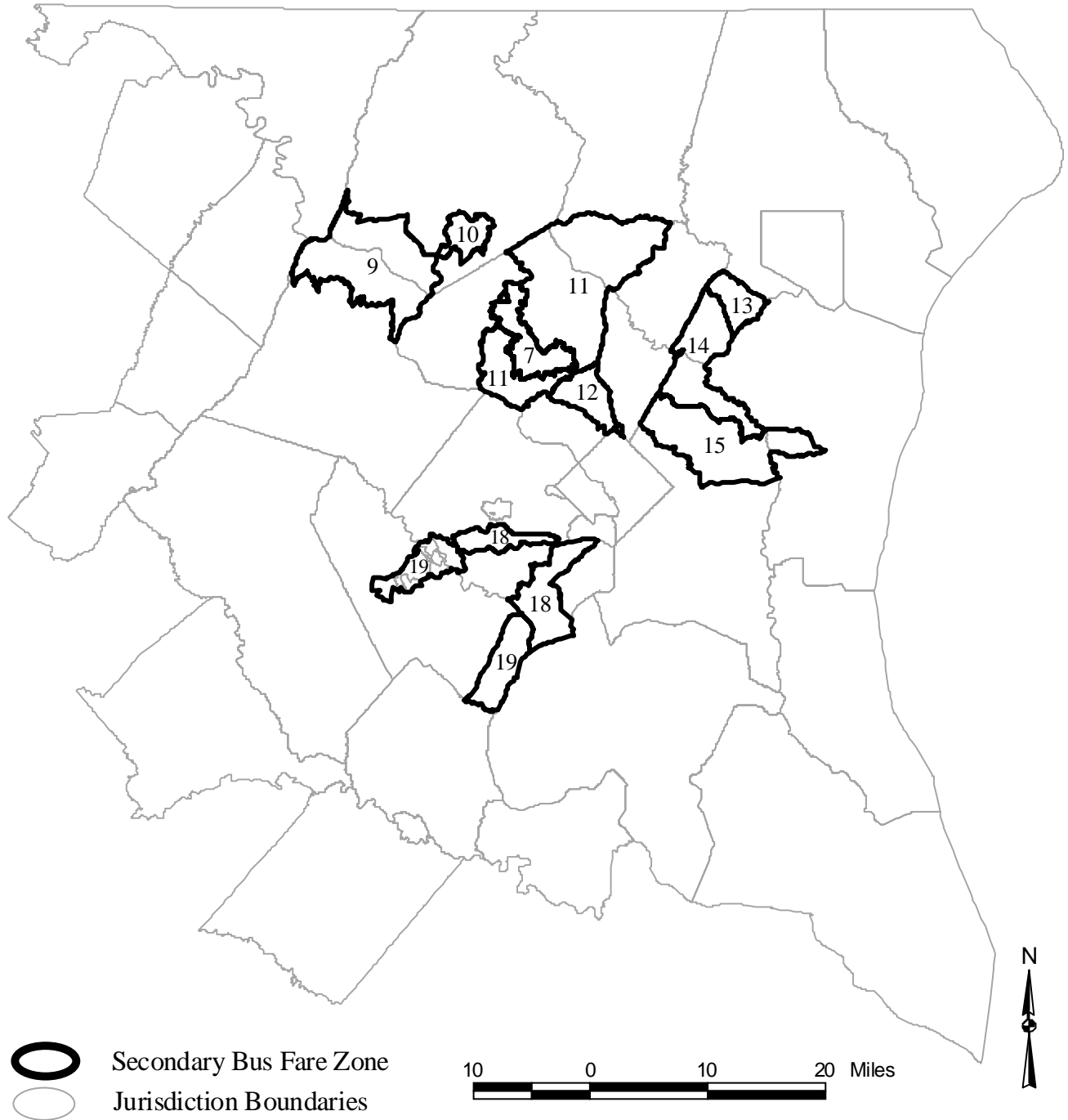


**Exhibit 3-31: Regional Primary Bus Fare Zone Map for Tariff #23**



Ref: 2030\_primary\_bfzn\_#23.wmf  
WMATA's Tariff Number 23 (effective June 2004)

**Exhibit 3-32: Regional Secondary Bus Fare Zone Map for Tariff #23**



Ref: 2030\_secondary\_bfzn\_#23.wmf  
WMATA's Tariff Number 23 (effective June 2004)

**Exhibit 3-33: Regional AM Peak and Off-Peak Bus Fare Matrix for 2008-2030  
Between MWCOG Fare Zones (Expressed in 2004 cents)**

|       | WMATA Regular Service | WMATA Express Ser. & Internal Metrobus Special Fare Service | Loudoun Comm. Bus | Charles & St. Mary's Comm. Bus (MTA) | Calvert and Southern AA Comm Bus (MTA) | Howard Comm. Bus (MTA) | Corridor Cities Transitway (Mont. Co) | Frederick Internal Bus | MARC Rail Brunswick (Frederick) | MARC Rail Brunswick (Mont. R8) | MARC Rail Brunswick (Mid. Mont) | MARC Rail Brunswick (Inner) | MARC Rail Penn/ Camden (Outer) | MARC Rail Penn/ Camden (Mid) | MARC Rail Penn/ Camden (Inner) | MARC Rail Brunswick (W.VA and Clark auto Connect) | VRE Zones 1 & 2 (Inside Beltway) | VRE Zones 3 & 4 (FFX and PW) | VRE Zones 5 & 6 (PW & FAUQ Auto Connect) | VRE Zones 7 & 8 (Staff. & KG Auto Connect) | VRE Zone 9 (Spots. & Fred'brg) |
|-------|-----------------------|---|-------------------|--------------------------------------|--|------------------------|---------------------------------------|------------------------|---------------------------------|--------------------------------|---------------------------------|-----------------------------|--------------------------------|------------------------------|--------------------------------|---|----------------------------------|------------------------------|--|--|--------------------------------|
| Zones | 1                     | 2   | 3                 | 4                                    | 5                                      | 6                      | 7                                     | 8                      | 9                               | 10                             | 11                              | 12                          | 13                             | 14                           | 15                             | 16  | 17                               | 18                           | 19                                       | 20   | 21                             |
| 1     | 135                   | 317   | 500               | 347                                  | 328                                    | 328                    | 414                                   | 529                    | 427                             | 341                            | 284                             | 227                         | 341                            | 284                          | 227                            | 511   | 281                              | 346                          | 411                                      | 476  | 524                            |
| 2     | 317                   | 118   | 817               | 664                                  | 645                                    | 645                    | 731                                   | 846                    | 744                             | 658                            | 601                             | 544                         | 658                            | 601                          | 544                            | 828   | 495                              | 317                          | 100                                      | 300  | 349                            |
| 3     | 500                   | 817   | 75                | 847                                  | 828                                    | 828                    | 914                                   | 1029                   | 927                             | 841                            | 784                             | 727                         | 841                            | 784                          | 727                            | 1011  | 781                              | 846                          | 911                                      | 976  | 1024                           |
| 4     | 347                   | 664   | 847               | 100                                  | 675                                    | 675                    | 761                                   | 876                    | 774                             | 688                            | 631                             | 574                         | 688                            | 631                          | 574                            | 858   | 628                              | 693                          | 758                                      | 823  | 871                            |
| 5     | 328                   | 645   | 828               | 675                                  | 357                                    | 656                    | 740                                   | 857                    | 755                             | 669                            | 612                             | 555                         | 669                            | 612                          | 555                            | 839   | 609                              | 674                          | 739                                      | 804  | 852                            |
| 6     | 328                   | 645   | 828               | 675                                  | 656                                    | 299                    | 742                                   | 857                    | 755                             | 669                            | 612                             | 555                         | 669                            | 612                          | 555                            | 839   | 609                              | 674                          | 739                                      | 804  | 852                            |
| 7     | 414                   | 731   | 914               | 761                                  | 740                                    | 742                    | 130                                   | 667                    | 557                             | 471                            | 130                             | 414                         | 755                            | 698                          | 641                            | 641   | 695                              | 760                          | 825                                      | 890  | 938                            |
| 8     | 529                   | 846   | 1029              | 876                                  | 857                                    | 857                    | 667                                   | 102                    | 102                             | 529                            | 639                             | 529                         | 870                            | 813                          | 756                            | 1040  | 810                              | 875                          | 940                                      | 1005                                       | 1053                           |
| 9     | 427                   | 744   | 927               | 774                                  | 755                                    | 755                    | 557                                   | 102                    | 400                             | 427                            | 427                             | 427                         | 768                            | 711                          | 654                            | 400   | 708                              | 773                          | 838                                      | 903  | 951                            |
| 10    | 341                   | 658   | 841               | 688                                  | 669                                    | 669                    | 471                                   | 529                    | 427                             | 341                            | 341                             | 341                         | 682                            | 625                          | 568                            | 341   | 622                              | 687                          | 752                                      | 817  | 865                            |
| 11    | 284                   | 601   | 784               | 631                                  | 612                                    | 612                    | 130                                   | 639                    | 427                             | 341                            | 284                             | 284                         | 625                            | 568                          | 511                            | 511   | 565                              | 630                          | 695                                      | 760  | 808                            |
| 12    | 227                   | 544   | 727               | 574                                  | 555                                    | 555                    | 414                                   | 529                    | 427                             | 341                            | 284                             | 227                         | 568                            | 511                          | 454                            | 511   | 508                              | 573                          | 638                                      | 703  | 751                            |
| 13    | 341                   | 658   | 841               | 688                                  | 669                                    | 669                    | 755                                   | 870                    | 768                             | 682                            | 625                             | 568                         | 341                            | 341                          | 341                            | 852   | 622                              | 687                          | 752                                      | 817  | 865                            |
| 14    | 284                   | 601   | 784               | 631                                  | 612                                    | 612                    | 698                                   | 813                    | 711                             | 625                            | 568                             | 511                         | 341                            | 284                          | 284                            | 795   | 565                              | 630                          | 695                                      | 760  | 808                            |
| 15    | 227                   | 544   | 727               | 574                                  | 555                                    | 555                    | 641                                   | 756                    | 654                             | 568                            | 511                             | 454                         | 341                            | 284                          | 227                            | 738   | 508                              | 573                          | 638                                      | 703  | 751                            |
| 16    | 511                   | 828   | 1011              | 858                                  | 839                                    | 839                    | 641                                   | 1040                   | 400                             | 341                            | 511                             | 511                         | 852                            | 795                          | 738                            | 400   | 732                              | 857                          | 922                                      | 987  | 1035                           |
| 17    | 281                   | 495   | 781               | 628                                  | 609                                    | 609                    | 695                                   | 810                    | 708                             | 622                            | 565                             | 508                         | 622                            | 565                          | 508                            | 732   | 281                              | 330                          | 395                                      | 459  | 508                            |
| 18    | 346                   | 317   | 846               | 693                                  | 674                                    | 674                    | 760                                   | 875                    | 773                             | 687                            | 630                             | 573                         | 687                            | 630                          | 573                            | 857   | 330                              | 158                          | 200                                      | 265  | 314                            |
| 19    | 411                   | 100   | 911               | 758                                  | 739                                    | 739                    | 825                                   | 940                    | 838                             | 752                            | 695                             | 638                         | 752                            | 695                          | 638                            | 922   | 395                              | 200                          | 152                                      | 200  | 249                            |
| 20    | 476                   | 300   | 976               | 823                                  | 804                                    | 804                    | 890                                   | 1005                   | 903                             | 817                            | 760                             | 703                         | 817                            | 760                          | 703                            | 987   | 459                              | 265                          | 200                                      | 152  | 184                            |
| 21    | 524                   | 349   | 1024              | 871                                  | 852                                    | 852                    | 938                                   | 1053                   | 951                             | 865                            | 808                             | 751                         | 865                            | 808                          | 751                            | 1035  | 508                              | 314                          | 249                                      | 184  | 152                            |

Ref: TAR23BFMTX.XLS

WMATA fares are based on Tariff #23 effective 6/27/04.  
Remaining transit provider fares are based on 2004 information.

### 3.5 Version 2.2 Model Network File Format Descriptions

This section presents file format descriptions used in the network and fare building process. Exhibits 3-34 through 3-43 detail land-use, highway and transit network, and fare input file formats. A summary of network files that were developed as inputs to the assessment of the 2007 CLRP and FY2008-2013 TIP is shown in Exhibit 3-44. Filenames are generically named for each year. Therefore, it is the subdirectory, rather than the filename itself, that establishes the year or alternative that a given file represents. Schematic flowcharts of the steps employed to develop the network files are presented in Exhibits 3-45 through 3-49. The user should reference Chapter 10.1 of the Version 2.2 model User's Guide for more detail on subdirectory and filename specifications required in the model application.

**Exhibit 3-34: File Format Description of the Land Use File (zone.asc)**

| Columns | Format | Field Description   |
|---------|--------|---|
| 1- 4    | I4     | TAZ (1-2191)  |
| 8- 15   | I8     | Households  |
| 16- 23  | I8     | Household Population  |
| 24- 31  | I8     | Grouped Quarters Population   |
| 32- 39  | I8     | Total Population  |
| 40- 47  | I8     | Total Employment  |
| 48- 55  | I8     | Industrial Employment   |
| 56- 63  | I8     | Retail Employment   |
| 64- 71  | I8     | Office Employment   |
| 72- 79  | I8     | Other Employment  |
| 80- 81  | I2     | Jurisdiction Code (0-23)<br><i>0/dc, 1/mtg, 2/pg, 3/alr/, 4/alx,5, ffx, 6/ldn, 7/ pw, 8/(unused), 9/ frd, 10/how, 11/aa, 12/chs, 13/(unused), 14/car, 15/cal, 16/stm, 17/ kg, 18/fbg, 19/stf, 20/spts, 21/fau, 22/clk, 23/jef</i> |
| 83- 92  | F10.4  | Gross Land Area (in sq. miles)  |
| 94- 95  | I2     | Ratio of zonal HH median income to regional median HH income in tenths (e.g., a value of <i>10</i> indicates a ratio of 1.0), based on the 1990 CTPP.   |
| 97- 98  | I2     | Airline distance from the TAZ centroid to the nearest external station in whole miles.  |

**Exhibit 3-35: File Format Description of the Node Coordinate File (node.asc)**

| Columns | Format | Field Description                   |
|---------|--------|-------------------------------------|
| 1-6     | I6     | Highway Node Number                 |
| 7-14    | I8     | X-Coordinate (NAD 83) in whole feet |
| 15-22   | I8     | Y-Coordinate (NAD 83) in whole feet |

**Exhibit 3-36: Base Highway Link File Format Description (link.asc)**

| <i>Columns</i> | <i>Format</i> | <i>Field Description</i>   |
|----------------|---------------|--|
| 1-5            | I5            | A node   |
| 6-10           | I5            | B node   |
| 13-17          | F5.2          | Link Distance (in whole miles with explicit decimal)   |
| 23-24          | I2            | Unused (place marker for Speed Class)*   |
| 26-27          | I2            | Unused (place marker for Capacity Class)*  |
| 30-33          | I4            | Daily Ground Count in thousands  |
| 35-36          | I2            | Daily Ground Count Quality Code  |
| 39-40          | I2            | Jurisdiction Code (0-23)<br><i>0/dc, 1/mtg, 2/pg, 3/alr/, 4/alx, 5, ffx, 6/ldn, 7/ pw, 8/(unused), 9/ frd, 10/how, 11/aa, 12/chs, 13/(unused), 14/car, 15/cal, 16/stm, 17/ kg, 18/fbg, 19/stf, 20/spts, 21/fau, 22/clk, 23/jef</i> |
| 51-52          | I2            | Screenline Code  |
| 54-55          | I2            | Link Facility Type Code (0-6)<br><i>0/centroids, 1/Freeways, 2/Major Art., 3/Minor Art, 4/ Collector, 5/ Expressway, 6/ Ramp (future use)</i>  |
| 61-64          | I4            | Toll Value in current year dollars   |
| 66-69          | I4            | Toll Group Code (1-9999)   |
| 81-82          | I2            | AM Peak No. of Lanes   |
| 84-85          | I2            | AM Peak Limit Code (0-9)   |
| 87-88          | I2            | PM Peak No. of Lanes   |
| 90-91          | I2            | PM Peak Limit Code (0-9)   |
| 93-94          | I2            | Off-Peak No. of Lanes  |
| 96-97          | I2            | Off-Peak Limit Code (0-9)  |
| 99-102         | I4            | Unused (place marker for TAZ)*   |
| 107-116        | A/N           | Project ID   |

*Notes:*

- *The mode choice model requires that all costs be in 1994 dollars.*
- *Limit Codes are 0, 1 = General Use, 2 = HOV2, 3+ only, 3 = HOV 3+ Only, 4 = Truck Prohibited, 5 = Non-Airport Vehicles Prohibited, 6-8 = (unused), 9 = 'Transit Only' link (links used to more accurately depict coded transit routes, but are below the grain of the zone system; these links are not included in the highway assignment process).*
- \* *The speed class, capacity class, and TAZ are added to the highway network during the highway network building phase, so they are not used in the ASCII input file link.asc.*

**Exhibit 3-37: Rail Station/PNR Lot File Format Description (sta.tpp.bse)**

| <i>Columns</i> | <i>Format</i> | <i>Field Description</i>   |
|----------------|---------------|--|
| 1-5            | I5            | Sequence Number  |
| 10             | A1            | Mode Code (M=Metrorail, C=Commuter rail, B=Bus, L=Light rail, N= BRT/street car) |
| 15             | A1            | Parking Available? (Y/N)   |
| 18             | A1            | Station Active? (Y/N)  |
| 21-45          | A25           | Station Name/PNR lot name  |
| 46-50          | I5            | Network Centroid (2251-2500)   |
| 51-55          | I5            | TAZ location of Station/PNR lot (1-2191)   |
| 56-60          | I5            | Rail Station Node (7301-7399, 7600-7733)   |
| 61-65          | I5            | Parking lot node   |
| 66-70          | I5            | 1 <sup>st</sup> Bus Node   |
| 71-75          | I5            | 2 <sup>nd</sup> Bus Node   |
| 76-80          | I5            | 3rd Bus Node   |
| 81-85          | I5            | 4th Bus Node   |
| 91-100         | I10           | X Coordinate of Station / PNR lot (NAD83-based in ft.)                           |
| 101-110        | I10           | Y Coordinate of Station / PNR lot (NAD83-based in ft.)                           |
| 111-140        |               | (Unused)   |
| 141-145        | I5            | Year of Station/PNR lot Opening (unused)   |

**Exhibit 3-38: Rail Link File Format Description (rail\_lnk.bse)**

| <i>Columns</i> | <i>Format</i> | <i>Field Description</i>                   |
|----------------|---------------|--|
| 1-5            | I5            | A Node                                     |
| 6-10           | I5            | B Node                                     |
| 15-19          | I5            | Distance in 1/100 <sup>th</sup> s of miles |
| 21-25          | F5.2          | Speed (mph)                                |
| 37-37          | I1            | Rail Mode Number (3-5)                     |

**Exhibit 3-39: “Raw” GIS Based Transit Walk Area File Format Description (GISWKA?.ASC)**

| <i>Columns</i> | <i>Format</i> | <i>Field Description</i>                                      |
|----------------|---------------|---|
| 4-8            | I5            | TAZ Number  |
| 9-17           | I9            | Total Land Area   |
| 24-30          | I7            | ‘short’ walk area to rail (Metrorail, commuter rail)          |
| 36-42          | I7            | ‘long’ walk area to rail (Metrorail, commuter rail)           |
| 49-55          | I7            | ‘short’ walk area to non-rail transit                         |
| 61-67          | I7            | ‘long’ walk area to non-rail transit                          |
| 73-81          | I9            | Non-walking area to ANY transit                               |
| 85-91          | I7            | Average ‘Short’ Walk Distance to Metrorail (in miles)         |
| 95-101         | I7            | Average ‘Long’ Walk Distance to Metrorail (in miles)          |
| 106-112        | I7            | Average ‘Short’ Walk Distance to Commuter Rail (in miles)     |
| 116-122        | I7            | Average ‘Long’ Walk Distance to Commuter Rail (in miles)      |
| 127-133        | I7            | Average ‘Short’ Walk Distance to Bus (in miles)               |
| 137-143        | I7            | Average ‘Long’ Walk Distance to Bus (in miles)                |
| 149-155        | I7            | Average ‘Short’ Walk Distance to ANY Transit (in miles)       |
| 161-167        | I7            | Average ‘Long’ Walk Distance to ANY Transit (in miles)        |
| 170-174        | I5            | Nearest Rail Station (Metrorail or Commuter Rail) w/in 1.0 mi |
| 176-180        | I5            | Nearest Bus Stop Node w/in 1.0 mi                             |

*Note: area measurements are in square miles and do not include major bodies of water; ‘short’ references below are defined as within 1/3 mile; ‘long’ walk areas are those beyond 1/3 of a mile and within 1.0 mile*

**Exhibit 3-40: GIS-Walk Link File Format Description (GISWKL?.ASC)**

| <b>Columns</b> | <b>Format</b> | <b>Field Description</b>                         |
|----------------|---------------|--|
| 1-5            | I5            | TAZ Number                                       |
| 6-10           | I5            | Transit Stop nodes within 1.0 mile               |
| 11-15          | F5.2          | Distance from TAZ centroid to stop node in miles |

**Exhibit 3-41: Station Coordinate File Format Description (MFARE1.A1)**

| <i>Columns</i> | <i>Format</i> | <i>Field Description</i> |
|----------------|---------------|--------------------------|
| 9-13           | I5            | Station Number (1-150)   |
| 19-26          | I8            | Station X Coordinate     |
| 32-39          | I8            | Station Y Coordinate     |

**Exhibit 3-42: Bus Fare Matrix File Format Description (BUSFAR??).ASC)**

| <i>Columns are Space-delimited</i> | <i>Field Description</i>                               |
|------------------------------------|--|
|                                    | Origin Bus Zone No. (1-21)                             |
|                                    | Bus Fare value From Origin Zone to Destination zone 1  |
|                                    | Bus Fare value From Origin Zone to Destination zone 2  |
|                                    | Bus Fare value From Origin Zone to Destination zone 3  |
|                                    | ...  |
|                                    | Bus Fare value From Origin Zone to Destination zone 21 |
|                                    |  |

**Exhibit 3-43: TAZ / Bus Fare Zone Equivalency File Format Description (FARE\_A2.ASC)**

| <i>Columns are Space-delimited</i> | <i>Field Description</i>                                      |
|------------------------------------|---|
|                                    |   |
|                                    | TAZ (1-2191)  |
|                                    | Bus Fare Zone 1 associated with TAZ                           |
|                                    | Bus Fare Zone 2 associated with TAZ                           |
|                                    | TAZ Origin Walk Pct to Metrorail in 10ths of pct              |
|                                    | TAZ Destination Walk Pct to Metrorail in 10ths of pct         |
|                                    | Bus Fare Zone 1 associated with Metrorail station (TAZ 1-150) |
|                                    | Bus Fare Zone 2 associated with Metrorail station (TAZ 1-150) |
|                                    | Jur. Code (0/DC, 1/MD, 2/VA-Area1, 3/VA-Area2)                |
|                                    | Origin-end Bus fare override value (default=0)                |
|                                    | Destination-end Bus fare override value (default=0)           |
|                                    |   |
|                                    |   |
|                                    |   |

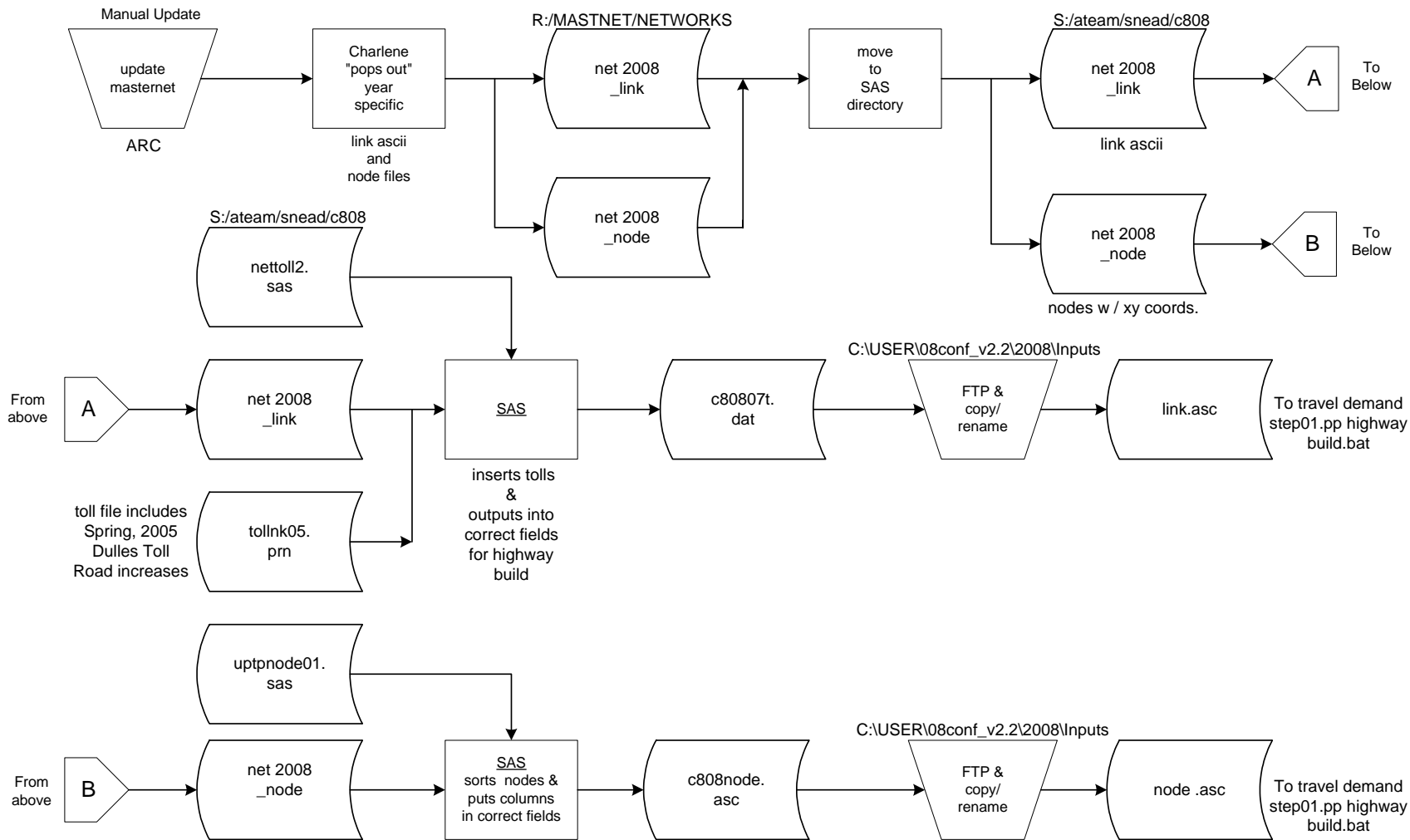


**Exhibit 3-44: Summary of Version 2.2 Model/TP+ Transportation Network Filenames**

| <i>Transportation Network / Inputs</i> |                      |
|--|----------------------|
| <b>SubDirectory: CGV2.2</b>            | <b>Scenario Year</b> |
| Zone Net                               | Link.ASC             |
| Zone Xys                               | Node.ASC             |
| <b>Transit Networks</b>                |                      |
| <b>AM Peak Line Files (Mode)</b>       |                      |
| 1                                      | mode1am.tp           |
| 2                                      | mode2am.tp           |
| 3                                      | mode3am.tp           |
| 4                                      | mode4am.tp           |
| 5                                      | mode5am.tp           |
| 6                                      | mode6am.tp           |
| 7                                      | mode7am.tp           |
| 8                                      | mode8am.tp           |
| 9                                      | mode9am.tp           |
| <b>Off Peak Line Files (Mode)</b>      |                      |
| 1                                      | mode1op.tp           |
| 2                                      | mode2op.tp           |
| 3                                      | mode3op.tp           |
| 4                                      | mode4op.tp           |
| 5                                      | mode5op.tp           |
| 6                                      | mode6op.tp           |
| 7                                      | mode7op.tp           |
| 8                                      | mode8op.tp           |
| 9                                      | mode9op.tp           |
| Station File                           | STA_TPP.BSE          |
| Rail Link File                         | RAIL_LNK.BSE         |
| <b>FARES</b>                           |                      |
| <b>Bus Fares (MFARE2S)</b>             |                      |
| TAZ/Bus Fare Equivalency               | FARE_A2.ASC.         |
| Bus Fare Matrix - AM                   | BUSFARAM.ASC         |
| Bus Fare Matrix - OP                   | BUSFAROP.ASC         |

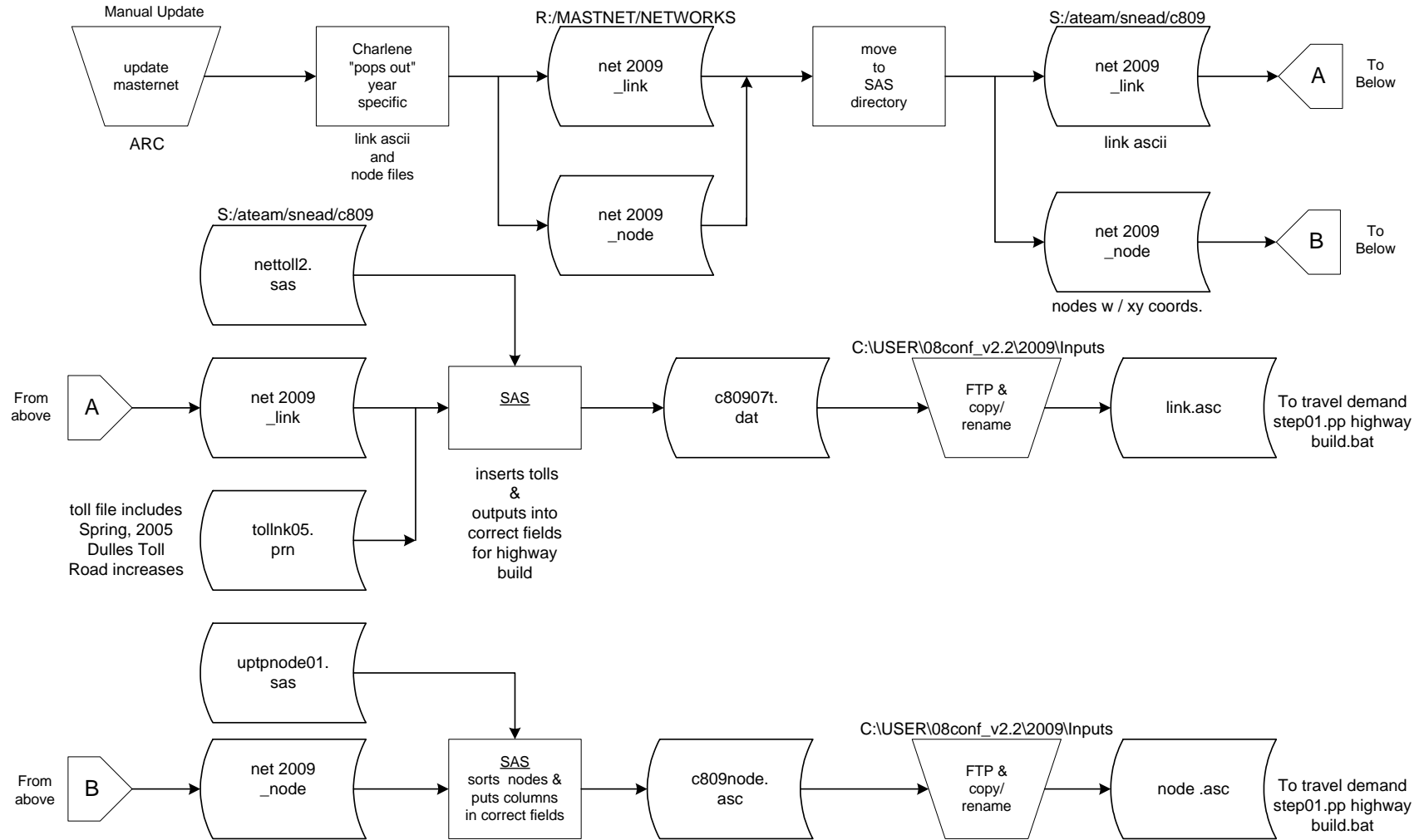
Ref: EXH3-44 V2.2.xls

**Exhibit 3-45: 2007 CLRP / FY2008-2013 TIP AQC Network Development for 2008**



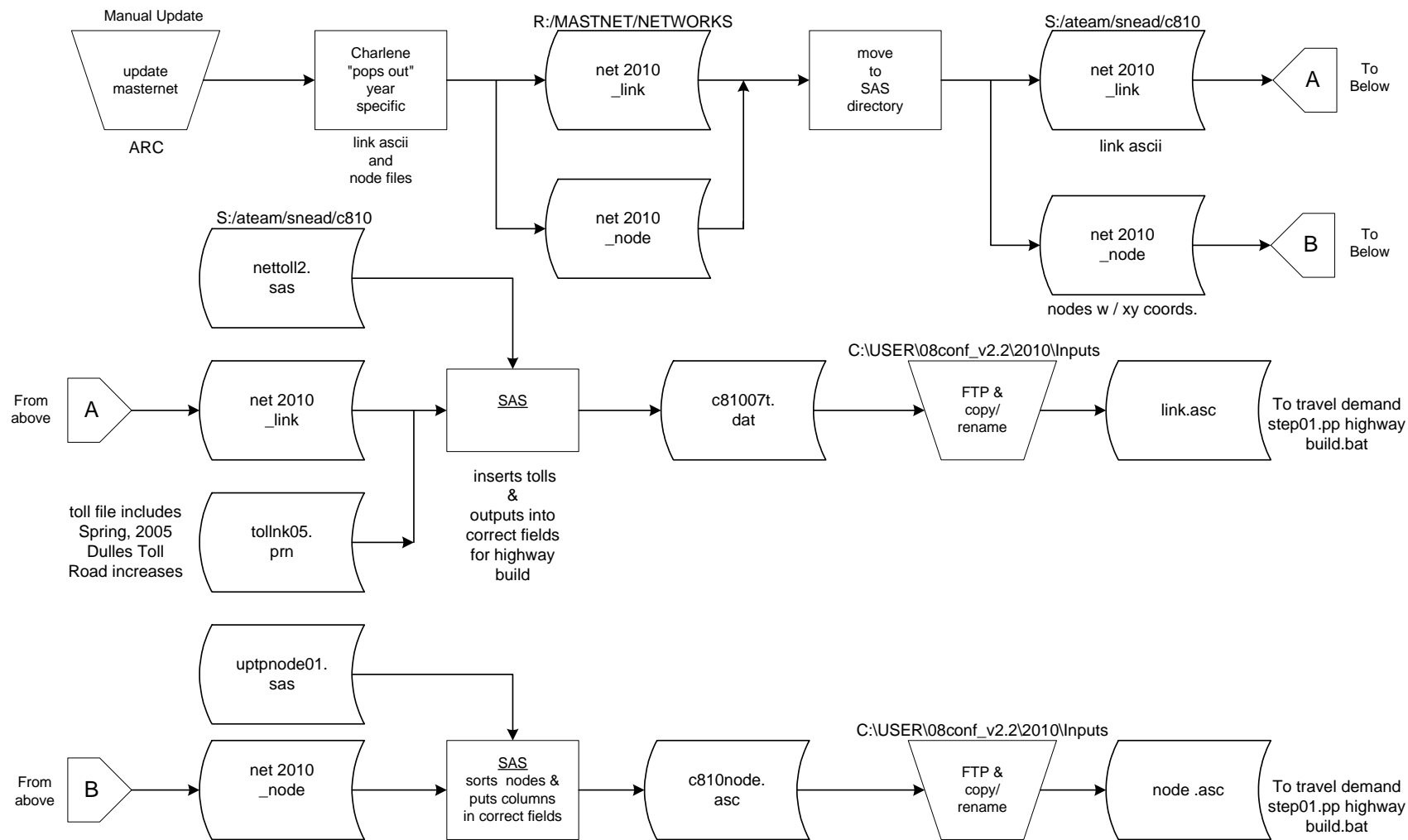
Ref: C808inputs.vsd (C8\_2008.wmf)

Exhibit 3-46: 2007 CLRP / FY2008-2013 TIP AQC Network Development for 2009



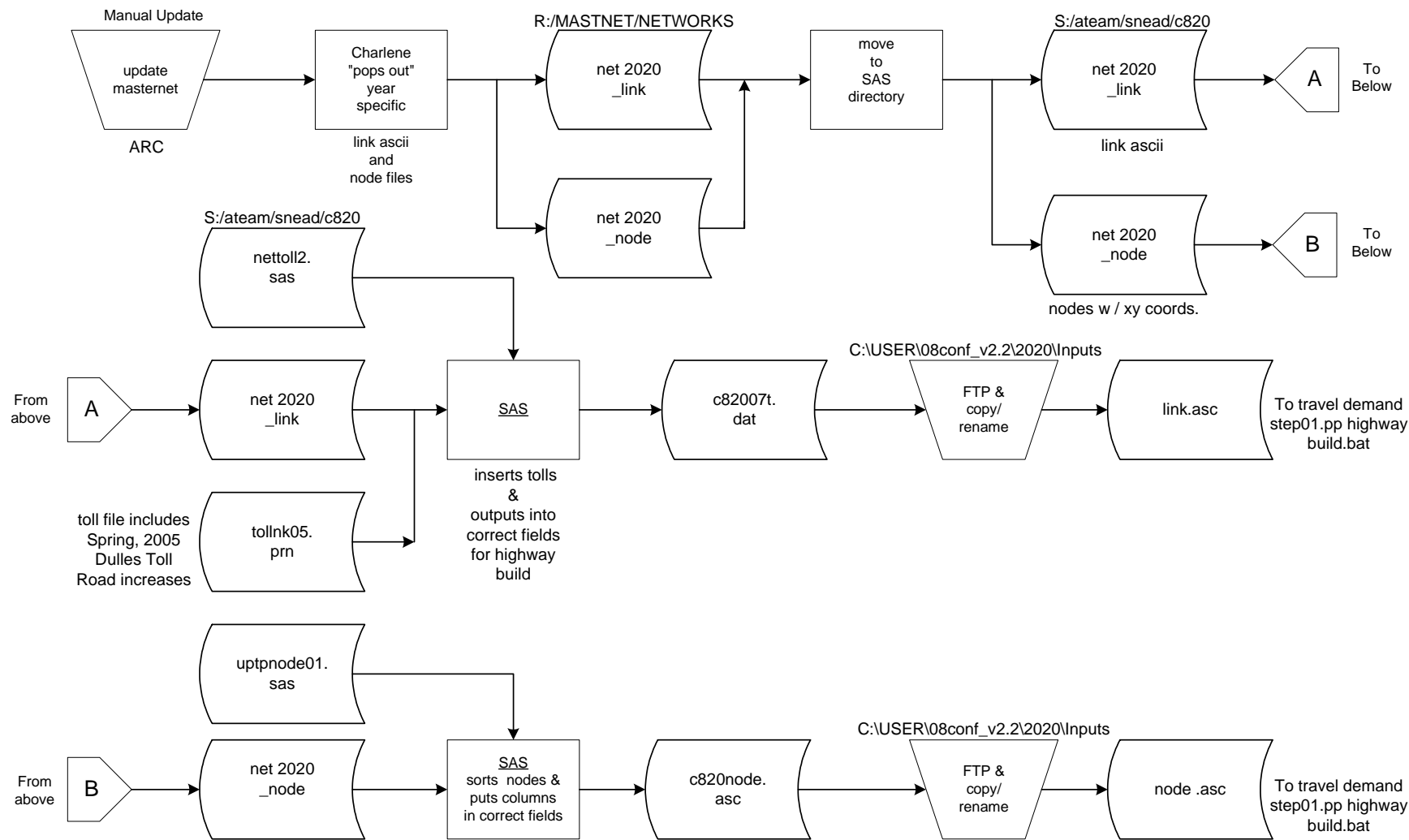
Ref: C809inputs.vsd (C8\_2009.wmf)

**Exhibit 3-47: 2007 CLRP / FY2008-2013 TIP AQC Network Development for 2010**



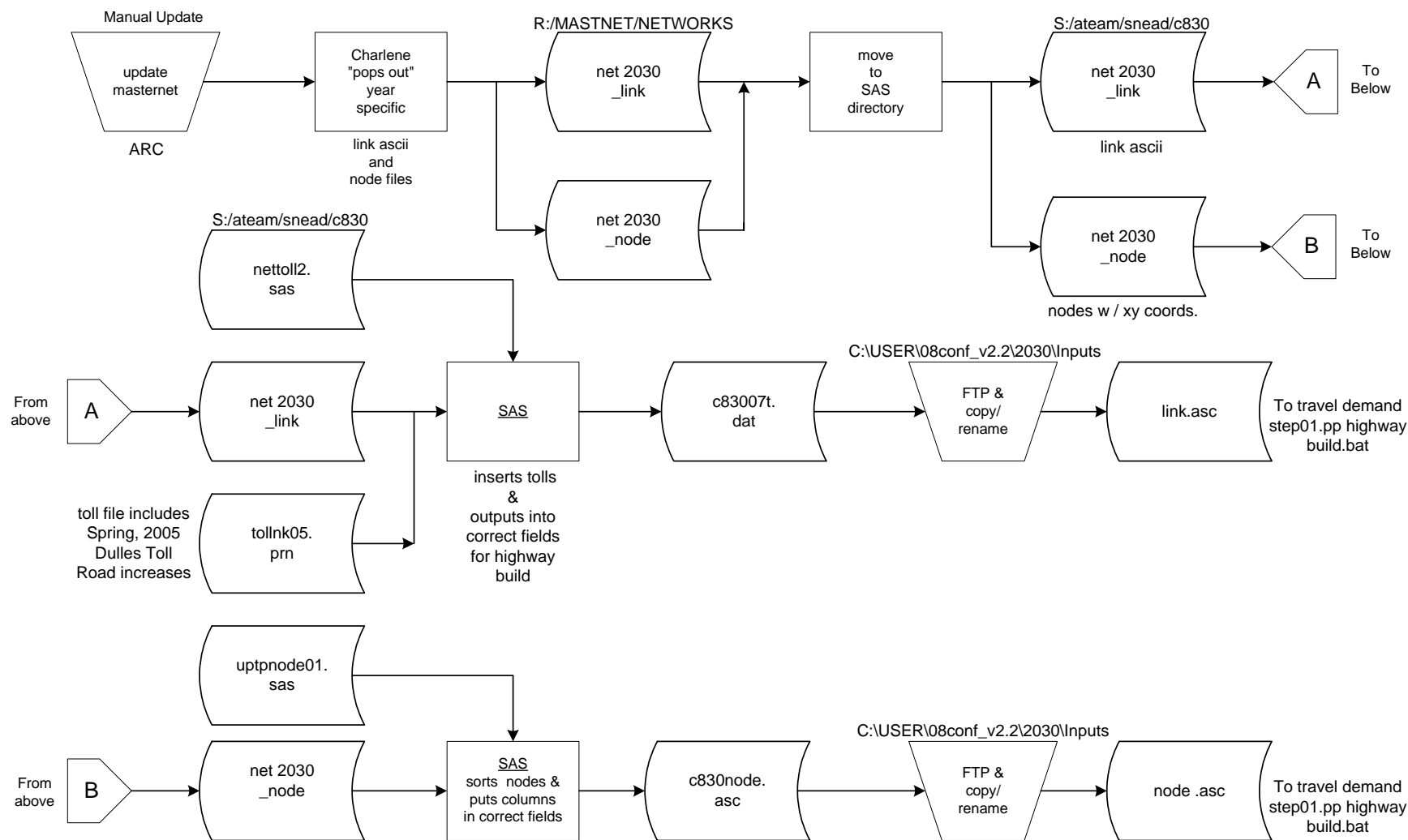
Ref: C810inputs.vsd (C8\_2010.wmf)

Exhibit 3-48: 2007 CLRP / FY2008-2013 TIP AQC Network Development for 2020



Ref: C820inputs.vsd (C8\_2020.wmf)

**Exhibit 3-49: 2007 CLRP / FY2008-2013 TIP AQC Network Development for 2030**



Ref: C830inputs.vsd (C8\_2030.wmf)

## **Chapter 4 Looking Ahead**

As the MPO for the Washington, D.C. metropolitan area, the Transportation Planning Board (TPB) is responsible for carrying out federally mandated long-range transportation and air quality planning activities using network-based transportation models. The models are used to evaluate a range of alternative future scenarios, some of which focus on transportation system changes: an added highway facility or a rail extension, for example. The network development process involves a team of individuals within the transportation department that handle a variety of activities. These include collecting and analyzing network updates and modifications from the local transportation agencies, implementing network edits to the transportation networks and the geographic highway database, verifying the edits, and preparing the final network inputs to the travel demand model.

The TPB has made steady progress in adapting GIS technology to manage and facilitate these tasks with respect to the highway network development. The existing transit and highway networks used in the regional travel model are built over a 2,000-Transportation Analysis Zone (TAZ) area system which covers 6,800 square miles in total area. It is anticipated that the TAZ system will be revisited in the next two to three years. The extent of the modeled area is not expected to change, but the number of TAZs in the revised area system will likely more than double. In light of this upcoming event, TPB identified two areas for improved efficiency in developing transportation networks: 1) streamlining the transfer of transit information from transit providers to COG/TPB and 2) improving GIS-based applications used to manage and develop transportation networks. This chapter describes these initiatives.

### **4.1 Transfer of Bus Schedule Data between Transit Providers and TPB Staff**

Staff has an initiative underway to streamline the transfer of transit data and to obtain transit information in computer readable formats. Several presentations featuring this topic have been made to the TPB Regional Bus Subcommittee. The mission of this subcommittee is to provide a permanent process for the coordination of bus planning throughout the Washington region, and for incorporating regional bus plans into the Constrained Long Range Plan (CLRP) and Transportation Improvement Program (TIP).

Streamlining the transfer of information from transit providers to COG/TPB revolves around the following topics,

- What GIS systems are used by the transit providers?
- What other software is used to manage bus routes and schedule information (e.g. Trapeze, [www.trapezegroup.co.uk](http://www.trapezegroup.co.uk))?

And are there or could we come up with standards for transmitting schedule data and spatial data about transit routes?

As discussed previously in chapter 3, the development of bus and rail inputs for CLRP networks begins with the compilation of local and commuter bus and rail service data for all regional transit providers in the Metropolitan Washington region. WMATA's and Ride On's schedule information is provided in computer-readable formats and the automated processing of their data has ensured consistency of transit networks across network years. Transit information for the twenty remaining providers is downloaded from the internet and manually processed. It would be more efficient to obtain transit data as computer-readable comma delimited files from all transit providers.

We envision the inclusion of transit data processing and subsequent integration of schedule data with rail and bus route files that are required for TPB's modeling software, as a module in the new transit application being developed by Daniel Consultants, Inc. (DCI). In order to accomplish these tasks, we desire a common computer readable format for transit schedule data.

## **4.2 GIS-Related Activities**

The TPB currently operates a conventional four-step travel model using Cube/TP+ software (Version 4.1.1) which is a product of Citilabs, Inc. The most recent TPB travel model is known as Version 2.2. TPB also uses Environmental Research Systems Institute (ESRI) products to serve various GIS needs. These include ArcView 3.2 (for select legacy applications) and the ArcGIS 9.x suite of products, at the ArcInfo functionality level for both desktop and workstation platforms. It should be noted that Citilabs announced the release of Version 5 in April 2008. That version is expected to have enhanced GIS capabilities and tighter integration with ESRI's ArcGIS technology.

The desire to better utilize GIS technology for managing transit and highway networks, both spatially and temporally, is shared among many MPOs across the U.S. This desire is especially pressing for the TPB given that 1) the turn-around time of the network development process is currently viewed as too long, given the inefficiencies of existing procedures, 2) the network alternatives being studied are increasing in scope and in complexity, and 3) the spatial analysis needs of the more advanced modeling techniques being proposed are expected to be especially demanding of geographic precision (e.g., traffic microsimulation). It is anticipated that more effective use of GIS technology will address these concerns.

TPB has made in-house progress in adapting GIS technology to better meet the needs of network development. Maintenance and editing procedures have been developed using the ArcInfo Workstation platform, a coverage-based data model, and Arc Macro Language (AML) programming. The collection of datasets, programs, and menus is referred to by technical staff as the Master Any-Year Network (MAN) database application. In simplest terms, the application manages highway network information over time. The MAN database application has been used in recent years to edit and track highway network features (links and nodes) and to aid in the development of spatial data required by the mode choice model.



The MAN application has enabled highway networks to be developed with greater consistency, although shortfalls exist with respect to some network development needs. Transit-related attributes (transit routes, stop nodes, PNR lots, and rail stations) are not considered in the database, and so, transit networks are developed outside of the GIS environment. There are also limitations on the number of concurrent users that can access the application.

Shortcomings notwithstanding, it was recognized that ESRI's development focus evolved from their (legacy) coverage-based data model (the foundation of ArcInfo Workstation) toward the geodatabase data model first introduced with the release of the ArcGIS suite of products. While the coverage data model (and therefore ArcInfo Workstation) is still supported in ArcGIS, it is no longer developed and extended in terms of functionality. ESRI now develops all new geospatial tools within the ArcGIS (and its underlying geodatabase model) environment. Given this shift, it was evident to the TPB that further development of the existing ArcInfo-based application should be abandoned, and a new application based on the geodatabase data model should be pursued.

Several internal staff meetings were convened during FY-2007 to deliberate on how GIS functions could be improved. As a result, a project was formulated to focus not only on improving software applications, but also, on how 'business is being done' in the network development area. The project began in the fall of 2007 and involved the support of a consultant who was conversant with travel modeling needs and the development of GIS applications.

Daniel Consultants, Inc. (DCI) was selected during the summer of 2007<sup>1</sup> and began the first phase of a two-phase effort to improve the TPB's existing GIS technology and practices for improving network database development procedures. The first phase essentially involved: 1) evaluating existing network development procedures, 2) identifying user needs, 3) developing a list of functional requirements, and 4) developing a multi-year highway geodatabase and an ArcGIS-based custom tool which met many of the formulated requirements. Phase 2 will occur during FY-2009 and will include tasks that further improve the software application developed in Phase 1, including: 1) the refinement of the ArcGIS application tool developed in Phase 1 based on the TPB's testing and evaluation of the software, 2) the incorporation of transit network elements into the multi-year geodatabase and the enhancement of the custom ArcGIS toolbar to include transit editing, and 3) the preparation of documentation and training materials.

The schedule for Phase 2 activities is envisioned to occur over six months, from August 2008 to January 2009. The updated GIS procedures will be critical in adapting the highway and transit networks to the expanded TAZ system.

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<sup>1</sup> RFP #18-07 was released on June 8, 2007 (entitled, "Improving GIS Based Applications and Protocols Used to Develop and Manage Transportation Networks")

*FY-2008 Network Documentation: Highway and Transit Network Development*

**Appendix A: Highway / HOV Inputs for the 2007 CLRP and FY  
2008-2013 TIP Air Quality Conformity Networks**

*FY-2008 Network Documentation: Highway and Transit Network Development*

# Appendix-A

12/05/07

## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency                      | Project ID | Improv.           | Environ. Review | Facility  | From                                  | To                                 | Facility |    | Lanes     |         | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|-----------------------------|------------|-------------------|-----------------|---|---------------------------------------|------------------------------------|----------|----|-----------|---------|-------------------------------|------------------------|---------|
|                             |            |                   |                 |   |                                       |                                    | from     | to | from      | to      |                               |                        |         |
| <b>District of Columbia</b> |            |                   |                 |   |                                       |                                    |          |    |           |         |                               |                        |         |
| DDOT                        |            |                   |                 | New York Avenue   | Bladensburg Road                      |                                    |          |    |           |         |                               | beyond 2010            | Yes     |
| DDOT                        |            |                   |                 | New York Avenue   | Florida Avenue                        |                                    |          |    |           |         |                               | beyond 2010            | Yes     |
| DDOT                        |            | Study             |                 | South Capitol Street                                    | Independence Avenue                   | Frederick Douglass Memorial Bridge |          |    |           |         |                               | not coded              | Yes     |
| DDOT                        |            |                   |                 | Southeast/Southwest Frwy Reversible Lanes               | 14th Street Bridges                   | Pennsylvania Ave. SE               |          |    |           |         |                               |                        | Yes     |
| DDOT                        | nrs        | Study             |                 | Southern Avenue   | Naylor Road                           | Erie Street                        |          |    |           |         |                               | not coded              | Yes     |
| DDOT                        |            | Construct         |                 | Foxhall Road, N.W.                                      | W Place                               | Calvert Street                     |          |    |           |         |                               | 2003                   | Yes     |
| DDOT                        |            | Construct         |                 | Klinge Road Reconstruction                              | Porter Street                         | Woodley Road                       |          |    |           |         |                               | 2007                   | Yes     |
| DDOT                        |            | Construct         |                 | Minnesota Ave. NE ext.                                  | Sheriff Rd                            | Meade St. N.E.                     |          |    |           |         |                               | 2009                   | Yes     |
| DDOT                        |            | Study             |                 | Whitehurst Fwy/Roosevelt Bridge                         | Porter Street                         | Woodley Road                       |          |    |           |         |                               | not coded              | Yes     |
| DDOT                        | DP9A       | Widen / Realign   |                 | South Capitol St. Corridor: Frederick Douglass Bridge   |                                       |                                    | 2        | 2  | 5         | 6       |                               | 2015                   |         |
| DDOT                        | DP9B       | Widen             |                 | South Capitol St. Corridor: S. Capitol St.              | O St.                                 | S. Capitol St. Bridge              | 2        | 2  | 5         | 6       |                               | 2015                   |         |
| DDOT                        | DP9C       | Construct         |                 | South Capitol St. Corridor: S. Capitol St. intersection | at Potomac Ave.                       |                                    |          |    |           |         |                               | 2015                   |         |
| DDOT                        | DP9D       | Construct         |                 | South Capitol St. Corridor: Suitland Parkway Intch.     | at MLK Jr. Blvd to complete movements |                                    |          |    |           |         |                               | 2015                   |         |
| DDOT                        | DI7A       | reconstruct/widen |                 | 11th St. Bridges (2 spans)                              |                                       |                                    |          |    | 8 freeway | 4 local |                               | 2011                   |         |

# Appendix-A

## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

| Agency              | Project ID      | Improv.     | Environ. Review | Facility  | From  | To                    | Facility |    | Lanes  |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|---------------------|-----------------|-------------|-----------------|---|---|-----------------------|----------|----|--------|-----|-------------------------------|------------------------|---------|
|                     |                 |             |                 |   |   |                       | from     | to | from   | to  |                               |                        |         |
| DDOT                | DI7A            | Construct   |                 | 11th St. Bridges (2 spans)                              | ramp movements to/from the northbound Anacostia Freeway for each span |                       |          |    |        |     |                               | 2011                   |         |
| DDOT                |                 | Study       |                 | I-295 Interchange                                       | at Malcolm X Blvd   |                       |          |    |        |     |                               | not coded              |         |
| <b>Maryland</b>     |                 |             |                 |   |   |                       |          |    |        |     |                               |                        |         |
| <b>MDOT Freeway</b> |                 |             |                 |   |   |                       |          |    |        |     |                               |                        |         |
| MDSHA               | MI2g            | Construct   | Approved        | I-270   | Interchange at Watkins Mill Road Extended                             |                       | 1        | 1  | 8      | 8+2 | No                            | 2020                   | Yes     |
| MDSHA               | MI2SHOV<br>MI2S | Construct   | Pending         | I-270/US 15 Corridor                                    | Shady Grove Metro   | I-70                  | 1        | 1  | varies |     | No                            | 2020                   | Yes     |
| MDSHA               |                 | Reconstruct | Pending         | I-270   | Interchange at MD 121   |                       | 1        | 1  | 1      | 2   | No                            | 2010                   | Yes     |
| MDSHA               | MI4             | Widen       | Approved        | I-70  | Mount Phillip Road  | MD 144FA              | 1        | 1  | 4      | 6   | No                            | 2010                   | Yes     |
| MDSHA               | MI1f            | Construct   | Pending         | I-95  | Contee Road Relocated w/ CD Roads                                     |                       | 1        | 1  | 8      | 8+4 | No                            | 2020                   | Yes     |
| MDSHA               | MI1k            | Construct   | Approved        | I-95/I-495 (Capital Beltway)                            | Branch Avenue Metro Access (Phases I & II)                            |                       | 1        | 1  | 8      | 8   | Yes                           | 2009                   | Yes     |
| MDSHA               | MI1p            | Construct   | approved        | I-95/I-495 (Capital Beltway)                            | Interchange at Greenbelt Metro  |                       | 1        | 1  | 8      | 8+2 | No                            | 2010                   | Yes     |
| MDSHA               | VA              | Widen       | Approved        | I-95/I-495 Woodrow Wilson Bridge (see Virginia listing) | MD 210 Interchange  | Virginia Line         | 1        | 1  | 6      | 12  | Yes                           | 2008                   | Yes     |
| MDSHA               | MI1m            | Construct   | Approved        | I-95/I-495/Arena Drive Interchange                      | MD 214  | MD 202                | 1        | 1  | 8      | 8+2 | Yes                           | 2009                   | Yes     |
| MDSHA               | MI1a            | Study       | Pending         | I-95/I-495 (Capital Beltway)                            | American Legion Bridge  | Woodrow Wilson Bridge | 1        | 1  | 6      | 6+4 | No                            | not coded              | Yes     |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP

# Appendix-A

## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

| Agency              | Project ID | Improv.     | Environ. Review | Facility                           | From  | To  | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|---------------------|------------|-------------|-----------------|------------------------------------|---|---|----------|----|-------|-----|-------------------------------|------------------------|---------|
|                     |            |             |                 |                                    |   |   | from     | to | from  | to  |                               |                        |         |
| MDSHA               | MP12       | Construct   | Approved        | Intercounty Connector              | I-270                                       | I-95 / US 1                                 | 0        | 1  | 0     | 6   | Yes                           | 2012                   | Yes     |
| <b>MDOT Primary</b> |            |             |                 |                                    |   |   |          |    |       |     |                               |                        |         |
| MDSHA               | MP10a      | Reconstruct | Approved        | US 1 (Baltimore Avenue)            | College Avenue                              | Cherry Hill Road                            | 2        | 2  | 4     | 4   | No                            | 2020                   | Yes     |
| MDSHA               | MP10b      | Widen       | Approved        | US 1, Baltimore Avenue             | Cherry Hill Road                            | I-95/I-495                                  | 2        | 2  | 4     | 6   | No                            | 2010                   | Yes     |
| MDSHA               | MP9b       | Construct   | Pending         | MD 2/4 at Lusby Southern Conn. Rd. | MD 765                                      | MD 2/4 at Lusby                             | 0        | 2  | 0     | 3   | No                            | 2010                   | No      |
| MDSHA               | MP9c       | Construct   | Approved        | MD 2/4                             | MD 231 Intersection Improvs.                |   | 2        | 2  | 4     | 6+2 | No                            | 2010                   | No      |
| MDSHA               | MP2c       | Construct   | pending         | MD 3 (Robert Crain Highway)        | US 50                                       | Anne Arundel County Line                    | 2        | 2  | 4     | 6   | No                            | 2020                   | Yes     |
| MDSHA               |            | Construct   | Approved        | MD 4 (Pennsylvania Avenue)         | Interchange at Westphalia Rd                |   | 2        | 5  | 4     | 6   | No                            | 2010                   | Yes     |
| MDSA                |            | Construct   | Approved        | MD 4 (Pennsylvania Avenue)         | Interchange at Suitland Pkwy                |   | 2        | 5  | 4     | 6   | No                            | 2011                   | Yes     |
| MDSHA               | MP3a       | Upgrade/W   | Approved        | MD 4                               | MD 223                                      | I-95/I-495                                  | 2        | 5  | 4     | 6   | No                            | 2020                   | No      |
| MDSHA               |            | Construct   | Approved        | MD 5 (Branch Avenue)               | Interchange at Earnshaw/Burch Hill Roads    |   | 2        | 5  | 4     | 6   | No                            | 2010                   | No      |
| MDSHA               | MP4f       | Upgrade/W   | Approved        | MD 5 (Branch Avenue)               | US 301 at T.B.                              | North of the Capital Beltway                | 2        | 5  | 4     | 6   | No                            | 2030                   | Yes     |
| MDSHA               |            | Construct   | Approved        | MD 5 (Branch Avenue)               | Interchange at MD 373/Brandywine Road Rel.  |   | 2        | 5  | 4     | 6   | No                            | 2010                   | No      |
| MDSHA               |            | Construct   | Approved        | MD 5 (Branch Avenue)               | Interchange at Surratts Road                |   | 2        | 5  | 4     | 6   | No                            | 2010                   | No      |
| MDSHA               | MP4k       | Construct   | Approved        | MD 5 Relocated at Hughesville      | End of divided highway south of Hughesville | End of divided highway north of Hughesville | 2        | 2  | 3     | 3   | Yes                           | 2007                   | No      |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP

# Appendix-A

## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

| Agency | Project ID | Improv.     | Environ. Review | Facility                        | From   | To                   | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-------------|-----------------|---------------------------------|--|----------------------|----------|----|-------|-----|-------------------------------|------------------------|---------|
|        |            |             |                 |                                 |  |                      | from     | to | from  | to  |                               |                        |         |
| MDSHA  |            | Construct   | Approved        | US 15 Catoclin Mountain Highway | MD 26 Liberty Road   |                      | 2        | 2  | 4     | 4   | Complete?                     | 2006                   | Yes     |
| MDSHA  | MP15       | Reconstruct | Pending         | US 15 Catoclin Mountain Highway | @ Monocacy Blvd  |                      | 1        | 1  | 4     | 4   | No                            | 2010                   | Yes     |
| MDSHA  |            | Upgrade     | Approved        | US 29 (Columbia Pike)           | Musgrove/Fairland Road                                       |                      | 2        | 5  | 6     | 6   | No                            | 2010                   | Yes     |
| MDSHA  |            | Upgrade     | approved        | US 29 (Columbia Pike)           | MD 198   |                      | 2        | 5  | 6     | 6   | Complete                      | 2005                   | Yes     |
| MDSHA  |            | Upgrade     | approved        | US 29 (Columbia Pike)           | Briggs Chaney Road   |                      | 2        | 5  | 6     | 6   | Yes                           | 2006                   | Yes     |
| MDSHA  |            | Upgrade     | Approved        | US 29 (Columbia Pike)           | Randolph Road  |                      | 2        | 5  | 6     | 6   | Complete                      | 2005                   | Yes     |
| MDSHA  |            | Upgrade     | Approved        | US 29 (Columbia Pike)           | Stewart Lane, Tech Rd., Greencastle Road, and Blackburn Road |                      | 2        | 5  | 6     | 6   | No                            | 2020                   | Yes     |
| MDSHA  | MP5a       | Upgrade     | Approved        | US 29 (Columbia Pike)           | Sligo Creek Parkway  | south of MD 193      | 2        | 5  | 6     | 6   | No                            | 2020                   | No      |
| MDSHA  | MP5c       | Upgrade     | Approved        | US 29 (Columbia Pike)           | north of MD 193  | south of MD 650      | 2        | 5  | 6     | 6   | No                            | 2020                   | No      |
| MDSHA  | MP5e       | Upgrade     | Approved        | US 29, Columbia Pike            | north of MD 650  | Howard County Line   | 2        | 5  | 6     | 6   | No                            | 2020                   | No      |
| MDSHA  |            | Construct   | N/A             | MD 75 Relocated                 | MD 80  |                      | 0        | 4  | 0     | 4   | No                            | 2010                   | Yes     |
| MDSHA  | FP1B       | Construct   | N/A             | MD 80/MD 355 Relocated          | South of Urbana  | North of Urbana      | 0        | 2  | 0     | 4   | Yes                           | 2005                   | No      |
| MDSHA  | FP2        | Widen       | Approved        | MD 85 (Buckeystown Pike)        | English Muffin Way   | north of Grove Road  | 2        | 2  | 2/4   | 4/6 | No                            | 2020                   | Yes     |
| MDSHA  | MP12c      | Construct   | Approved        | MD 97 (Brookeville Bypass)      | South of Brookeville   | North of Brookeville | 0        | 2  | 0     | 2   | No                            | 2015                   | Yes     |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP



# Appendix-A

## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

| Agency | Project ID | Improv.     | Environ. Review | Facility   | From                                | To                      | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-------------|-----------------|--|-------------------------------------|-------------------------|----------|----|-------|-----|-------------------------------|------------------------|---------|
|        |            |             |                 |  |                                     |                         | from     | to | from  | to  |                               |                        |         |
| MDSHA  |            | Upgrade     | Approved        | MD 97 (Georgia Avenue)   | interchange @ MD 28 (Norbeck Road)  |                         | 2        | 2  | 6     | 6   | No                            | 2010                   | Yes     |
| MDSHA  |            | Upgrade     | Approved        | MD 97 (Georgia Avenue)   | interchange @ Randolph Road         |                         | 2        | 2  | 6     | 6   | No                            | 2010                   | Yes     |
| MDSHA  | MP14       | Reconstruct | Approved        | MD 202 (Largo Town Ctr. Metro Access Improvs. )  | north of Brightseat Rd              | South of Technology Way | 2        | 2  | 6     | 6   | No                            | 2010                   | Yes     |
|        |            |             |                 | MD 210 (Indian Head Highway) with interchange improvements at: Wilson Bridge Dr., Livingston Rd./Kerby Hill Rd., Livingston Rd./Palmer Rd., Old Fort Rd. North, Ft. Washington Rd., and Livingston Rd/Swan Creek Rd. Intersections |                                     |                         |          |    |       |     |                               |                        |         |
| MDSHA  | MP6d       | Upgrade     | Approved        | MD 210 (Indian Head Highway) with interchange improvements at: Wilson Bridge Dr., Livingston Rd./Kerby Hill Rd., Livingston Rd./Palmer Rd., Old Fort Rd. North, Ft. Washington Rd., and Livingston Rd/Swan Creek Rd. Intersections | MD 228                              | Capital Beltway         | 2        | 5  | 6     | 6   | No                            | 2030                   | Yes     |
| MDSHA  | MP8e       | Widen       | pending         | US 301   | North of Mount Oak Road             | US 50                   | 2        | 5  | 4/6   | 6+2 | No                            | 2020                   | Yes     |
| MDSHA  | MP8a       | Study       | pending         | US 301 South Corridor Transportation Study   | South of La Plata                   | Mount Oak Road          | 2        | 5  | 4     | 4/6 | No                            | not coded              | Yes     |
| MDSHA  |            | Study       | pending         | US 301 Waldorf Bypass  | Turkey Hill Rd. in Charles Co.      | N. of US 301/MD 5 at TB | 2        | 5  | 4     | 4/6 | No                            | not coded              | Yes     |
| MDSHA  | MP16       | Construct   | Pending         | US 340 Interchange   | @US 340 at Jefferson Tech Park      |                         | 1        | 1  | 4     | 4   | No                            | 2009                   | No      |
| MDSHA  |            | Construct   | Approved        | MD 355   | Montrose/Randolph Rds.              | CSX RR                  | 2        | 2  | 6     | 6   | No                            | 2010                   | Yes     |
| MDSHA  |            | Reconstruct |                 | MD 450   | CSX grade separation at Peace Cross |                         | 2        | 2  | 4     | 4   | Yes                           | 2008                   | Yes     |
| MDTA   |            | Study       | Pending         | US 301 Governor Harry Nice Bridge  |                                     |                         |          |    |       |     | No                            | not coded              | No      |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP

# Appendix-A

12/05/07

## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency                | Project ID | Improv.   | Environ. Review | Facility  | From                 | To                            | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|-----------------------|------------|-----------|-----------------|---|----------------------|-------------------------------|----------|----|-------|-----|-------------------------------|------------------------|---------|
|                       |            |           |                 |   |                      |                               | from     | to | from  | to  |                               |                        |         |
| <b>MDOT Secondary</b> |            |           |                 |   |                      |                               |          |    |       |     |                               |                        |         |
| MDSHA                 | MS33       | Widen     | N/A             | MD 27   | MD 355               | A 305                         | 2        | 2  | 4     | 6   | Yes                           | 2006                   | No      |
| MDSHA                 | MS3d       | Widen     | Approved        | MD 28 (Darnestown Road)                           | Riffle Ford Road     | Great Seneca Highway (MD 119) | 3        | 3  | 2     | 4/6 | Complete                      | 2004                   | Yes     |
| MDSHA                 | MS3e       | Construct | Pending         | MD 28/Rockville Twn. Ctr. Interchanges            | MD 586/MD 911        |                               | 3        | 3  | 2     | 4   | No                            | 2030                   | Yes     |
| MDSHA                 | MS2f       | Construct | Pending         | MD 28 (Norbeck Road) / MD 198 (Spencerville Road) | MD 97                | I-95                          | 2        | 2  | 2/4   | 4/6 | No                            | 2020                   | Yes     |
| MDSHA                 | MS32       | Widen     | Approved        | MD 117  | I-270                | Seneca Creek State Park       | 2        | 2  | 2     | 4   | No                            | 2010                   | Yes     |
| MDSHA                 | MS34       | Widen     | N/A             | MD 121  | I-270                | W. Old Baltimore Rd.          | 3        | 3  | 4     | 6   | No                            | 2010                   | No      |
| MDSHA                 | MS6b       | Widen     | Approved        | MD 124 (Woodfield Road)                           | Midcounty Highway    | S. of Airpark Dr.             | 2        | 2  | 2     | 6   | No                            | 2015                   | Yes     |
| MDSHA                 | MS6c       | Widen     | Approved        | MD 124 (Woodfield Road)                           | S. of Airpark Dr.    | N. of Fieldcrest Rd.          | 2        | 2  | 2     | 6   | No                            | 2010                   | Yes     |
| MDSHA                 | MS6d       | Widen     | Approved        | MD 124 (Woodfield Road)                           | N. of Fieldcrest Rd. | Warfield Road                 | 2        | 2  | 2     | 6   | No                            | 2015                   | Yes     |
| MDSHA                 | MS10a      | Study     | Pending         | MD 201 Extended / US 1                            | I-95/I-495           | MD 198                        | 0        | 2  | 0     | 4-6 | No                            | not coded              | Yes     |
| MDSHA                 | MS10b      | Widen     | N/A             | MD 201 (Kenilworth Ave.)                          | Rittenhouse Road     | Pontiac St.                   | 2        | 2  | 4     | 6   | No                            | 2020                   | No      |
| MDSHA                 | PGS6       | Construct | Approved        | MD 212 Relocated (Ammendale/Virginia Manor)       | US 1                 | I-95                          | 3        | 2  | 2     | 4   | Yes                           | 2007                   | Yes     |
| MDSHA                 | MS30       | Widen/Con | Approved        | MD 414 Extended                                   | MD 210               | I-295                         | 0        | 3  | 0     | 4   | Yes                           | 2008                   | Yes     |
| MDSHA                 | MS18d      | Widen     | Approved        | MD 450 (Annapolis Road)                           | Stonybrook Drive     | West of MD 3                  | 2        | 2  | 2     | 4   | No                            | 2020                   | No      |

## Appendix-A

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# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency                   | Project ID | Improv.   | Environ. Review | Facility                           | From  | To                            | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------------------------|------------|-----------|-----------------|------------------------------------|---|-------------------------------|----------|----|-------|-----|-------------------------------|------------------------|---------|
|                          |            |           |                 |                                    |   |                               | from     | to | from  | to  |                               |                        |         |
| MDSHA                    | MS18i      | Widen     | Approved        | MD 450 (Annapolis Road)            | Whitfield Chapel Road                             | Seabrook Road                 | 2        | 2  | 2     | 5   | Complete                      | 2005                   | Yes     |
| MDSHA                    | MS18h      | Widen     | Approved        | MD 450 (Annapolis Road)            | MD 193  | Stonybrook Drive              | 2        | 2  | 2     | 4/6 | Complete                      | 2005                   | Yes     |
| MDSHA                    | MS20c      | Construct | Approved        | MD 475 (East Street Extended)      | South Street                                      | proposed Monocacy Boulevard   | 0        | 3  | 0     | 4   | Yes                           | 2010                   | Yes     |
| MDSHA                    |            | Study     | Pending         | UM Connector                       | I-95/I-495 Interchange                            | University of Maryland campus | 0        | 0  | 0     | 0   | No                            | not coded              | Yes     |
| <b>Montgomery County</b> |            |           |                 |                                    |   |                               |          |    |       |     |                               |                        |         |
| Mont.Co.                 | MC11b      | Construct | N/A             | A-305 - MidCounty Highway Extended | Stringtown Road                                   | MD 27 (Ridge Road)            | 0        | 3  | 0     | 4   | No                            | 2010                   | No      |
| Mont.Co.                 | MC11c      | Construct | N/A             | A-305 - MidCounty Highway Extended | MD 355  | Stringtown Road               | 0        | 3  | 0     | 2   | No                            | 2010                   | No      |
| Mont.Co.                 | nrs        | Construct |                 | Burtonsville Access Rd.            | MD 198  | School Success Rd.            | 0        | 4  | 0     | 2   |                               | 2009                   | Yes     |
| Mont.Co.                 | nrs        |           |                 | Century Blvd./Crystal Rock Loop    | existing Century Blvd.                            | Crystal Rock Drive            |          | 3  |       | 4   | No                            | 2008                   | No      |
| Mont.Co.                 | nrs        | Construct |                 | Chapman Avenue                     | Randolph Road                                     | Old Georgetown Road           | 0        | 3  | 0     | 2   | No                            | 2010                   | No      |
| Mont.Co.                 | MC38a      | Construct |                 | Citadel Avenue Extended            | dead end of existing road south of Marinelli Road | Nicholson Lane                | 0        | 4  | 0     | 2   | No                            | 2008                   | Yes     |
| Mont.Co.                 | MC44       | Widen     |                 | Fairland Rd.                       | US 29   | Briggs Chaney Rd.             | 3        | 3  | 2     | 3   | No                            | 2008                   | Yes     |
| Mont.Co.                 | MC5d       | Construct |                 | Father Hurley Blvd.                | Wisteria  | MD 118 Relocated              | 0        | 2  | 0     | 4   | No                            | 2010                   | Yes     |
| Mont.Co.                 | MC5c       | Widen     |                 | Father Hurley/ Ridge Rd.           | I-270   | existing MD 27                | 2        | 2  | 4     | 6   | No                            | 2010                   | No      |
| Mont.Co.                 | MC7a       | Widen     |                 | Goshen Rd. Fac. Planning           | Odenhal Avenue.                                   | Warfield Road                 | 3        | 3  | 2     | 4   | No                            | 2015                   | No      |

# Appendix-A

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency   | Project ID | Improv.   | Environ. Review | Facility   | From                             | To                        | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|----------|------------|-----------|-----------------|--|----------------------------------|---------------------------|----------|----|-------|-----|-------------------------------|------------------------|---------|
|          |            |           |                 |  |                                  |                           | from     | to | from  | to  |                               |                        |         |
| Mont.Co. | MC7b       | Construct |                 | Goshen Rd. Fac. Planning   | Warfield Road                    | Brink Road                | 0        | 3  | 0     | 2   | No                            | 2012                   | No      |
| Mont.Co. | MC43       | Construct |                 | I-4 Bridge over I-270  | Century Boulevard                | Milestone Center Drive    | 0        | 3  | 0     | 4   | No                            | 2015                   | No      |
| Mont.Co. | MC41       | Widen     |                 | Longdraft Road   | MD 124                           | MD 117                    | 3        | 3  | 2     | 4   | No                            | 2015                   | No      |
| Mont.Co. |            | Study     |                 | M-83 (with MD 118 Ext. and Middlebrook Rd. Ext. widening projects below) | MD 27 (Ridge Road)               | Montgomery Village Avenue | 0        | 2  | 0     | 4-6 | No                            | 2006 for study         | No      |
| Mont.Co. | MC11a      | Construct |                 | M-83 - Midcounty Highway Extended  | MD 27 (Ridge Road)               | Middlebrook Road          | 0        | 2  | 0     | 4-6 | No                            | 2020                   | No      |
| Mont.Co. | MC11d      | Construct |                 | M-83 - Midcounty Highway Extended  | Middlebrook Road                 | Montgomery Village Avenue | 0        | 2  | 0     | 4-6 | No                            | 2020                   | No      |
| Mont.Co. | MC12f      | Widen     |                 | MD 118 Ext (Grmntwn. Rd.)  | MD 355                           | M-83/Watkins Mill Rd.     | 2        | 2  | 3     | 6   | No                            | 2020                   | No      |
| Mont.Co. | MC14g      | Widen     |                 | Middlebrook Road Ext. Widening   | MD 355                           | M-83                      | 2        | 2  | 3     | 6   | No                            | 2015                   | No      |
| Mont.Co. | MC15b      | Construct |                 | Montrose Parkway East Fac. Planning                                      | Parklawn Drive                   | MD 586 - Veirs Mill Road  | 0        | 2  | 0     | 4   | No                            | 2015                   | No      |
| Mont.Co. | MC15       | Construct | N/A             | Montrose Parkway West  | Montrose Road (Tower Oaks Blvd.) | old' Old Georgetown Road  | 0        | 2  | 0     | 4   | No                            | 2008                   | No      |
| Mont.Co. | MC30       | Construct |                 | Nebel St Extended  | Randolph Rd                      | Target Store Site         | 0        | 3  | 0     | 4   |                               | 2010                   | Yes     |
| Mont.Co. | MC18a      | Widen     | N/A             | Norbeck Rd. Ext.   | MD 28                            | MD 198                    | 3        | 3  | 2     | 4   | No                            | 2020                   | No      |
| Mont.Co. | nr         | Construct |                 | Observation Drive Extended   | existing terminus                | MD 355 Bypass             | 0        | 3  | 0     | 2   | No                            | 2020                   | No      |
| Mont.Co. | MC42       | Construct |                 | Randolph Road  | Parklawn Drive                   | Rock Creek Park           | 2        | 2  | 4     | 5   | No                            | 2010                   | No      |

# Appendix-A

## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

| Agency                       | Project ID | Improv.     | Environ. Review | Facility  | From   | To                               | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|------------------------------|------------|-------------|-----------------|---|--|----------------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|                              |            |             |                 |   |  |                                  | from     | to | from  | to |                               |                        |         |
| Mont.Co.                     | MC34       | Widen       |                 | Snouffer School Rd. Fac. Planning               | Goshen Rd.                                   | MD 124                           | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| Mont.Co.                     | MC28a      | Widen       | N/A             | Stringtown Rd. Ext.                             | MD 355                                       | Piedmont Road                    | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| Mont.Co.                     | MC28       | Construct   | N/A             | Stringtown Rd. Ext.                             | I270/ MD 121 int.                            | existing Stringtown Rd. @ MD 355 | 0        | 3  | 0     | 4  | No                            | 2007                   | Yes     |
| Mont.Co.                     | MC22       | Construct   |                 | Valley Park Dr.                                 | e.of MD 27                                   | exist. Valley Park Dr.           | 0        | 3  | 0     | 2  | Complete                      | 2006                   | Yes     |
| Mont.Co.                     | MC23a      | Construct   |                 | Watkins Mill Rd. ext.                           | Md 117                                       | MD 355                           | 0        | 3  | 0     | 4  | No                            | 2015                   | No      |
| Mont.Co.                     | MC13       | Construct   |                 | Woodfield Rd.( MD 124 Ext.)                     | 1200' North of MD 108                        | MD 27                            | 0        | 2  | 0     | 2  |                               | 2009                   | Yes     |
| <b>Prince Georges County</b> |            |             |                 |   |  |                                  |          |    |       |    |                               |                        |         |
| PG Co.                       | PGS3a      | Widen       | N/A             | Addison Road                                    | MD 214                                       | Walker Mill Road                 | 3        | 3  | 2     | 4  | Yes                           | 2014                   | No      |
| PG Co.                       |            | Reconstruct | N/A             | Addison Road                                    | Sheriff Road                                 | MD 704                           | 4        | 4  | 2     | 2  | Yes                           | 2014                   |         |
| PG Co.                       | PGS5       | Construct   | N/A             | Allentown Road Relocated                        | Indian Head Highway (MD 210)                 | Brinkley Road                    | 0        | 3  | 0     | 4  | No                            | 2025                   | No      |
| PG Co.                       | PGS6       | Widen       | N/A             | Ammendale/Virginia Manor Road                   | I-95   | west of US 1                     | 3        | 3  | 2     | 6  | Yes                           | 2008                   | Yes     |
| PG Co.                       | PGS73      | widen       | N/A             | Ardwick-Ardmore Road                            | MD 704                                       | 91st Ave.                        | 4        | 4  | 2     | 4  | Yes                           | 2015                   | No      |
| PG Co.                       | PGP4a      | Construct   | N/A             | Baltimore Washington Pkwy/Greenbelt Rd (MD 193) | ramp to southbound Baltimore Washington Pkwy |                                  | 0        | 5  | 0     | 4  | No                            | 2025                   | No      |
| PG Co.                       | PGS74b     | Construct   | N/A             | Bell Station Road                               | Annapolis Road (MD 450)                      | Church Road                      | 0        | 4  | 0     | 4  | Yes                           | 2006                   | No      |
| PG Co.                       | PGS75      | Widen       | N/A             | Berry Road                                      | Livingston Road                              | Accokeek Road (MD 373)           | 4        | 4  | 2     | 4  | No                            | 2010                   | No      |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP

# Appendix-A

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.    | Environ. Review | Facility                  | From  | To                      | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|------------|-----------------|---------------------------|---|-------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |            |                 |                           |   |                         | from     | to | from  | to |                               |                        |         |
| PG Co. | PGS9b      | Widen      | N/A             | Bowie Race Track Road     | Laurel-Bowie Road (MD 197)                          | Old Chapel Road         | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS9a      | Widen      | N/A             | Bowie Race Track Road     | Annapolis Road (MD 450)<br>north of Piscataway Road | Old Chapel Road         | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS10      | Widen      | N/A             | Brandywine Road           | (MD 223)  | Thrift Road             | 4        | 4  | 2     | 4  | No                            | 2020                   | No      |
| PG Co. | PGS76      | Widen      | N/A             | Briggs Chaney Road        | Montgomery County line                              | Old Gunpowder Road      | 4        | 4  | 2     | 4  | Yes                           | 2010                   | No      |
| PG Co. | PGS11      | Widen      | N/A             | Brightseat Road           | Sheriff road  | MD 214                  | 4        | 4  | 2     | 4  | Yes                           | 2004                   | Yes     |
| PG Co. | PGS12      | Widen      | N/A             | Brinkley Road             | St. Barnabas Road (MD 414)                          | Allentown Road (MD 337) | 3        | 3  | 4     | 6  | No                            | 2015                   | no      |
| PG Co. | PGS13      | Construct  | N/A             | Brooks Drive Extended     | Marlboro Pike                                       | Rollins Avenue          | 0        | 3  | 0     | 4  | No                            | 2020                   | No      |
| PG Co. | PGS14      | Widen      | N/A             | Cabin Branch Drive        | Columbia Park Road                                  | north of Sheriff Road   | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS16a     | Construct  | N/A             | Campus Way North          | Lake Arbor Way                                      | south of Lottsford Road | 0        | 4  | 0     | 4  | No                            | 2004                   | No      |
| PG Co. | PGS16b     | Construct  | N/A             | Campus Way North Extended | south of Lottsford Road                             | Evarts Drive            | 0        | 4  | 0     | 4  | No                            | 2010                   | No      |
| PG Co. | PGS17      | Widen      | N/A             | Cherry Hill Road          | Montgomery County line                              | Baltimore Avenue (US 1) | 3        | 3  | 2     | 4  | No                            | 2012                   | Yes     |
| PG Co. | PGS18      | Widen      | N/A             | Church Road               | Oak Grove Road                                      | Annapolis Road (MD 450) | 4        | 4  | 2     | 4  | No                            | 2005                   | No      |
| PG Co. | PGS20a     | Widen      | N/A             | Columbia Park Road        | Cabin Branch Road                                   | Columbia Terrace        | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS20b     | Widen      | N/A             | Columbia Park Road        | US 50   | Cabin Branch Road       | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS21a     | widen/cons | N/A             | Contee Road               | US 1  | Van Dusen Road          | 3        | 3  | 2     | 3  | Yes                           | 2004                   | Yes     |

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.   | Environ. Review | Facility                  | From  | To                           | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|---------------------------|---|------------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |           |                 |                           |   |                              | from     | to | from  | to |                               |                        |         |
| PG Co. | PGS21b     | Widen     | N/A             | Contee Road               | Briarwood Drive   | US 1                         | 4        | 4  | 2     | 4  | No                            | 2000                   | Yes     |
| PG Co. | PGS22      | Widen     | N/A             | Dangerfield Road          | Cheltenham Avenue                                       | Woodyard Road (MD 223)       | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS24a     | Widen     | N/A             | Dower House Road          | Woodyard Road (MD 223)                                  | Foxley Road                  | 4        | 4  | 2     | 4  | No                            | 2025                   | No      |
| PG Co. | PGS24b     | Widen     | N/A             | Dower House Road          | Foxley Road   | Pennsylvania Avenue (MD 4)   | 4        | 4  | 2     | 6  | No                            | 2015                   | No      |
| PG Co. | PGS25      | Widen     | N/A             | Fisher road               | Brinkley Road   | Holton Lane                  | 4        | 4  | 2     | 4  | No                            | 2012                   | No      |
| PG Co. | PGS26      | Construct | N/A             | Forbes Boulevard Extended | south of Amtrak   | Greenbelt Road (MD 193)      | 0        | 4  | 0     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS27      | Widen     | N/A             | Forestville Road          | Allentown Road (MD 337)                                 | Pennsylvania Avenue (MD 4)   | 4        | 4  | 2     | 4  | No                            | 2012                   | Yes     |
| PG Co. | PGS29      | Widen     | N/A             | Fort Washington Road      | Riverview road<br>east of Kenliworth Avenue<br>(MD 201) | Indian Head Highway (MD 210) | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS30a     | Widen     | N/A             | Good Luck Road            | Cipriano Road   | Cipriano Road                | 4        | 4  | 2     | 4  | No                            | 2020                   | No      |
| PG Co. | PGS30b     | Widen     | N/A             | Good Luck Road            | Cipriano Road   | Greenbelt Road (MD 193)      | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS87      | Widen     | N/A             | Governor Bridge Road      | US301   | Anne arundel County          | 4        | 4  | 2     | 4  | No                            | 2012                   | No      |
| PG Co. | PGS34a     | Widen     | N/A             | Hill Road                 | Central Avenue (MD 214)                                 | ML King Jr Highway (MD 704)  | 4        | 4  | 2     | 4  | No                            | 2013                   | Yes     |
| PG Co. | PGS34b     | Construct | N/A             | Hill Road                 | ML King Jr Highway (MD 704)                             | Sheriff Road                 | 0        | 4  | 0     | 2  | No                            | 2015                   | No      |
| PG Co. | PGS88      | Construct | N/A             | Iverson St. Extended      | Wheeler Road  | 19th Avenue                  | 0        | 4  | 0     | 4  | No                            | 2010                   | No      |
| PG Co. | PGS35      | Widen     | N/A             | Karen Boulevard           | Walker Mill Road  | Central Avenue (MD 214)      | 4        | 4  | 2     | 4  | No                            | 2020                   | No      |

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| Agency | Project ID | Improv.   | Environ. Review | Facility                               | From                                     | To                                 | Facility |     | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|--|--|------------------------------------|----------|-----|-------|-----|-------------------------------|------------------------|---------|
|        |            |           |                 |  |  |                                    | from     | to  | from  | to  |                               |                        |         |
| PG Co. | PGS38a     | Widen     | N/A             | Livingston Road                        | Indian Head Highway (MD 210) at Eastover | Kerby Hill Rd.                     | 4        | 3/4 | 2     | 4   | No                            | 2015                   | No      |
| PG Co. | PGS38b     | Widen     | N/A             | Livingston Road                        | Piscataway Creek                         | Farmington Road                    | 4        | 4   | 2     | 4   | No                            | 2020                   | No      |
| PG Co. | PGS40a     | Widen     | N/A             | Lottsford Road                         | Archer Lane                              | Enterprise Road (MD 193)           | 3        | 3   | 2     | 4   | No                            | 2011                   | Yes     |
| PG Co. | PGS39b     | Widen     | N/A             | Lottsford Vista Road                   | ML King Jr Highway (MD 704)              | Ardwick-Ardmore Road/Relocated     | 4        | 4   | 2     | 4   | No                            | 2020                   | No      |
| PG Co. | PGS44b     | Widen     | N/A             | Metzerott Road                         | Adelphi Road                             | University Boulevard (MD 193)      | 4        | 4   | 2     | 4   | No                            | 2020                   | No      |
| PG Co. | PGS44a     | Widen     | N/A             | Metzerott Road                         | New Hampshire Avenue (MD 650)            | Adelphi Road                       | 4        | 4   | 2     | 4   | No                            | 2020                   | No      |
| PG Co. | PGS45      | Widen     | N/A             | Mitchellville Road                     | Mount Oak Road                           | Collington Road (MD 197)           | 4        | 4   | 2     | 6   | Yes                           | 2000                   | No      |
| PG Co. | PGS89      | Widen     | N/A             | Mt. Oak                                | Church Road                              | Mitchellville Road                 | 3        | 3   | 2     | 4   | No                            | 2015                   | No      |
| PG Co. | PGS46      | Widen     | N/A             | Murkirk Road                           | west of Baltimore Avenue (US 1)          | Odell Road                         | 4        | 4   | 2     | 4   | No                            | 2020                   | No      |
| PG Co. | nrs        | Construct | N/A             | National Harbor Main Circulation Roads | I-95/I-295 Interchange                   | Waterfront Parcel, National Harbor | 0        | 4   | 0     | 4/6 |                               | 2008                   | Yes     |
| PG Co. | PGS47      | Widen     | N/A             | Oak Grove and Leeland Roads            | Watkins Park Road (MD 193)               | Robert Crain Highway (US 301)      | 4        | 4   | 2     | 4   | No                            | 2005                   | No      |
| PG Co. | PGS48      | Widen     | N/A             | Old Alexandria Ferry Road              | Woodyard Road (MD 223)                   | Branch Avenue (MD 5)               | 4        | 4   | 2     | 4   | No                            | 2015                   | No      |
| PG Co. | PGS80      | Construct | N/A             | Old Baltimore Pike Extended            | Muirkirk Road                            | Contee Road                        | 0        | 4   | 0     | 2   | Yes                           | 2020                   | No      |
| PG Co. | PGS50      | Widen     | N/A             | Old Branch Avenue                      | north of Piscataway Road (MD 223)        | Allentown Road (MD 337)            | 4        | 4   | 2     | 4   | Yes                           | 2015                   | No      |
| PG Co. | PGS90      | Construct | N/A             | Old Fort Rd. Extended                  | Piscataway Road (MD 223)                 | Old Fort Rd                        | 0        | 4   | 0     | 4   | No                            | 2010                   | No      |



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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.   | Environ. Review | Facility                      | From                          | To                       | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|-------------------------------|-------------------------------|--------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |           |                 |                               |                               |                          | from     | to | from  | to |                               |                        |         |
| PG Co. | PGS51a     | Widen     | N/A             | Old Gunpowder Road            | Powder Mill Road              | Greencastle Road         | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS52      | Widen     | N/A             | Oxon Hill Road                | Fort Foote Rd - North         | MD 210                   | 4        | 4  | 2     | 4  | No                            | 2010                   | Yes     |
| PG Co. |            | Widen     | N/A             | Oxon Hill Road                | National Harbor Entrance      | Fort Foote Rd - North    | 4        | 4  | 2     | 4  | Yes                           | 2011                   | Yes     |
| PG Co. | PGS81      | Construct | N/A             | Presidential Parkway          | Suitland Parkway              | Melwood Road             | 0        | 3  | 0     | 6  | No                            | 2025                   | No      |
| PG Co. |            | Construct |                 | Regency Parkway/ Regency Lane | Regency Lane                  | Hil-Mar Drive            | 0        | 4  | 0     | 4  |                               | 2007                   | Yes     |
| PG Co. | PGS54      | Widen     | N/A             | Rhode Island Avenue           | University Boulevard (MD 193) | Baltimore Avenue (US 1)  | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS55a     | Widen     | N/A             | Ritchie Marlboro Road         | Ritchie Rd                    | White House Road         | 3        | 3  | 2     | 4  | No                            | 2003                   | Yes     |
| PG Co. | PGS56a     | Widen     | Approved        | Ritchie Road/Forestville Road | Alberta Drive                 | MD 4 Pennsylvania Avenue | 4        | 4  | 2     | 4  | Yes                           | 2009                   | Yes     |
| PG Co. | PGS56e     | Widen     | N/A             | Ritchie Road/Forestville Road | Alberta Drive                 | Edgeworth Drive          | 4        | 4  | 2     | 4  | No                            | 2004                   | Yes     |
| PG Co. | PGS57      | Widen     | N/A             | Rollins Avenue                | Central Avenue (MD 214)       | Walker Mill Road         | 4        | 4  | 2     | 4  | No                            | 2020                   | No      |
| PG Co. | PGS58      | Widen     | N/A             | Rosaryville Road              | Robert Crain Highway (US 301) | Woodyard Road (MD 223)   | 4        | 4  | 2     | 4  | No                            | 2020                   | No      |
| PG Co. | PGS60b     | Widen     | N/A             | Spine Road                    | Branch Avenue (MD 5)/US 301   | Brandywine Road (MD 381) | 3        | 3  | 2     | 6  | No                            | 2015                   | No      |
| PG Co. | PGS61      | Widen     | N/A             | Springfield Road              | Lanham-Severn Road (MD 546)   | Good Luck Road           | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS82      | Construct | N/A             | St. Joseph's Drive            | MD 202 interchange at         | Ardwick-Ardmore Road     | 0        | 4  | 0     | 4  | No                            | 2015                   | No      |
| PG Co. | PGP2       | Construct | N/A             | Suitland Parkway              | Rena/Forestville Roads        |                          | 5        | 5  | 0     | 0  | No                            | 2025                   | No      |

# Appendix-A

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.   | Environ. Review | Facility                      | From                                 | To                           | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|-------------------------------|--------------------------------------|------------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |           |                 |                               |                                      |                              | from     | to | from  | to |                               |                        |         |
| PG Co. | PGS62a     | Widen     | N/A             | Suitland Road                 | Allentown Road (MD 337)              | Suitland Parkway             | 3        | 3  | 2     | 4  | No                            | 2009                   | Yes     |
| PG Co. | PGS62b     | Widen     | N/A             | Suitland Road                 | Suitland Parkway                     | Silver Hill Road (MD 458)    | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS63      | Widen     | N/A             | Sunnyside Avenue              | Baltimore Avenue (US 1)              | Kenliworth Avenue (MD 201)   | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS64      | Widen     | N/A             | Surratts Road                 | Beverly Avenue                       | Brandywine Road              | 4        | 4  | 2     | 4  | No                            | 2005                   | Yes     |
| PG Co. | PGS65      | Widen     | N/A             | Temple Hill Road              | Piscataway Road (MD 223)             | St. Barnabas Road (MD 414)   | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGP5a      | Construct | N/A             | US 50/Columbia Park Road Ramp | westbound ramp to Columbia Park Road |                              | 5        | 5  | 1     | 1  | No                            | 2025                   | No      |
| PG Co. | PGP5b      | Construct | N/A             | US 50/Columbia Park Road Ramp | eastbound ramp Cheverly vicinity     |                              | 5        | 5  | 1     | 1  | Yes                           | 2003                   | No      |
| PG Co. | PGS67a     | Widen     | N/A             | Van Dusen Road                | Contee Road                          | Sandy Springs Road (MD 198)  | 3        | 3  | 2     | 4  | No                            | 2020                   | No      |
| PG Co. | PGS67b     | Construct | N/A             | Van Dusen Road Interchange    | @Contee Road                         |                              | 0        | 0  | 0     | 0  | No                            | 2025                   | No      |
| PG Co. | PGS68      | Widen     | N/A             | Virginia Manor Road           | Muirkirk Road                        | Contee Road                  | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS69a     | Widen     | N/A             | Walker Mill Road              | Silver Hill Road                     | I-95                         | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| PG Co. | PGS70      | Widen     | N/A             | Wheeler Road                  | St. Barnabas Road (MD 414)           | District of Columbia limits  | 4        | 4  | 2     | 4  | No                            | 2020                   | No      |
| PG Co. | PGS71      | Widen     | N/A             | White House Road              | Ritchie-Marlboro Road                | Largo-Landover Road (MD 202) | 3        | 3  | 2     | 6  | Yes                           | 2015                   | No      |
| PG Co. | PGS72      | Widen     | N/A             | Whitfield Chapel Road         | Annapolis Road (MD 450)              | Ardwick-Ardmore Road         | 4        | 4  | 2     | 4  | No                            | 2020                   | No      |
| PG Co. | PGS40b     | Construct | N/A             | Woodmore Road                 | Enterprise Road (MD 193)             | Church Road                  |          | 3  |       | 4  | No                            | 2015                   | No      |

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# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency                     | Project ID | Improv.       | Environ. Review | Facility                                | From             | To                     | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|----------------------------|------------|---------------|-----------------|---|------------------|------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|                            |            |               |                 |   |                  |                        | from     | to | from  | to |                               |                        |         |
| PG Co.                     | PGS42      | Widen         | N/A             | Woodyard Road (MD 223)                  | Rosaryville Road | Dower House Road       | 2        | 2  | 2     | 4  | No                            | 2007                   | No      |
| PG Co.                     | PGS42b     | Construct     | N/A             | Woodyard Road Relocated (MD 223)        | Piscataway Creek | Livingston Road        | 0        | 3  | 0     | 2  | No                            | 2010                   | No      |
| PG Co.                     | PGS42c     | Widen         | N/A             | Woodyard Road Relocated (MD 223)        | Piscataway Creek | Livingston Road        | 3        | 3  | 2     | 4  | No                            | 2020                   | No      |
| <b>Frederick County</b>    |            |               |                 |   |                  |                        |          |    |       |    |                               |                        |         |
| Fred.Co.                   | FS2        | Construct     | N/A             | Monocacy Blvd                           | Hughes Ford Rd.  | Gas House Pike         | 0        | 3  | 0     | 4  | Yes                           | 2009                   | No      |
| <b>Charles County</b>      |            |               |                 |   |                  |                        |          |    |       |    |                               |                        |         |
| Chas.Co                    | CHS1       | Widen/Realign | N/A             | Cross County Connector (Billingsly Rd.) | Middletown Rd.   | MD 210                 | 3        | 3  | 2     | 4  |                               | 2009                   | No      |
| <b>Anne Arundel County</b> |            |               |                 |   |                  |                        |          |    |       |    |                               |                        |         |
| BMC                        | AA1d       | Widen         | N/A             | I-97                                    | US 50/301        | MD 32/3                | 1        | 1  | 4     | 6  |                               | 2010                   |         |
| BMC                        | AA15a      | Widen         | N/A             | I-295                                   | I-695            | MD 100                 | 1        | 1  | 4     | 6  |                               | 2010                   |         |
| BMC                        | AA3e       | Widen         | N/A             | MD 2                                    | US 50            | MD 100                 |          | 2  | 4/5   | 6  |                               | 2020                   |         |
| BMC                        | AA3g       | Widen         | N/A             | MD 2                                    | MD 450           | South River Bridge     | 2        | 2  | 4     | 6  |                               | 2030                   |         |
| BMC                        | AA4e       | Widen         | N/A             | MD 3                                    | MD 32            | Prince George Co. Line | 2        | 2  | 4     | 6  |                               | 2030                   |         |
| BMC                        | AA5c       | Widen         | N/A             | MD 32                                   | BW Parkway       | Howard County Line     |          | 1  | 4     | 8  |                               | 2020                   |         |
| BMC                        | AA14C      | Widen         | N/A             | US50 / MD 301                           | AA / PG line     | Bay Bridge             | 1        | 1  | 6     | 8  |                               | 2020                   |         |

# Appendix-A

## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

| Agency                | Project ID | Improv.   | Environ. Review | Facility                   | From                             | To                    | Facility |     | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|-----------------------|------------|-----------|-----------------|----------------------------|----------------------------------|-----------------------|----------|-----|-------|-----|-------------------------------|------------------------|---------|
|                       |            |           |                 |                            |                                  |                       | from     | to  | from  | to  |                               |                        |         |
| BMC                   | AA6e       | Widen     | N/A             | MD 100                     | Howard Co. Line                  | MD 2                  |          | 5/1 | 4/6   | 6/8 |                               | 2020                   |         |
| BMC                   | AA7        | Widen     | N/A             | MD 170                     | MD 175                           | MD 100                |          | 2   | 2     | 4   |                               | 2015                   |         |
| BMC                   | AA8a       | Widen     | N/A             | MD 175                     | MD 170                           | BW Parkway            |          | 2   | 2     | 4   |                               | 2010                   |         |
| BMC                   | AA29       | Widen     | N/A             | MD 177                     | MD 100                           | South Carolina Avenue | 2        | 2   | 3/2   | 5   |                               | 2020                   |         |
| BMC                   | AA30       | Widen     | N/A             | MD 198                     | MD 32                            | BW Parkway            | 2        | 2   | 2     | 4   |                               | 2025                   |         |
| BMC                   | AA30a      | Widen     | N/A             | MD 198                     | PG line                          | BW Parkway            | 2        | 2   | 4     | 6   |                               | 2025                   |         |
| BMC                   |            | Widen     | N/A             | MD 607                     | Woods Rd.                        | MD 173                |          |     | 2     | 4   |                               | 2025                   |         |
| <b>Carroll County</b> |            |           |                 |                            |                                  |                       |          |     |       |     |                               |                        |         |
| BMC                   | CA3A       | Construct | N/A             | Hampstead Bypass (MD 30)   | Wolf Hill Dr                     | Brodbeck Rd           |          | 2   | 0     | 2   |                               | 2008                   |         |
| BMC                   | CA1B       | Widen     | N/A             | MD 140                     | MD 31                            | Market St.            |          | 1   | 4/6   | 8   |                               | 2020                   |         |
| BMC                   | nrS        | Construct | N/A             | MD 140 (3 new interchange) | @ MD 97S, Center St. & Englar Rd |                       |          | 1   | -     | -   |                               | 2020                   |         |
| BMC                   | CA2a       | Widen     | N/A             | MD 26                      | MD 32                            | Liberty Reservoir     |          | 2   | 4     | 6   |                               | 2015                   |         |
| BMC                   | in base    | Widen     | N/A             | MD 32                      | MD 26                            | Howard County Line    |          | 2   | 2     | 4   |                               | 2020                   |         |
| BMC                   | CA5        | Widen     | N/A             | MD 97                      | MD 140                           | Pleasant Valley Rd    |          | 2   | 2     | 4   |                               | 2020                   |         |
| <b>Howard County</b>  |            |           |                 |                            |                                  |                       |          |     |       |     |                               |                        |         |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP

# Appendix-A

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.     | Environ. Review | Facility                           | From                  | To                         | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-------------|-----------------|------------------------------------|-----------------------|----------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |             |                 |                                    |                       |                            | from     | to | from  | to |                               |                        |         |
| BMC    | HW1b       | Widen       | N/A             | I-70                               | US 29                 | US 40                      | 1        | 1  | 4     | 6  |                               | 2030                   |         |
| BMC    | HW1a       | Reconstruct | N/A             | I-70 (partial to full interchange) | @ Marriottsville Road |                            | 1        | 1  |       |    |                               | 2020                   |         |
| BMC    | HW19       | Widen       | N/A             | I-95                               | Howard / PG line      | Balt. / Howard line        | 1        | 1  | 8     | 10 |                               | 2020                   |         |
| BMC    | HW10d      | Widen       | N/A             | US 29                              | I-70                  | MD 100                     |          | 5  | 4/6   | 8  |                               | 2030                   |         |
| BMC    | HW10b      | Widen       | N/A             | US 29 NB                           | S. of MD 175          | Middle Patuxent River      |          | 5  | 4     | 6  |                               | 2010                   |         |
| BMC    | HW3c       | Widen       | N/A             | MD 32                              | Cedar Lane            | Anne Arundel County Line   |          | 1  | 4/6   | 8  |                               | 2015                   |         |
| BMC    | HW3b       | Widen       | N/A             | MD 32                              | MD 108                | I-70                       |          | 1  | 2     | 4  |                               | 2015                   |         |
| BMC    | HW3d       | Widen       | N/A             | MD 32                              | I-70                  | Carroll County Line        |          | 2  | 2     | 4  |                               | 2030                   |         |
| BMC    |            | Construct   | N/A             | MD 32 (interchange)                | @ Burntwoods Rd.      |                            |          |    |       |    |                               | 2009                   |         |
| BMC    | HW6c       | Widen       | N/A             | MD 108                             | Trotter Road          | MD 32                      |          | 2  | 2     | 4  |                               | 2025                   |         |
| BMC    | HW6d       | Widen       | N/A             | MD 108                             | Woodland Rd.          | 1200' w. of Centennial Ln. | 2        | 2  | 2     | 4  |                               | 2011                   |         |
| BMC    | HW8b       | Widen       | N/A             | MD 216                             | West of US 29         | Sanner Road                |          | 3  | 2     | 4  |                               | 2020                   |         |
| BMC    | nrs        | Construct   | N/A             | Dorsey Run Rd., North              | MD 103                | MD 175                     |          |    | 0     | 4  |                               | 2011                   |         |
| BMC    |            | Construct   | N/A             | Dorsey Run Rd., South              | MD 175                | Gulford Rd.                |          |    | 0     | 4  |                               | 2010                   |         |
| BMC    | HW16C      | Widen       | N/A             | Gorman Road                        | Stephens Road         | US 1                       |          | 3  | 2     | 3  |                               | 2025                   |         |

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

| Agency               | Project ID | Improv.        | Environ. Review | Facility  | From  | To   | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|----------------------|------------|----------------|-----------------|---|---|--|----------|----|-------|----|-------------------------------|------------------------|---------|
|                      |            |                |                 |   |   |  | from     | to | from  | to |                               |                        |         |
| BMC                  | HW18a      | Widen          | N/A             | Marriottsville Road                                       | MD 99                                       | MD 144   |          | 3  | 2     | 4  |                               | 2015                   |         |
| BMC                  | nrs        | Widen          | N/A             | Patuxent Range Road                                       | US 1  | Dorsey Run Road                                      |          |    | 2     | 4  |                               | 2015                   |         |
| BMC                  | HW11b      | Widen          | N/A             | Rodgers Avenue  | US 40                                       | Courthouse Drive                                     |          | 3  | 2     | 4  |                               | 2010                   |         |
| BMC                  | HW13a      | Construct      | N/A             | Sanner Road South   | Johns Hopkins Road                          | MD 216   |          | 3  | 0     | 4  |                               | 2015                   |         |
| BMC                  | HW13b      | Widen          | N/A             | Sanner Road North   | Johns Hopkins Road                          | Pindell School Road                                  |          | 3  | 2     | 4  |                               | 2015                   |         |
| BMC                  | HW14c      | Widen          | N/A             | Snowden River Parkway                                     | MD 100                                      | Broken Land Parkway                                  |          | 3  | 4     | 6  |                               | 2020                   |         |
| <b>Federal Lands</b> |            |                |                 |   |   |  |          |    |       |    |                               |                        |         |
| Fed. Lands           |            | Widen          |                 | Old Mill Rd.  | US 1  | Pole Rd.   | 4        | 2  | 4     | 4  |                               | 2009                   |         |
| Fed. Lands           |            | Construct      |                 | Old Mill Rd.  | Pole Rd.                                    | Telegraph Rd.  | 0        | 0  | 4     | 4  |                               | 2009                   |         |
| Fed. Lands           |            | Study to Close |                 | US 29 and VA 234 within Manassas National Battlefield     |   |  | 2        | 0  | 2     | 0  |                               | not coded              |         |
| Fed. Lands           |            | Study          |                 | Manassas National Battlefield Bypass (segment 1)          | US 29 (near VA 621)                         | VA 234 (north of Manassas National Battlefield Park) | 0        | 3  | 0     | 4  |                               | not coded              |         |
| Fed. Lands           |            | Study          |                 | VA 234 - Manassas National Battlefield Bypass (segment 2) | north of Manassas National Battlefield Park | east of VA 705                                       | 4        | 3  | 2     | 4  |                               | not coded              |         |
| <b>Virginia</b>      |            |                |                 |   |   |  |          |    |       |    |                               |                        |         |
| <b>VDOT Freeway</b>  |            |                |                 |   |   |  |          |    |       |    |                               |                        |         |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.     | Environ. Review | Facility  | From                              | To                                  | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-------------|-----------------|---|-----------------------------------|-------------------------------------|----------|----|-------|-----|-------------------------------|------------------------|---------|
|        |            |             |                 |   |                                   |                                     | from     | to | from  | to  |                               |                        |         |
| VDOT   | VI1w       | Widen       | CE-1            | I-66 HOV during peak  | US 15 (includes intch. reconst.)  | US 29 (Gainesville)                 | 1        | 1  | 4     | 6   | No                            | 2015                   | No      |
| VDOT   | VI1z       | Reconstruct | EA/FONSI        | I-66 Interchange  | @ US 29 (Gainesville)             |                                     | 1        | 1  | -     | -   | No                            | 2017                   | Yes     |
| VDOT   | VI1c       | Widen       | CE-4            | I-66 HOV during peak  | VA 234 (Prince Wm. Pkwy)          | VA 234 Business (Sudley Rd.)        | 1        | 1  | 4     | 8   | completed                     | 2006                   | Yes     |
| VDOT   | VI1ca      | Widen       | CE-4            | I-66 HOV during peak  | US 29 (Gainesville)               | VA 234 (Prince William Parkway)     | 1        | 1  | 4     | 8   | yes                           | 2010                   | Yes     |
| VDOT   | VI1aa      | Reconstruct | Pending         | I-66 Access improvements and flyover  | @ I-495 (Capital Beltway)         |                                     | 1        | 1  | -     | -   | No                            |                        | Yes     |
| VDOT   | VI1ab      | Reconstruct |                 | I-66 Interchange  | @ I-495 (Capital Beltway)         |                                     | 1        | 1  | -     | -   | No                            | 2013                   | Yes     |
| VDOT   |            | Study       | Pending         | I-66 Preliminary Engineering EIS  | US 15 (@ Haymarket)               | I-495 (Capital Beltway)             | 1        | 1  | 4/6   | 6/8 | No                            | not coded              | Yes     |
| VDOT   | VI1l       | Study       | PCE-1           | I-66 ramp   | EB on-ramp from US 29 (Arlington) |                                     | 1        | 1  | -     | -   | no                            | not coded              | No      |
| VDOT   | VI1ae      | Reconstruct | Pending         | I-66 WB Operational/ Spot Improvements- extend acceleration/ deceleration lanes | Fairfax Dr.                       | Sycamore St.                        | 1        | 1  | 2     | 3   | no                            | 2013                   | Yes     |
| VDOT   | VI1af      | Reconstruct | Pending         | I-66 WB Operational/ Spot Improvements- extend acceleration/ deceleration lanes | Washington Blvd.                  | Dulles Airport Access Rd. connector | 1        | 1  | 3     | 4   | no                            | 2013                   | Yes     |
| VDOT   | VI1ag      | Reconstruct | Pending         | I-66 WB Operational/ Spot Improvements- extend acceleration/ deceleration lanes | Lee Hwy. / Spout Run              | Glebe Rd.                           | 1        | 1  | 2     | 3   | no                            | 2013                   | Yes     |

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| Agency | Project ID | Improv.           | Environ. Review | Facility                                  | From                                      | To   | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-------------------|-----------------|---|---|--|----------|----|-------|-----|-------------------------------|------------------------|---------|
|        |            |                   |                 |   |   |  | from     | to | from  | to  |                               |                        |         |
| VDOT   | VI2ka      | Widen             | SEIS-2          | I-95 (Wilson Bridge and approaches)       | VA 241 (Telegraph Rd.)                    | US 1                                       | 1        | 1  | 6     | 12  | yes                           | 2011                   | Yes     |
| VDOT   | VI2k       | Widen             | SEIS-2          | I-95 (Wilson Bridge and approaches)       | US 1                                      | MD 210                                     | 1        | 1  | 6     | 12  | yes                           | 2009                   | Yes     |
| VDOT   | VI2ac      | Reconstruct       | Pending         | I-95 Interchange                          | @ VA 613 (Van Dorn Street)                |  | 1        | 1  | -     | -   | No                            | 2015                   | No      |
| VDOT   | VI2p       | Widen             | CE-1            | I-95 (provide 4th lane)                   | Newington                                 | VA 123                                     | 1        | 1  | 6     | 8   | No                            | 2010                   | Yes     |
| VDOT   | VI2ab      | Reconstruct       | Pending         | I-95 Interchange                          | @ VA 642 (Lorton Road)                    |  | 1        | 1  | -     | -   | No                            | 2010                   | No      |
| VDOT   | VI2d       | Construct         | CE-4            | I-95 Interchange                          | @ VA 7900 (Franconia-Springfield Parkway) | LOV Access to & from West/from & to North  | -        | 1  | -     | -   | No                            | 2015                   | Yes     |
| VDOT   | VI2r       | Widen / Construct | Pending         | I-395/I-95 HOV/ BUS/ HOT Lanes            | Eads St.                                  | VA 234 (Dumfries Rd.)                      | 1        | 1  | 2     | 3   | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct         | Pending         | I-395/I-95 HOV/ BUS/ HOT Lanes Transition | VA 234                                    | VA 610 (Garrisonville Rd.) in Stafford Co. | 1        | 1  |       | 2/1 | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Widen             | Pending         | I 95: HOV / Bus / HOT Ramp:               | NB HOV/Bus/HOT lanes                      | Eads Street                                | 1        | 1  | 1     | 2   | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Widen             | Pending         | I 95: HOV / Bus / HOT Ramp:               | Eads Street                               | SB HOV/Bus/HOT Lanes                       | 1        | 1  | 1     | 2   | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Remove            | Pending         | I 95: HOV / Bus / HOT Ramp:               | SB Express to SB Gen. use lanes           | Between S Hayes St. & Washington Blvd.     | 1        | -  | 1     | 0   | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct         | Pending         | I 95: HOV / Bus / HOT Ramp:               | NB HOV/Bus/HOT Lanes                      | Shirlington Circle                         | -        | 1  | 0     | 1   | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct         | Pending         | I 95: HOV / Bus / HOT Ramp:               | Shirlington Circle                        | SB HOV/Bus/HOT Lanes                       | -        | 1  | 0     | 1   | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct         | Pending         | I 95 : HOV / Bus / HOT Bus Only Ramp:     | NB HOV/Bus/HOT Lanes                      | Seminary Road (bus only)                   | -        | 1  | 0     | 1   | No                            | 2010                   | Yes     |

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# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.   | Environ. Review | Facility                    | From   | To   | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|-----------------------------|--|--|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |           |                 |                             |  |  | from     | to | from  | to |                               |                        |         |
| VDOT   | VI2r       | Construct | Pending         | I 95: HOV / Bus / HOT Ramp: | Seminary Road (bus only)   | SB HOV/Bus/HOT Lanes   | -        | 1  | 0     | 1  | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct | Pending         | I 95: HOV / Bus / HOT Ramp: | NB HOV/Bus/HOT to Gen. use lanes                                 | Between VA 236 (Duke St.) and VA 648 (Edsall Rd.)            | -        | 1  | 0     | 1  | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct | Pending         | I 95: HOV / Bus / HOT Ramp: | VA 7100 (Fairfax Co. Pkwy.)                                      | SB HOV/Bus/HOT Lanes   | -        | 1  | 0     | 1  | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Delete    | Pending         | I 95: HOV / Bus / HOT Ramp: | SB HOV/Bus/HOT to Gen. use lanes                                 | Between VA 7100 (Fairfax Co. Pkwy.) and VA 638 (Pohick Rd.)  | 1        | -  | 1     | 0  | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct | Pending         | I 95: HOV / Bus / HOT Ramp: | NB HOT lanes to new bus station, back to NB HOT lanes (bus only) | Between VA 7100 (Fairfax Co. Pkwy.) and VA 642 (Lorton Rd.)  | -        | 1  | 0     | 1  | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct | Pending         | I 95: HOV / Bus / HOT Ramp: | SB HOT lanes to new bus station, back to SB HOT lanes (bus only) | Between VA 7100 (Fairfax Co. Pkwy.) and VA 642 (Lorton Rd.)  | -        | 1  | 0     | 1  | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct | Pending         | I 95: HOV / Bus / HOT Ramp: | NB HOV/Bus/HOT to Gen. use lanes                                 | Between VA 7100 (Fairfax Co. Pkwy.) and VA 642 (Lorton Rd.)  | -        | 1  | 0     | 1  | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct | Pending         | I 95: HOV / Bus / HOT Ramp: | SB HOV/Bus/HOT to Gen. use lanes                                 | Between VA 123 (Gordon Rd.) & VA 3000 (Prince William Pkwy.) | -        | 1  | 0     | 1  | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct | Pending         | I 95: HOV / Bus / HOT Ramp: | NB HOV/Bus/HOT to Gen. use lanes                                 | Between VA 123 (Gordon Rd.) & VA 3000 (Prince William Pkwy.) | -        | 1  | 0     | 1  | No                            | 2010                   | Yes     |
| VDOT   | VI2r       | Construct | Pending         | I 95: HOV / Bus / HOT Ramp: | NB HOV/Bus/HOT to Gen. use lanes                                 | Between VA 610 (Cardinal Rd.) & VA 234 (Dumfries Rd.)        | -        | 1  | 0     | 1  | No                            | 2010                   | Yes     |

## Appendix-A

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# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.     | Environ. Review | Facility   | From   | To                             | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-------------|-----------------|--|--|--------------------------------|----------|----|-------|-----|-------------------------------|------------------------|---------|
|        |            |             |                 |  |  |                                | from     | to | from  | to  |                               |                        |         |
| VDOT   | VI2c       | Reconstruct | approved        | I-95/395/495 Interchange   |  |                                | 1        | 1  | -     | -   | Yes                           | 2008                   | Yes     |
| VDOT   | VI2ca      | Construct   | approved        | I-495 access ramps (formerly Phase VIII of I-95/394/495 Interchange) | I-95/395/495 interchange to/from I-495 HOV lanes                                     |                                | 1        | 1  | -     | -   | No                            | 2013                   | Yes     |
| VDOT   | VI4i       | Construct   | Pending         | I-495 HOT (peak)   | I-395  | S. of VA 193 (Georgetown Pike) | 1        | 1  | 8     | 8+4 | No                            | 2013                   | Yes     |
| VDOT   |            | Construct   | Pending         | I-495 HOT Lanes Interchange  | Provides SB to WB, SB to EB, EB to SB, & NB to WB HOV to HOT or HOT to HOV movements | @ VA 267 (Dulles Toll Road)    | 1        | 1  | -     | -   | No                            | 2013                   | Yes     |
| VDOT   |            | Construct   | Pending         | I-495 HOT Lanes Interchange  | All movements  | @ VA 123 (Chain Bridge Road)   | 1        | 1  | -     | -   | No                            | 2013                   | Yes     |
| VDOT   |            | Construct   | Pending         | I-495 HOT Lanes Interchange  | Provides SB to WB, WB to SB, EB to SB, NB to WB, & EB to NB HOV to HOT               | @ I-66 HOV Lanes               | 1        | 1  | -     | -   | No                            | 2013                   | Yes     |
| VDOT   |            | Construct   | Pending         | I-495 HOT Lanes Interchange  | HOT movements to and from South Only   | @ US 29                        | 1        | 1  | -     | -   | No                            | 2013                   | Yes     |
| VDOT   |            | Construct   | Pending         | I-495 HOT Lanes Interchange  | All movements  | @ VA 620 (Braddock Road)       | 1        | 1  | -     | -   | No                            | 2013                   | Yes     |
| VDOT   | VI4k       | Construct   | EA-2            | I-495 HOV (peak)   | S. of VA 193 (Georgetown Pike)   | Am. Leg. Bridge                | 1        | 1  | 8     | 10  | No                            | 2015                   | No      |
| VDOT   |            | Reconstruct | N/A             | VA 267 (Dulles Toll Road) Interchange                                | @ VA 674 (Hunter Mill Road)  |                                | -        | -  | -     | -   | No                            | 2012                   | No      |
| VDOT   | VP15g      | Widen       | N/A             | VA 267 (Dulles Toll Road) Ramps                                      | @ I-495 Interchange  |                                | 1        | 1  | -     | -   | completed                     | 2005                   | No      |
| VDOT   | MW1        | Widen       | Pending         | Dulles Airport Access Road   | Dulles Airport   | VA 123                         | 1        | 1  | 4     | 6   | No                            | 2010                   | No      |
| VDOT   | VP21d      | Widen       | N/A             | Dulles Greenway  | Goose Creek Bridge   | VA 901 (Claiborne Parkway)     | 1        | 1  | 4     | 6   | No                            | 2005                   | No      |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP

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# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency              | Project ID | Improv.     | Environ. Review | Facility                         | From                             | To                                    | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|---------------------|------------|-------------|-----------------|----------------------------------|----------------------------------|---------------------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|                     |            |             |                 |                                  |                                  |                                       | from     | to | from  | to |                               |                        |         |
| VDOT                | VP21e      | Widen       | N/A             | Dulles Greenway                  | VA7/15 Bypass                    | Goose Creek Bridge                    | 1        | 1  | 4     | 6  | No                            | 2007                   | No      |
| VDOT                | VP21b      | Construct   | N/A             | Dulles Greenway Interchanges     | @ VA 653 & @ Battlefield Parkway |                                       | 1        | 1  | -     | -  | No                            | 2007                   | No      |
| <b>VDOT Primary</b> |            |             |                 |                                  |                                  |                                       |          |    |       |    |                               |                        |         |
| VDOT                | VP26       | Study       | N/A             | Techway                          | Dulles Toll Road                 | MD State Line                         | -        | -  | -     | -  | No                            | not coded              | Yes     |
| VDOT                | VP1a       | Widen       | Pending         | US 1                             | Stafford County Line             | VA 235 South                          | 2        | 2  | 4     | 6  | No                            | 2015                   | No      |
| VDOT                | VP1u       | Widen       | Pending         | US 1                             | VA 235 South                     | VA 235 North                          | 2        | 2  | 4     | 6  | No                            | 2015                   | No      |
| VDOT                | VP1t       | Widen       | Pending         | US 1 (bus/right-turn lanes)      | VA 235 North                     | SCL Alexandria (I-95 Capital Beltway) | 2        | 2  | 6     | 8  | No                            | 2025                   | No      |
| VDOT                |            | Widen       | Pending         | US 1                             | @ VA 619 (Joplin Road)           | USMC HERITAGE CENTER ACCESS           | 2        | 2  | 4     | 5  | complete                      | 2006                   | Yes     |
| VDOT                | VP1f       | Widen       | Approved        | US 1 (3la. NB - 4 la. SB)        | Lorton Rd.                       | Telegraph Rd.                         | 2        | 2  | 4     | 6  | complete                      | 2005                   | Yes     |
| VDOT                | VP1fb      | Widen       | Approved        | US 1 (as part of VP1f)           | Armistead Rd.                    | Lorton Rd.                            | 2        | 2  | 4     | 6  | complete                      | 2005                   | No      |
| VDOT                | VP1o       | Widen       | Approved        | US 1 (Neabsco Creek Bridge)      | S. Cardinal Dr.                  | North Blackburn Rd.                   | 2        | 2  | 4     | 6  | No                            | 2009                   | yes     |
| VDOT                | VP1p       | Widen       | Pending         | US 1 (part of 1/123 interchange) | Occoquan Rd.                     | Annapolis Way                         | 2        | 2  | 4     | 6  | No                            | 2012                   | No      |
| VDOT                | nrs        | Reconstruct | Pending         | US 1 Interchange                 | @ Russell Road                   |                                       | 1        | 1  | -     | -  | No                            | 2010                   | No      |
| VDOT                | VP2s       | Widen / Up  | Pending         | VA 7                             | Route 9                          | Market Street (Leesburg)              | 2        | 1  | 4     | 6  | No                            | 2015                   | Yes     |
| VDOT                | VP2j       | Widen       | Pending         | VA 7 Bypass                      | VA 7 West                        | VA 7/US 15 East                       | 5        | 1  | 4     | 6  | No                            | 2015                   | No      |

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.     | Environ. Review | Facility                      | From  | To                  | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-------------|-----------------|-------------------------------|---|---------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |             |                 |                               |   |                     | from     | to | from  | to |                               |                        |         |
| VDOT   | VP2g       | Upgrade     | Pending         | VA 7 (new interchanges)       | VA 7/15 (Leesburg Bypass)                             | VA 28               | 2        | 1  | 6     | 6  | No                            | 2015                   | No      |
| VDOT   | VP2ma      | Widen       | Pending         | VA 7                          | Rolling Holly Drive                                   | Reston Ave.         | 2        | 2  | 4     | 6  | No                            | 2011                   | Yes     |
| VDOT   | VP2m       | Widen       | Pending         | VA 7                          | Reston Ave.   | Tyco Rd.            | 2        | 2  | 4     | 6  | No                            | 2020                   | Yes     |
| VDOT   | VP2L       | Widen       | Pending         | VA 7                          | Dulles Toll Rd.                                       | I-495               | 2        | 2  | 6     | 8  | No                            | 2013                   | No      |
| VDOT   | VP2b       | Widen       | Pending         | VA 7                          | Seven Corners   | Bailey's Crossroads | 2        | 2  | 4     | 6  | No                            | 2020                   | No      |
| VDOT   | nrs        | Reconstruct | Pending         | VA 7                          | @ VA 606 (Baron Cameron Ave.)                         |                     | -        | -  | -     | -  | No                            | 2005                   | Yes     |
| VDOT   | VP2t       | Construct   | Pending         | VA 7 interchange              | @ Claiborne Pkwy./West Spine Rd.                      |                     | -        | -  | -     | -  | No                            | 2006                   | No      |
| VDOT   |            | Construct   | Pending         | VA 7 interchange              | @ Ashburn Villiage Blvd.                              |                     | -        | -  | -     | -  | No                            | 2008                   | Yes     |
| VDOT   |            | Construct   | Pending         | VA 7 interchange              | @ Loudoun County Parkway @ VA 711 (Williams Gap Road) |                     | -        | -  | -     | -  | No                            | 2010                   | No      |
| VDOT   | nrs        | Reconstruct | Pending         | VA 7                          |   |                     | 2        | 2  | 4     | 4  | No                            | 2006                   | Yes     |
| VDOT   | VP3b       | Study       | Pending         | VA 9                          | West Virginia State Line                              | VA 7                | 2        | 2  | 2     | 4  | No                            | not coded              | No      |
| VDOT   | nrs        | Reconstruct | Pending         | VA 9                          | @ VA 662 (Clarks Gap Road)                            |                     | 3        | 3  | -     | -  | No                            | 2006                   | Yes     |
| VDOT   | VP4e       | Widen       | Pending         | US 15 (James Madison Highway) | US 29   | I-66                | 2        | 2  | 2     | 4  | No                            | 2020                   | No      |
| VDOT   | VP4fa      | Widen       | N/A             | US 15 (James Madison Highway) | I-66  | VA 234              | 2        | 2  | 2     | 4  | No                            | 2008                   | Yes     |
| VDOT   | VP4fb      | Widen       | N/A             | US 15 (James Madison Highway) | VA 234  | Loudoun County Line | 2        | 2  | 2     | 4  | No                            | 2020                   | No      |

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.       | Environ. Review | Facility                         | From                             | To                                 | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|---------------|-----------------|----------------------------------|----------------------------------|------------------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |               |                 |                                  |                                  |                                    | from     | to | from  | to |                               |                        |         |
| VDOT   | nrs        | Reconstruct   | N/A             | US 15 (James Monroe Highway)     | Whites Ferry Rd.                 | Maryland State Line                | 3        | 3  | 2     | 2  | No                            | 2008                   | Yes     |
| VDOT   | nrs        | Reconstruct   | Pending         | VA 27 Interchange                | @ VA 244 (Columbia Pike)         |                                    | -        | -  | -     | -  | No                            | 2011                   | No      |
| VDOT   | VP6h       | Widen         | Pending         | VA 28                            | Fauquier County Line             | VA 652 (Fitzwater Dr.)             | 3        | 3  | 2     | 4  | No                            | 2020                   | No      |
| VDOT   | VP6ka      | Widen         | Pending         | VA 28                            | VA 652 (Fitzwater Dr.)           | VA 215 (Vint Hill Road)            | 3        | 3  | 2     | 4  | No                            | 2013                   | No      |
| VDOT   | VP6k       | Upgrade/Widen | EA complete     | VA 28                            | VA 215 (Vint Hill Road)          | VA 234 Bypass                      | 3        | 2  | 4     | 6  | No                            | 2012                   | No      |
| VDOT   | nrs        | Recons/Widen  | Pending         | VA 28                            | Bridge over Broad Run            | Replace / Widen to ultimate width  | 3        | 3  | 2     | 6  | Yes                           | 2007                   | Yes     |
| VDOT   | VP6b       | Widen         | Pending         | VA 28 (Centreville Road)         | N. City Limits of Manassas Park  | Old Centreville Rd.                | 2        | 2  | 4     | 6  | No                            | 2025                   | No      |
| VDOT   | VP6e       | Widen/Upgrade | N/A             | VA 28 PPTA (Phase II)            | I-66                             | VA 7                               | 2        | 1  | 6     | 8  | No                            | 2010                   | No      |
| VDOT   | VP6ea      | Widen/Upgrade | N/A             | VA 28                            | Dulles Toll Rd.                  | VA 606 (Old Ox Rd.)                | 2        | 1  | 6     | 6  | No                            | 2008                   | No      |
| VDOT   | VP6eb      | Construct     |                 | VA 28 Interchange                | @ VA 209 (Innovation Ave.)       |                                    | -        | -  | -     | -  | No                            | 2007                   | No      |
| VDOT   |            | Reconst.      |                 | VA 28 Interchange                | @ New Braddock Rd.               |                                    | -        | -  | -     | -  | No                            | 2008                   | Yes     |
| VDOT   | VP6v       | Construct     | N/A             | VA 28 PPTA (Phase I) Interchange | @ VA 668 (McLearen Road)         | SASM Interchange to VA 668 upgrade | 2        | 1  | 6     | 6  | No                            | 2006                   | Yes     |
| VDOT   | VP6w       | Construct     | N/A             | VA 28 PPTA (Phase I) Interchange | @ Sterling Park                  | VA 606 to VA 625 upgrade           | 2        | 1  | 6     | 6  | Yes                           | 2007                   | Yes     |
| VDOT   | VP6x       | Construct     | N/A             | VA 28 PPTA (Phase I) Interchange | @ VA 625 (Church & Waxpool Rds.) |                                    | 2        | 2  | 6     | 6  | Yes                           | 2006                   | Yes     |
| VDOT   | VP6y       | Construct     | N/A             | VA 28 PPTA Interchange           | @Nokes Boulevard                 |                                    | -        | -  | -     | -  | No                            | 2009                   | No      |

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# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.     | Environ. Review | Facility            | From                                  | To   | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-------------|-----------------|---------------------|---------------------------------------|--|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |             |                 |                     |                                       |  | from     | to | from  | to |                               |                        |         |
| VDOT   |            | Reconstruct |                 | VA 28 Intersection  | @ Braddock Rd./ Walney Rd.            | eliminate left turns from EB Braddock to NB VA 28, eliminate left turns from VA 28 SB to Walney, and from WB Walney to SB VA 28, eliminate through movement from Braddock to/from Walney |          |    |       |    | No                            | 2008                   | No      |
| VDOT   | VI1bb      | Remove      |                 | VA 28 SB ramp       | at I-66                               | eliminate left turn movement- EB I-66 off-ramp to SB VA 28   |          |    |       |    | No                            | 2008                   |         |
| VDOT   | VI1cc      | Remove      |                 | VA 28 NB ramp       | at I-66                               | eliminate turn movement- NB VA 28 to WB I-66   |          |    |       |    | No                            | 2008                   |         |
| VDOT   | VP7ae      | Construct   | Pending         | US 29 Interchange   | @ VA 55/VA 619                        |  | -        | -  | -     | -  | No                            | 2016                   | Yes     |
| VDOT   | VP7r       | Widen       | Pending         | US 29               | Virginia Oaks Drive                   | I-66   | 2        | 5  | 4     | 6  | No                            | 2016                   | Yes     |
| VDOT   | VP7s       | Widen       | Pending         | US 29 (add NB lane) | I-66                                  | Entrance to Conway Robinson MSF  | 3        | 2  | 4     | 5  | No                            | 2016                   | Yes     |
| VDOT   | VP7ad      | Widen       | Pending         | US 29               | US 50                                 | I-66   | 2        | 2  | 4     | 6  | No                            | 2010                   | No      |
| VDOT   | VP7aa      | Widen       | Pending         | US 29               | ECL City of Fairfax (vic. Nutley St.) | Espana Court   | 2        | 2  | 4     | 6  | No                            | 2020                   | No      |
| VDOT   | VP7ab      | Widen       | Pending         | US 29               | Espana Court                          | I-495  | 2        | 2  | 4     | 6  | No                            | 2015                   | No      |
| VDOT   | VP7n       | Study       | Pending         | US 29               | Pleasant Valley Drive                 | VA 28  | 2        | 2  | 4     | 6  | No                            | not coded              | No      |
| VDOT   | VP7g       | Study       | Pending         | US 29               | Fauquier County Line                  | I-66 (Gainesville)   | 2        | 2  | 4     | 6  | No                            | not coded              | No      |

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.     | Environ. Review | Facility                | From                                       | To                          | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-------------|-----------------|-------------------------|--|-----------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |             |                 |                         |  |                             | from     | to | from  | to |                               |                        |         |
| VDOT   | VSP57a     | Construct   | Pending         | Route 29 (Parallel)     | US 29 (Lee Highway) (near US 15)           | Sommerset Crossing Drive    | 0        | 4  | 0     | 4  | No                            | 2025                   | No      |
| VDOT   | nrs        | Construct   | Pending         | US 50 Traffic Circle    | @ US 15 (Gilbert's Corner)                 |                             | -        | -  | -     | -  | No                            | 2010                   | Yes     |
| VDOT   | VP8q       | Widen       | Pending         | US 50                   | VA 659 Relocated                           | VA 742 (Poland Rd.)         | 2        | 2  | 4/5   | 6  | No                            | 2010                   | No      |
| VDOT   | VP8c       | Widen       | Pending         | US 50                   | VA 742 (Poland Rd.)                        | VA 609 (Pleasant Valley)    | 2        | 2  | 4/5   | 6  | No                            | 2012                   | Yes     |
| VDOT   | VP8r       | Widen       | Pending         | US 50                   | VA 609 (Pleasant Valley)                   | VA 661 (Lee Rd.)            | 2        | 2  | 4/5   | 6  | No                            | 2012                   | Yes     |
| VDOT   | nrs        | Reconstruct | Pending         | US 50                   | Waples Mill Rd (intersection Improvements) | 2nd EB to NB left turn lane | 0        | 0  | 0     | 0  | complete                      | 2005                   | No      |
| VDOT   | VP8n       | Widen       | Pending         | US 50 (WBL)             | I-66                                       | Waples Mill Road            | 2        | 2  | 2     | 3  | No                            | 2020                   | No      |
| VDOT   | VP8g       | Widen       | Pending         | US 50                   | I-66                                       | WCL Fairfax City            | 2        | 2  | 6     | 8  | No                            | 2020                   | No      |
| VDOT   | VP8h       | Widen       | Pending         | US 50                   | ECL City of Fairfax                        | Arlington County Line       | 2        | 2  | 4     | 6  | No                            | 2020                   | No      |
| VDOT   | AR2e       | Reconstruct | Pending         | US 50 (Arlington Blvd.) | ARC/FFX Line                               | Washington Blvd.            | 2        | 2  | 6     | 6  | No                            | 2015                   | No      |
| VDOT   | AR2f       | Reconstruct | Pending         | US 50 (Arlington Blvd.) | Pershing Dr.                               | Ft. Myer Dr.                | 2        | 2  | 6     | 6  | No                            | 2015                   | No      |
| VDOT   | nrs        | Reconstruct | Pending         | US 50 Interchange       | @Jaguar Trail                              |                             | 2        | 2  | -     | -  | No                            | 2007                   | Yes     |
| VDOT   | nrs        | Reconstruct | Pending         | US 50 Interchange       | @ VA 120 (Glebe Road)                      |                             | -        | -  | -     | -  | No                            | 2010                   | No      |
| VDOT   | nrs        | Reconstruct | CE-1            | US 50 Interchange       | @ VA 27 (Washington Blvd.)                 |                             | -        | -  | -     | -  | No                            | 2015                   | No      |
| VDOT   | VP8o       | Reconstruct | Pending         | US 50 Interchange       | @ Courthouse Road / 10th Street            |                             | -        | -  | -     | -  | No                            | 2010                   | Yes     |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP

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# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.     | Environ. Review | Facility                      | From                     | To                       | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-------------|-----------------|-------------------------------|--------------------------|--------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |             |                 |                               |                          |                          | from     | to | from  | to |                               |                        |         |
| VDOT   | nrs        | Reconstruct | Pending         | US 50 Interchange             | @ VA 110 (N. Scott St.)  |                          | 1        | 1  | -     | -  | No                            | 2020                   | No      |
| VDOT   | VP23a      | Widen       | Pending         | VA 55 (John Marshall Highway) | Gainesville UM Church    | US 29 @ VA 619           | 3        | 3  | 2     | 4  | No                            | 2016                   | Yes     |
| VDOT   | nrs        | Reconstruct | Approved        | VA 120 (Glebe Road)           | @ VA 244 (Columbia Pike) |                          | -        | -  | -     | -  | No                            | 2004                   | Yes     |
| VDOT   | nrs        | Reconstruct | Approved        | VA 120 (Glebe Road)           | @ Arlington Ridge Rd.    | left turn lanes          | -        | -  | -     | -  | No                            | 2005                   | Yes     |
| VDOT   | nrs        | Reconstruct | Pending         | VA 120 (Glebe Road)           | Military Rd.             | DC line                  | 2        | 2  | 2     | 2  | No                            | 2020                   | No      |
| VDOT   | nrs        | Reconstruct | N/A             | VA 120 (Glebe Road)           | Quebec St.               | 2nd St.                  | 2        | 2  | -     | -  | No                            | 2006                   | Yes     |
| VDOT   | nrs        | Reconstruct | Pending         | VA 120 (Glebe Road)           | W. Glebe Rd.             | 24th Rd.                 | 2        | 2  | 4     | 4  | No                            | 2010                   | No      |
| VDOT   | VP10j      | Widen       | Pending         | VA 123                        | VA 7                     | I-495                    | 2        | 2  | 6     | 8  | complete                      |                        | No      |
| VDOT   | VP10ob     | Widen       | Pending         | VA 123 (Dolley Madison Blvd.) | DTR Ramps                | VA 694 (Great Falls St.) | 2        | 2  | 4     | 6  | complete                      | 2006                   | No      |
| VDOT   | nrs        | Construct   | Approved        | VA 123 Interchange            | @ US 1                   |                          | -        | -  | -     | -  | No                            | 2012                   | Yes     |
| VDOT   | VP10g      | Widen       | Pending         | VA 123                        | Route 1                  | Horner Road              | 2        | 2  | 4     | 6  | No                            | 2008                   | No      |
| VDOT   | VP10s      | Widen       | Approved        | VA 123                        | Horner Road              | Devil's Reach Road       | 2        | 2  | 4     | 6  | No                            | 2015                   | No      |
| VDOT   | VP10ea     | Widen       | Pending         | VA 123 (Ox Road)              | VA 722 North             | Hooes Rd.                | 2        | 2  | 2     | 6  | Yes                           | 2006                   | Yes     |
| VDOT   | VP10h      | Widen       | Approved        | VA 123 (Ox Road)              | Hooes Rd.                | Fairfax Co. Parkway      | 2        | 2  | 4     | 6  | No                            | 2015                   | No      |
| VDOT   | VP10f      | Widen       | Pending         | VA 123 (Ox Road)              | Fairfax Co. Parkway      | Burke Center Parkway     | 2        | 2  | 4     | 6  | No                            | 2015                   | No      |



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| Agency | Project ID | Improv.        | Environ. Review | Facility                                 | From  | To                      | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|----------------|-----------------|--|---|-------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |                |                 |  |   |                         | from     | to | from  | to |                               |                        |         |
| VDOT   | VP10r      | Widen          | Pending         | VA 123                                   | Burke Center Parkway                                  | Braddock Road           | 2        | 2  | 4     | 6  | No                            | 2020                   | No      |
| VDOT   | nrs        | Reconstruct    | Pending         | VA 123                                   | @ VA 620 (Braddock Road)                              |                         | 2        | 2  | -     | -  | complete                      | 2005                   | Yes     |
| VDOT   | VP10l      | Widen          | Pending         | VA 123 (Occoquan River Bridge)           | South Approach  | VA 722 North            | 2        | 2  | 2     | 6  | yes                           | 2007                   | Yes     |
| VDOT   | nrs        | Reconstruct    | Pending         | VA 193                                   | @ Riverbend Road & 0.5 mi. west of VA 28 intersection | @ Nethercliff Hall Road | 3        | 3  | 2     | 2  | Yes                           | 2007                   | Yes     |
| VDOT   | VP24a      | Relocate/Widen | Approved        | VA 215                                   |   | VA 28                   | 4        | 3  | 2     | 4  | No                            | 2011                   | No      |
| VDOT   | nrs        | Construct      | Pending         | VA 234 Interchange                       | @ US 1  |                         | -        | 1  | -     | -  | No                            | 2015                   | Yes     |
| VDOT   | VP12d      | Widen/Upgr     | Pending         | VA 234 (Dumfries Road)                   | I-95  | US 1                    | 2        | 5  | 2     | 6  | No                            | 2011                   | No      |
| VDOT   | VP12b      | Widen          | Approved        | VA 234 (Dumfries Road)                   | Country Club Dr.                                      | Eclipse Dr.             | 2        | 2  | 2     | 4  | complete                      | 2007                   | Yes     |
| VDOT   | VP12a      | Widen          | Pending         | VA 234 (Dumfries Road)                   | Eclipse Dr.   | Snowfall Dr.            | 2        | 2  | 2     | 4  | complete                      | 2006                   | no      |
| VDOT   | VP12l      | Widen          | Approved        | VA 234 (Dumfries Road)                   | VA 234 Bypass (at Limstrong, VA 649)                  | SCL of Manassas         |          | 2  | 2     | 4  | No                            | 2010                   | No      |
| VDOT   | VP12k      | Widen/upgr     | Approved        | VA 234 (Manassas Bypass)                 | VA 234 S. of Manassas                                 | I-66                    | 5        | 1  | 4     | 6  | No                            | 2020                   | No      |
| VDOT   | VP12o      | Construct      | Pending         | Tri-County Parkway (CTB alignment C & D) | I-66  | Loudoun County Line     | 0        | 2  | 0     | 4  | No                            | 2012                   | No      |
| VDOT   | VP13a      | Widen          | Pending         | VA 236                                   | Pickett Road  | I-395                   | 2        | 2  | 4     | 6  | No                            | 2020                   | No      |
| VDOT   | nrs        | Reconstruct    | Pending         | VA 236 (intersection/spot improvements)  | Pickett Road  | Lake Drive              | 2        | 2  | 4     | 4  | No                            | 2008                   | Yes     |
| VDOT   | nrs        | Reconstruct    | Pending         | VA 236 EB                                | @ VA 620 (Braddock Road)                              |                         | -        | -  | -     | -  | No                            | 2009                   | Yes     |

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| Agency            | Project ID | Improv.     | Environ. Review | Facility                         | From                                | To                              | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|-------------------|------------|-------------|-----------------|----------------------------------|-------------------------------------|---------------------------------|----------|----|-------|-----|-------------------------------|------------------------|---------|
|                   |            |             |                 |                                  |                                     |                                 | from     | to | from  | to  |                               |                        |         |
| VDOT              | nrs        | Reconstruct | Pending         | VA 236 WB                        | @ VA 620 (Braddock Road)            |                                 | -        | -  | -     | -   | No                            | 2009                   | Yes     |
| VDOT              | VP26a      | Construct   | Pending         | VA 28 Bypass                     | VA 234 (Sudley Road) @ Godwin Drive | I-66                            | 0        | 5  | 0     | 6   | No                            | 2015                   | No      |
| VDOT              | VP26b      | Construct   | Pending         | VA 28 Bypass                     | I-66                                | VA 620 (Braddock Road) @ VA 613 | 0        | 2  | 0     | 4   | No                            | 2020                   | No      |
| <b>VDOT Urban</b> |            |             |                 |                                  |                                     |                                 |          |    |       |     |                               |                        |         |
| VDOT              | VU28b      | Construct   | Developer       | Battlefield Parkway              | US 15 south of Leesburg             | Dulles Greenway                 | 0        | 2  | 0     | 4   | No                            | 2005                   | No      |
| VDOT              | VU28c      | Construct   | Developer       | Battlefield Parkway              | Dulles Greenway                     | Sycolin Road                    | 0        | 2  | 0     | 4   | Yes                           | 2007                   | No      |
| VDOT              | VU28d      | Widen/upg   | Pending         | Battlefield Parkway / Lawson Rd. | Sycolin Road                        | Kincaid Boulevard               | 4        | 2  | 2     | 4   | Yes                           | 2007                   | No      |
| VDOT              | VU28da     | Construct   | Approved        | Battlefield Parkway              | Kincaid Boulevard                   | Route 7                         | 0        | 2  | 0     | 4   | No                            | 2008                   | Yes     |
| VDOT              | VU28e      | Construct   | Developer       | Battlefield Parkway              | Route 7                             | Fort Evans Road                 | 0        | 2  | 0     | 4   | No                            | 2005                   | No      |
| VDOT              | VU28f      | Construct   | Pending         | Battlefield Parkway              | Fort Evans Road                     | Edwards Ferry Road              | 0        | 2  | 0     | 4   | Yes                           | 2010                   | No      |
| VDOT              | VU28a      | Study       | Pending         | Battlefield Parkway              | US 15 south of Leesburg             | US 15 Bypass North              | 0        | 2  | 0     | 4/6 | not coded                     | 2010                   | No      |
| VDOT              | VU2b       | Construct   | Approved        | Clermont Ave.                    | Eisenhower Ave.                     | Duke St.                        | -        | 3  | -     | 4   | no                            | 2015                   | Yes     |
| VDOT              | nrs        | Reconstruct |                 | Duke St.                         | Fairfax County Line                 | Washington St.                  | 2        | 2  | 4/6   | 4/6 |                               | 2005                   | No      |
| VDOT              | VU30f      | Widen       | Pending         | East Elden Street                | Herndon Parkway East                | Fairfax County Parkway          | 3        | 3  | 4     | 6   | No                            | 2012                   | No      |
| VDOT              | VU52       | Widen       | Pending         | Eisenhower Ave.                  | Stovall St.                         | Holland Lane                    | 3        | 3  | 4     | 6   | No                            | 2010                   | No      |

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| Agency | Project ID | Improv.   | Environ. Review | Facility                            | From                                | To                           | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|-------------------------------------|-------------------------------------|------------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |           |                 |                                     |                                     |                              | from     | to | from  | to |                               |                        |         |
| VDOT   | nrs        | Construct | Pending         | George Mason Blvd.                  | Univer. Dr @ Armstrong St.          | Univ. Dr. @ Parking Entr.    | 0        | 4  | 0     | 2  | No                            | 2009                   | Yes     |
| VDOT   | VU35b      | Construct | N/A             | Mill Road Extension                 | Telegraph Rd.                       | DMV complex                  | -        | 3  | -     | 2  | No                            | 2010                   | Yes     |
| VDOT   | VU51a      | Construct | Pending         | Potomac Yard Spine Road             | US Route 1                          | Chrystal Dr.                 | 0        | 4  | 0     | 4  | No                            | 2009                   | No      |
| VDOT   | VU26b      | Widen     | Approved        | Richmond Ave.                       | Dumfries Road                       | Nagel St.                    | 3        | 3  | 2     | 4  | complete                      | 2005                   | No      |
| VDOT   | VU30a      | Widen     | Approved        | South Elden Street/Centreville Road | Worldgate Drive                     | Herndon Parkway              | 2        | 2  | 4     | 6  | No                            | 2006                   | Yes     |
| VDOT   | VU10b      | Widen     | Pending         | Spring Street                       | Herndon Parkway East                | Fairfax County Parkway       | 3        | 3  | 4     | 6  | No                            | 2011                   | No      |
| VDOT   | VU33       | Widen     | Pending         | Sycolin Road                        | VA 7/US 15 Bypass                   | SCL of Leesburg              | 3        | 3  | 2     | 4  | No                            | 2007                   | No      |
| VDOT   | VU32       | Widen     | Pending         | US 15 (South King Street)           | Evergreen Mill Road                 | SCL of Leesburg              | 3        | 2  | 2     | 4  | No                            | 2007                   | Yes     |
| VDOT   | nrs        | Construct | Approved        | VA 28 Overpass & Interchg.          | Overpass Norfolk-Southern RR B line | Interchange w/Wellington Rd. | 2        | 2  | 4     | 4  | No                            | 2012                   | Yes     |
| VDOT   | VU40       | Widen     | Pending         | US 29 (Lee Highway)                 | US 50                               | Chain Bridge Road            | 2        | 2  | 4     | 6  | No                            | 2011                   | Yes     |
| VDOT   | VU6b       | Widen     | Approved        | US 29 (Lee Highway)                 | Chain Bridge Road                   | Eaton Place                  | 2        | 2  | 4     | 6  | No                            | 2010                   | Yes     |
| VDOT   | VU29       | Construct | Approved        | VA 123 (Chain Bridge Road)          | US 50                               | I-66                         | 2        | 2  | 5     | 6  | No                            | 2010                   | Yes     |
| VDOT   | VU45       | Widen     | Approved        | VA 234 (Dumfries Road)              | South Corporate Limits              | Hastings Drive               | 3        | 3  | 2     | 4  | No                            | 2011                   | No      |
| VDOT   | nrs        | Widen     | N/A             | VA 234 (Sudley Road) 3rd NB lane    | Dorsey Circle                       | Godwin Dr.                   | 2        | 2  | 4     | 5  | No                            | 2010                   | No      |
| VDOT   | VU48b      | Widen     | Approved        | Wellington Road                     | Godwin Drive                        | VA 28 (Nokesville Road)      | 3        | 3  | 2     | 4  | No                            | 2010                   | Yes     |

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| Agency                            | Project ID | Improv.     | Environ. Review | Facility                      | From                         | To                            | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|-----------------------------------|------------|-------------|-----------------|-------------------------------|------------------------------|-------------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|                                   |            |             |                 |                               |                              |                               | from     | to | from  | to |                               |                        |         |
| <b><i>Arlington Secondary</i></b> |            |             |                 |                               |                              |                               |          |    |       |    |                               |                        |         |
| VDOT                              | AR26       | Widen       | Pending         | N. Pershing Dr.               | George Mason Dr.             | VA 120                        | 3        | 3  | 2     | 4  | No                            | 2012                   | No      |
| VDOT                              | AR28b      | Widen       | N/A             | N. Quincy St.                 | Wilson Blvd.                 | VA 237                        | 3        | 3  | 2     | 3  | No                            | 2007                   | No      |
| VDOT                              | AR5a       | Widen       | Pending         | VA 244 (Columbia Pike)        | Oakland St.                  | Washington Blvd.              | 2        | 2  | 4     | 5  | No                            | 2010                   | No      |
| VDOT                              | AR17a      | Widen       | Pending         | Washington Blvd.              | Wilson                       | Kirkwood                      | 3        | 3  | 3     | 4  | No                            | 2015                   | No      |
| VDOT                              | AR19c      | Reconstruct | Pending         | Wilson Blvd.                  | N. Quincy                    | Washington Blvd.              | 2        | 2  | 4     | 4  | No                            | 2010                   | No      |
| <b><i>Fairfax Secondary</i></b>   |            |             |                 |                               |                              |                               |          |    |       |    |                               |                        |         |
| VDOT                              | FFX2a      | Construct   | Pending         | VA 602 (Reston Pkwy.)         | VA 5320 (Sunrise Valley Dr.) | VA 606 (Baron Cameron Avenue) | 3        | 3  | 4     | 6  | No                            | 2015                   | No      |
| VDOT                              | FFX3c      | Study       | Pending         | Frying Pan Rd.                | VA 28                        | VA 657 (Centreville Rd.)      | 3        | 3  | 2/4   | 6  | No                            | not coded              | Yes     |
| VDOT                              | VSF2c      | Widen       | Pending         | VA 608 (West Ox Road)         | VA 6985 (Ox Trail)           | VA 602 (Lawyers Road)         | 3        | 3  | 2     | 4  | Complete                      | 2006                   | Yes     |
| VDOT                              | VSF2a      | Widen       | Pending         | VA 608 (West Ox Road)         | VA 6558 (Penderbrook Drive)  | VA 6985 (Ox Trail)            | 3        | 3  | 2     | 4  | yes                           | 2008                   | Yes     |
| VDOT                              | FFX4       | Study       | Pending         | VA 609 (Pleasant Valley Road) | US 29                        | US 50                         | 3        | 3  | 2/4   | 4  | No                            | not coded              | No      |
| VDOT                              | VSF4f      | Study       | Pending         | VA 611 (Furnace Road)         | VA 123 (Ox Road)             | VA 642 (Lorton Road)          | 3        | 3  | 2     | 4  | No                            | not coded              | No      |
| VDOT                              | VSF4c      | Widen       | Pending         | VA 611 (Telegraph Road)       | VA 613 (Beulah St.)          | VA 635 (Hayfield Road)        | 3        | 3  | 2     | 4  | No                            | 2020                   | Yes     |
| VDOT                              | VSF4i      | Widen       | Pending         | VA 611 (Telegraph Road)       | VA 635 (Hayfield Road)       | VA 633 (S. Kings Hwy.)        | 3        | 3  | 2     | 4  | No                            | 2014                   | Yes     |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP

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|--------|------------|-----------|-----------------|------------------------------|----------------------------------|---|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |           |                 |                              |                                  |   | from     | to | from  | to |                               |                        |         |
| VDOT   | VSF4h      | Widen     | Pending         | VA 611 (Telegraph Road)      | VA 633 (S. Kings Hwy.)           | VA 644 (Franconia Road)                         | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | FFX5c      | Study     | Approved        | VA 613 (S. Van Dorn St.)     | VA 644                           | Kingstowne Village Pkwy.                        | 3        | 3  | 4     | 6  | No                            | not coded              | No      |
| VDOT   | VSF15b     | Construct | Pending         | VA 613 (Van Dorn Street)     | @ VA 644 (Franconia Road)        | interchange                                     | 0        | 0  | 0     | 0  | No                            | 2013                   | Yes     |
| VDOT   | VSF7       | Widen     | Pending         | VA 618 (Woodlawn Road)       | US 1 (Richmond Highway)          | VA 613 (Beulah Road)                            | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | VSF8g      | Widen     | Pending         | VA 620 (Braddock Rd)         | VA 7100 (Fairfax Co. Pkwy.)      | VA 123 (Ox Road)                                | 3        | 3  | 4     | 6  | No                            | 2015                   | No      |
| VDOT   | VSF8l      | Study     | Pending         | VA 620 (Braddock Road)       | VA 609 (Pleasant Valley Road)    | Flat Lick Branch                                | 4        | 3  | 2     | 2  | No                            | not coded              | No      |
| VDOT   | VSF8d      | Study     | Pending         | VA 620 (Braddock Road)       | VA 645 (Burke Lake Road)         | VA 651 (Guinea Road)                            | 3        | 3  | 4     | 6  | No                            | not coded              | No      |
| VDOT   | VSF8c      | Study     | Pending         | VA 620 (Braddock Road) (HOV) | I-495                            | VA 645 (Burke Lake Road)                        | 0        | 0  | 0     | 2  | No                            | not coded              | No      |
| VDOT   | VSF8j      | Construct | Pending         | VA 620 (New Braddock Rd.)    | VA 28                            | US 29 @ VA 662 (Stone Rd.)                      | 0/4      | 3  | 0/2   | 4  | No                            | 2015                   | No      |
| VDOT   | VSF10c     | Widen     | Pending         | VA 638 (Pohick Road)         | US 1                             | I-95  | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | VSF10e     | Widen     | Pending         | VA 638 (Rolling Road)        | VA 5297 (DeLong Dr.)             | VA 6922 (Odell Street) / Fairfax County Parkway | 3        | 3  | 2     | 4  | No                            | 2010                   | No      |
| VDOT   | VSF10a     | Widen     | Approved        | VA 638 (Rolling Road)        | VA 7100 (Fairfax County Parkway) | VA 644 (Old Keene Mill Road)                    | 3        | 3  | 2     | 4  | No                            | 2012                   | Yes     |
| VDOT   | FFX8       | Study     | Pending         | VA 640 (Sydenstricker Rd.)   | VA 644 (Old Keene Mill Rd)       | VA 7100 (Fairfax County Parkway)                | 3        | 3  | 2     | 4  | No                            | not coded              | No      |
| VDOT   | VSF13e     | Widen     | Pending         | VA 642 (Lorton Road)         | VA 600 (Silverbrook Road)        | US 1 (Richmond Highway)                         | 3        | 3  | 2     | 6  | complete                      | 2006                   | Yes     |
| VDOT   | VSF13d     | Widen     | Pending         | VA 642 (Lorton Road)         | VA 611 (Furnace Road)            | VA 600 (Silverbrook Road)                       | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |

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|--------|------------|-----------|-----------------|----------------------------|----------------------------------|----------------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |           |                 |                            |                                  |                                  | from     | to | from  | to |                               |                        |         |
| VDOT   | FFX9a      | Study     | Pending         | VA 643 (Lee Chapel Rd.)    | VA 123 (Ox Road)                 | VA 7100 (Fairfax County Parkway) | 3        | 3  | 2     | 4  | No                            | not coded              | No      |
| VDOT   | VSF15      | Widen     | Pending         | VA 644 (Franconia Road)    | VA 3290 (Craft Road)             | VA 611 (Telegraph Road)          | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | FFX10      | Study     | Pending         | VA 644 (Old Keene Mill)    | VA 643                           | VA 7100 (Fairfax County Parkway) | 3        | 3  | 2     | 4  | No                            | not coded              | No      |
| VDOT   | VSF16a     | Widen     | Approved        | VA 645 (Burke Lake Road)   | VA 643 (Lee Chapel Road)         | VA 7100 (Fairfax County Parkway) | 3        | 3  | 2     | 4  | Complete                      | 2005                   | Yes     |
| VDOT   | VSF36      | Construct | N/A             | VA 645 (Clifton Road)      | VA 620 (Braddock Road)           | US 29 (Lee Highway)              | 3        | 3  | 2     | 4  | Complete                      | 2007                   | No      |
| VDOT   | FFX11a     | Widen     | Pending         | VA 645 (Stringfellow Rd.)  | US 50                            | VA 7100 (Fairfax County Parkway) | 3        | 3  | 2     | 4  | No                            | 2010                   | Yes     |
| VDOT   | VSF16g     | Widen     | Pending         | VA 645 (Stringfellow Road) | VA 7735 (Fair Lakes Blvd.)       | US 50                            | 3        | 3  | 2     | 4  | No                            | 2013                   | Yes     |
| VDOT   | VSF37      | Widen     | Approved        | VA 650 (Gallows Road)      | Gatehouse Road                   | Providence Forest Dr.            | 3        | 3  | 4     | 6  | No                            | 2013                   | No      |
| VDOT   | VSF33d     | Widen     | Pending         | VA 651 (Guinea Road)       | VA 620 (Braddock Road)           | VA 2430 (Braeburn Road)          | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | VSF33a     | Widen     | Pending         | VA 651 (Guinea Road)       | VA 6197 (Roberts Parkway)        | VA 4807 (Pommeroy Drive)         | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | FFX12a     | Construct | Pending         | VA 651 (New Guinea Rd.)    | VA 123 (Ox Road)                 | Roberts Rd.                      | 0        | 3  | 0     | 4  | No                            | 2015                   | No      |
| VDOT   | VSF17b     | Construct | Pending         | VA 655 (Shirley Gate Road) | VA 7100 (Fairfax County Parkway) | VA 620 (Braddock Road)           | 0        | 3  | 0     | 4  | No                            | 2015                   | No      |
| VDOT   | VSF18c     | Widen     | N/A             | VA 657 (Centreville Road)  | VA 8390 (Metrotech Dr.)          | VA 668 (McLearen Road)           | 3        | 3  | 4     | 6  | No                            | 2020                   | No      |
| VDOT   | VSF18b     | Widen     | N/A             | VA 657 (Centreville Road)  | VA 8390 (Metrotech Dr.)          | VA 668 (McLearen Road)           | 3        | 3  | 2     | 4  | No                            | 2015                   | no      |
| VDOT   | VSF18e     | Study     | Pending         | VA 657 (Centreville Road)  | VA 668 (McLearen Rd)             | VA 608 (Frying Pan Rd)           | 3        | 3  | 4     | 6  | No                            | not coded              | No      |

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|--------|------------|-----------|-----------------|----------------------------------|---------------------------|---|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |           |                 |                                  |                           |   | from     | to | from  | to |                               |                        |         |
| VDOT   | VSF18h     | Widen     | Pending         | VA 657 (Centreville Road)        | VA 608 (West Ox Rd)       | VA 608 (Frying Pan Rd)                    | 3        | 3  | 2     | 4  | No                            | 2012                   | Yes     |
| VDOT   | FFX14      | Study     | Pending         | VA 657 (Walney Rd.)              | VA 662 (Poplar Tree)      | Westfields. Blvd.                         | 3        | 3  | 2     | 4  | No                            | not coded              | No      |
| VDOT   | FFX15a     | Study     | Pending         | VA 662 (Poplar Tree Rd.)         | VA 645 (Stringfellow Rd.) | Westfields. Blvd.                         | 3        | 3  | 2     | 4  | No                            | not coded              | No      |
| VDOT   | VSF35b     | Study     | Pending         | VA 662 (Stone Rd/Poplar Tree Rd) | VA 620 (Braddock Road)    | VA 8460 (Stonecroft Blvd.)                | 3        | 3  |       | 4  | No                            | not coded              | No      |
| VDOT   | FFX16a     | Study     | Pending         | VA 665 (Fox Mill Rd.)            | VA 602 (Reston Pkwy)      | VA 7100 (Fairfax County Parkway)          | 3        | 3  | 2     | 4  | No                            | not coded              | No      |
| VDOT   | FFX17a     | Study     | Pending         | VA 666 (Monroe St.)              | VA 608 (W. Ox Rd.)        | VA 665 (Fox Mill)                         | 3        | 3  | 2     | 4  | No                            | not coded              | No      |
| VDOT   | FFX17b     | Widen     | Pending         | VA 666 (Monroe St.)              | VA 665 (Fox Mill)         | Herndon                                   | 3        | 3  | 2     | 6  | No                            | 2010                   | No      |
| VDOT   | FFX18      | Widen     | Pending         | VA 668 (McLearen Rd.)            | VA 28                     | VA 657 (Centreville Rd.)                  | 3        | 3  | 2/4   | 6  | Yes                           | 2020                   | No      |
| VDOT   | VSf21c     | Construct | Approved        | VA 673 (McLearen Rd)             | VA 608                    | VA 602/Interchange at Fairfax Co. Parkway | 0        | 3  | 0     | 4  | No                            | 2015                   | No      |
| VDOT   | VSF21b     | Widen     | Approved        | VA 673 (McLearen Rd)             | VA 657 (Centreville Road) | VA 608                                    | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | FFX20b     | Widen     | Pending         | VA 674 (Hunter Mill Rd.)         | VA 673 (Vale Rd.)         | VA 123 (Chain Bridge Road)                | 3        | 3  | 2     | 4  | No                            | 2012                   | No      |
| VDOT   | VSF22e     | Widen     | N/A             | VA 674 (Hunter Mill Road)        | VA 267 (Dulles Toll Road) | Crowell Road                              | 3        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | VSF36      | Relocate  | N/A             | VA 675 (Sunset Hills Rd.)        | West of Edlin School      | VA 675 (Crowell Road)                     | 3        | 3  | 4     | 4  | No                            | 2012                   | No      |
| VDOT   | FFX21b     | Study     | Pending         | VA 675 (Sunset Hills Rd.)        | VA 828 (Wiehle Ave.)      | VA 7100 (Fairfax County Parkway)          | 3        | 3  | 4     | 6  | No                            | not coded              | No      |
| VDOT   | VSF24      | Widen     | N/A             | VA 684 (Spring Hill Road)        | VA 7 (Leesburg Pike)      | VA 6034 (International Drive)             | 3        | 3  | 2     | 4  | No                            | 2008                   | Yes     |

# Appendix-A

## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

| Agency | Project ID | Improv.   | Environ. Review | Facility                                    | From                             | To                                      | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|---|----------------------------------|---|----------|----|-------|-----|-------------------------------|------------------------|---------|
|        |            |           |                 |   |                                  |   | from     | to | from  | to  |                               |                        |         |
| VDOT   | FFX22c     | Study     | Pending         | VA 828 (Wiehle Ave.)                        | VA 228 (Dranesville Road)        | Loudoun Co. Line                        | 0        | 3  | 0     | 4   | No                            | not coded              | No      |
| VDOT   | VSF25aa    | Convert   | Pending         | VA 7100 (Fairfax Co Pkwy HOV)               | VA 267 (Dulles Toll Road)        | Sunrise Valley Dr.                      | 5        | 5  | 6     | 4+2 | No                            | 2015                   | Yes     |
| VDOT   | VSF25ea    | Widen     | Pending         | VA 7100 (Fairfax Co Pkwy HOV)               | Sunrise Valley                   | Rugby Rd.                               | 5        | 5  | 4     | 4+2 | No                            | 2015                   | Yes     |
| VDOT   | VSF25e     | Widen     | Pending         | VA 7100 (Fairfax Co Pkwy HOV)               | Rugby Rd.                        | US 50                                   | 5        | 5  | 4     | 4+2 | No                            | 2015                   | Yes     |
| VDOT   | VSF25y     | Upgrade/W | Pending         | VA 7100 (Fairfax Co Pkwy HOV)               | US 50                            | VA 7735 (Fair Lakes Pkwy)               | 2        | 5  | 4     | 4+2 | No                            | 2010                   | No      |
| VDOT   | VSF25z     | Upgrade/W | Pending         | VA 7100 (Fairfax Co Pkwy HOV)               | VA 7735 (Fair Lakes Pkwy)        | I-66                                    | 2        | 5  | 6     | 6+2 | No                            | 2010                   | No      |
| VDOT   | VSF25g     | Widen     | Approved        | VA 7100 (Fairfax Co Pkwy)                   | I-66                             | VA 123 (Ox Road)                        | 5        | 5  | 4     | 6   | No                            | 2015                   | No      |
| VDOT   | VSF25j     | Widen     | Approved        | VA 7100 (Fairfax County Parkway)            | VA 636 (Hoes Road)               | VA 640 (Sydenstricker Road)             | 2        | 2  | 4     | 6   | No                            | 2015                   | No      |
| VDOT   | VSF25l     | Construct | Pending         | VA 7100 (Fairfax Co Pkwy HOV)               | VA 640 (Sydenstricker Road)      | VA 7900 (Franconia-Springfield Parkway) | 0        | 2  | 0     | 2   | No                            | 2015                   | No      |
| VDOT   | VSF25n     | Construct | Approved        | VA 7100 (Fairfax County Parkway)            | VA 4600 (Fullerton Road)         | VA 7900 (Franconia-Springfield Parkway) | 0        | 1  | 0     | 6   | No                            | 2011                   | Yes     |
| VDOT   |            | Construct | Pending         | VA 7100 Interchange                         | @ VA 7735 (Fair Lakes Pkwy) &    | Monument Drive                          | 2        | 5  | -     | -   | No                            | 2010                   | Yes     |
| VDOT   | VSF39      | Widen     | Pending         | VA 7735 (Fair Lakes Pkwy) (3rd EB Lane)     | VA 7100                          | Fair Lakes Circle                       | 4        | 4  | 4     | 5   | No                            | 2010                   | No      |
| VDOT   | VSF26      | Construct | Pending         | VA 7900 HOV (Franconia-Springfield Parkway) | VA 7100 (Fairfax County Parkway) | VA 2677 (Frontier Drive)                | 5        | 5  | -     | 2   | No                            | 2010                   | No      |
| VDOT   | VSF26a     | Construct | Pending         | VA 7900 HOV (Franconia-Springfield Parkway) | Interchange @ Neuman St.         |   | 1        | 1  | -     | -   | No                            | 2020                   | No      |
| VDOT   | VSF26b     | Upgrade   | Pending         | VA 7900 HOV (Franconia-Springfield Parkway) | VA 638 (Rolling Rd.)             | VA 617 (Backlick Rd.)                   | 5        | 1  | 6+2   | 6+2 | No                            | 2020                   | No      |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP



## Appendix-A

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# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency                   | Project ID | Improv.           | Environ. Review | Facility  | From                  | To                 | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------------------------|------------|-------------------|-----------------|---|-----------------------|--------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|                          |            |                   |                 |   |                       |                    | from     | to | from  | to |                               |                        |         |
| VDOT                     | FFX24c     | Widen             | Pending         | VA 8460 (Stonecroft Blvd.)                      | VA 661 (Old Lee Rd.)  | Willard Rd.        | 3        | 3  | 4     | 6  | No                            | 2010                   | No      |
| FHWA/V<br>DOT            | FED2       | Widen             | Pending         | Old Mill Rd.                                    | US 1                  | Pole Rd            | 4        | 4  | 2     | 4  | No                            | 2009                   | No      |
| FHWA/V<br>DOT            | FED3       | Construct         | Pending         | Old Mill Rd. extended                           | Pole Rd.              | Telegraph          | 0        | 3  | 0     | 4  | No                            | 2009                   | No      |
| <b>Loudoun Secondary</b> |            |                   |                 |   |                       |                    |          |    |       |    |                               |                        |         |
| VDOT                     | VSL51      | Construct         | Pending         | Atlantic Boulevard                              | VA 625 (Church Road)  | VA 7               | -        | 3  | -     | 4  | No                            | 2010                   | No      |
| VDOT                     | VSL39      | Construct         | N/A             | Broadlands Boulevard (Ryan Bypass)              | VA 659                | VA 625             | 0        | 3  | 0     | 4  | No                            | 2005                   | No      |
| VDOT                     | VSL1b      | Widen/Up grade    | Pending         | VA 606 (Ldn Co. Pkwy) (nee Old Ox Rd.)          | VA 634                | VA 621             | 4        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT                     |            | Widen             | N/A             | VA 606 (Dulles Greenway Interchange)            | within Greenway R/W   |                    | 1        | 1  | 2     | 6  | No                            | 2004                   | No      |
| VDOT                     | VSL10c     | Construct         | Pending         | VA 607 (Loudoun County Pkwy)                    | VA 606 / VA 842       | VA 772 / VA 607    | -        | 3  | -     | 4  | Yes                           | 2010                   | No      |
| VDOT                     | VSL10d     | widen/<br>Constr. | N/A             | VA 607 (Loudoun County Pkwy) (nee VA 28 Bypass) | VA 620 @ VA 613       | Edgewater St.      |          | 3  |       | 4  | Yes                           | 2005                   | No      |
| VDOT                     | VSL10ba    | Widen             | Pending         | VA 607 (Loudoun County Pkwy)                    | VA 625 (Waxpool Road) | W&OD Trail         | 3        | 3  | 4     | 6  | No                            | 2010                   | No      |
| VDOT                     | VSL10bb    | Widen/Up grade    | Pending         | VA 607 (Loudoun County Pkwy)                    | W&OD Trail            | Redskin Park Drive | 4        | 3  | 2     | 6  | No                            | 2010                   | No      |
| VDOT                     | VSL10bf    | Widen/Up grade    | Pending         | VA 607 (Loudoun County Pkwy) (dirt road)        | Redskin Park Drive    | Gloucester Parkway | 4        | 3  | 2     | 4  | No                            | 2005                   | No      |
| VDOT                     | VSL10bc    | Widen             | Pending         | VA 607 (Loudoun County Pkwy)                    | Redskin Park Drive    | Gloucester Parkway | 3        | 3  | 4     | 6  | No                            | 2015                   | No      |
| VDOT                     | VSL10bd    | Widen/Up grade    | Pending         | VA 607 (Loudoun County Pkwy)                    | Gloucester Parkway    | VA 7               | 4        | 3  | 2     | 4  | No                            | 2005                   | No      |

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# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.        | Environ. Review | Facility                                     | From                       | To                          | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|----------------|-----------------|--|----------------------------|-----------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |                |                 |  |                            |                             | from     | to | from  | to |                               |                        |         |
| VDOT   | VSL12      | Widen          | Pending         | VA 625 (Church Rd.)                          | VA 28                      | VA 637                      | 3        | 3  | 2     | 4  | Yes                           | 2006                   | Yes     |
| VDOT   | VSL12b     | Widen          | Pending         | VA 625 (Waxpool Rd.)                         | Loudoun County Parkway     | Broad Run                   | 3        | 3  | 4     | 6  | Yes                           | 2005                   | Yes     |
| VDOT   | VSL12c     | Widen          | Pending         | VA 625 (Waxpool Rd.)                         | Broad Run                  | VA 28                       | 3        | 3  | 4     | 6  | Yes                           | 2005                   | No      |
| VDOT   | VSL42      | Widen/Up grade | Approved        | VA 634 (Lockridge/Moran Road)                | VA 606 (Old Ox Road)       | Randolph Drive              | 4        | 3  | 2     | 4  | Complete                      | 2006                   | No      |
| VDOT   | VSL45      | Widen/Up grade | Pending         | VA 643 (Sycolin Road) Phase II               | Leesburg Town Limits       | VA 659 (Belmont Ridge Road) | 4        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | VSL4a      | Widen/Up grade | Pending         | VA 659 (Belmont Ridge Rd.)                   | National Rec. & Park Ent.  | Dulles Greenway             | 4        | 3  | 2     | 4  | No                            | 2020                   | Yes     |
| VDOT   | VSL4ab     | Widen/Up grade | Pending         | VA 659 (Belmont Ridge Road)/VA 659 Relocated | Dulles Greenway            | VA 7                        | 4        | 3  | 2     | 4  | No                            | 2015                   | Yes     |
| VDOT   | VSL4d      | Widen/Up grade | Pending         | VA 659 (Belmont Ridge Road)                  | VA 659 Relocated           | National Rec. & Park Ent.   | 4        | 3  | 2     | 4  | No                            | 2010                   | No      |
| VDOT   | VSL4e      | Widen/Up grade | N/A             | VA 659 (Gum Spring Rd.)                      | VA 620 (Braddock Road)     | US 50                       | 4        | 3  | 2     | 4  | No                            | 2006                   | No      |
| VDOT   | VSL4f      | Widen/Up grade | Pending         | VA 659 (Gum Spring Rd.)                      | Prince William County Line | VA 620 (Braddock Road)      | 4        | 3  | 2     | 4  | No                            | 2010                   | No      |
| VDOT   | VSL4c      | Construct      | Pending         | VA 659 Relocated                             | PWCL / VA 234 Bypass       | US 50                       | 0        | 3  | 0     | 4  | No                            | 2015                   | No      |
| VDOT   | VSL4b      | Construct      | Pending         | VA 659 Relocated                             | US 50                      | VA 659 (Belmont Ridge Rd.)  | 0        | 3  | 0     | 4  | No                            | 2012                   | No      |
| VDOT   | VSL44      | Widen/Up grade | N/A             | VA 772 (Ryan Road)                           | VA 659 (Belmont Ridge Rd.) | Dulles Greenway @ exit #6   | 4        | 3  | 2     | 6  | Yes                           | 2004                   | No      |
| VDOT   | VSL40a     | Widen          | N/A             | VA 901 (Claiborne Parkway)                   | VA 640 (Ashburn Farm Pkwy) | W&OD Trail                  | 4        | 3  | 2     | 4  | Yes                           | 2007                   | No      |
| VDOT   | VSL40b     | Construct      | N/A             | VA 901 (Claiborne Parkway)                   | W&OD Trail                 | VA 7                        | 0        | 3  | 0     | 4  | Yes                           | 2006                   | No      |

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# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency                          | Project ID | Improv.        | Environ. Review | Facility                               | From                        | To   | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|---------------------------------|------------|----------------|-----------------|--|-----------------------------|--|----------|----|-------|----|-------------------------------|------------------------|---------|
|                                 |            |                |                 |  |                             |  | from     | to | from  | to |                               |                        |         |
| VDOT                            | nrs        | Construct      | Pending         | VA 868 (Davis Dr.)                     | VA 606 (Old Ox Road)        | VA 625 (Church Road)                             | -        | 4  | -     | 4  | No                            | 2007                   | Yes     |
| VDOT                            | VSL46      | Construct      | Pending         | VA 1036 (Pacific Boulevard)            | Sterling Blvd.              | Gloucester Parkway                               | -        | 3  | -     | 4  | No                            | 2010                   | Yes     |
| VDOT                            | VSL47      | Widen/Up grade | N/A             | River Creek Parkway                    | Riverside Parkway           | VA 773 (Edwards Ferry Road)                      | 4        | 3  | 2     | 4  | No                            | 2007                   | No      |
| VDOT                            | VSL48      | Construct      | N/A             | Riverside Parkway                      | River Creek Parkway         | Ashburn Village Blvd.                            | -        | 3  | -     | 4  | Complete                      | 2007                   | No      |
| VDOT                            | VSL49      | Construct      | Pending         | Russell Branch Parkway                 | VA 659 (Belmont Ridge Road) | Loudoun County Parkway                           | -        | 3  | -     | 4  | No                            | 2015                   | No      |
| VDOT                            | VSL50      | Widen/Up grade | Pending         | VA 773 (Fort Evans Road)               | Leesburg Town Limits        | River Creek Parkway                              | 4        | 3  | 2     | 4  | No                            | 2007                   | No      |
| <b>Prince William Secondary</b> |            |                |                 |  |                             |  |          |    |       |    |                               |                        |         |
| VDOT                            | VSP49b     | Construct      | Pending         | Heathcote Boulevard                    | VA 625 (Old Caroline Rd.)   | US 15 (James Madison Highway)                    | 0        | 3  | 0     | 4  | No                            | 2010                   | No      |
| VDOT                            | VSP49      | Construct      | Pending         | Heathcote Boulevard                    | US 29                       | VA 676 (Catharpin Road)                          | 0        | 3  | 0     | 4  | Yes                           | 2007                   | No      |
| VDOT                            | VSP60      | Construct      |                 | Neabsco Mills Rd.                      | Dale Blvd.                  | Opitz Blvd.                                      | 0        | 3  | 0     | 4  | Yes                           | 2007                   | No      |
| VDOT                            | VSP54      | Construct      | N/A             | North/South Road at Innovation         | VA 840 (University Blvd.)   | VA 674 (Wellington Road)/VA 660 (Bethlehem Road) | 0        | 3  | 0     | 4  | No                            | 2010                   | Yes     |
| VDOT                            | VSP59      | Construct      | N/A             | Peaks Mill (Purcell Road east)         | Route 643 (Purcell Road )   | Route 3000 (Prince William Parkway)              | 0        | 4  | 0     | 2  | No                            | 2025                   | No      |
| VDOT                            | VSP39      | Widen          | Pending         | Russell Road                           | I-95                        | Dunlap Avenue                                    | 4        | 3  | 2     | 4  | No                            | 2010                   | No      |
| VDOT                            | VSP46b     | Construct      | Pending         | VA 1566 (Sudley Manor Drive Extension) | VA 619 (Linton Hall Road)   | VA 234 Bypass                                    | 0        | 3  | 0     | 4  | complete                      | 2007                   | Yes     |
| VDOT                            | VSP46      | Construct      | Pending         | VA 1566 (Sudley Manor Drive Extension) | VA 234 Bypass               | Chatsworth Drive                                 | 0        | 3  | 0     | 4  | Yes                           | 2007                   | Yes     |

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## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.        | Environ. Review | Facility                                      | From                             | To                                | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|----------------|-----------------|---|----------------------------------|-----------------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |                |                 |   |                                  |                                   | from     | to | from  | to |                               |                        |         |
| VDOT   | VSP24      | Construct      | Pending         | VA 1596 (Williamson Blvd)                     | Sudley Manor Dr.                 | Portsmouth Rd.                    | 0        | 4  | 0     | 4  | No                            | 2020                   | No      |
| VDOT   | VSP21c     | Widen          | N/A             | VA 1600 (Ashton Ave.)                         | Coverstone Dr.                   | VA 621 (Balls Ford Rd.)           | 3        | 3  | 2     | 4  | No                            | 2010                   | No      |
| VDOT   | VSP25b     | Widen          | Pending         | VA 1781 (New Telegraph Rd/Summit School Road) | VA 849 (Caton Hill Road)         | VA 640 (Minnieville Rd.)          | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | VSP25c     | Widen          | Pending         | VA 1781 (Telegraph Rd.)                       | VA 3000 (Prince William Parkway) | VA 849 (Caton Hill Rd.)           | 4        | 4  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | VSP25d     | Construct      | Pending         | VA 2480 (Benita Fitzgerald Drive, Extended)   | VA 610 (Cardinal Drive)          | VA 2480 (Benita Fitzgerald Drive) | 0        | 3  | 0     | 4  | complete                      | 2006                   | Yes     |
| VDOT   | VSP23d     | Widen          | Pending         | VA 3000 (Prince William Pkwy.)                | VA 776 (Liberia Ave.)            | VA 640 (Minnieville Rd.)          | 2        | 2  | 4     | 6  | No                            | 2025                   | No      |
| VDOT   | VSP2a      | Widen/Up grade | Approved        | VA 619 (Linton Hall Road)                     | US 29 (Lee Highway)              | VA 675 (Glenkirk Road)            | 4        | 3  | 2     | 6  | Yes                           | 2007                   | Yes     |
| VDOT   | VSP2b      | Widen/Up grade | Approved        | VA 619 (Linton Hall Road)                     | VA 675 (Glenkirk Road)           | VA 621 (Devlin Road)              | 4        | 3  | 2     | 4  | Yes                           | 2007                   | Yes     |
| VDOT   | VSP2e      | Widen/Up grade | Approved        | VA 619 (Linton Hall Road)                     | VA 621 (Devlin Road)             | VA 1566 (Sudley Manor Dr.)        | 4        | 3  | 2     | 4  | Yes                           | 2006                   | Yes     |
| VDOT   | VSP2ea     | Widen/Up grade | Approved        | VA 619 (Linton Hall Road)                     | VA 1566 (Sudley Manor Dr.)       | VA 28 (Nokesville Road)           | 4        | 3  | 2     | 4  | No                            | 2009                   | yes     |
| VDOT   | VSP2h      | Widen          | Pending         | VA 619 (Joplin Rd.) add right turn lane       | I-95 exit Ramp                   | US 1                              | 4        | 4  | 4     | 5  | complete                      | 2006                   | yes     |
| VDOT   | VSP3a      | Widen/Up grade |                 | VA 621 (Balls Ford Road)                      | VA 234 (Sudley Road)             | Bethlehem Road                    | 4        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | VSP3b      | Widen/Up grade | N/A             | VA 621 (Balls Ford Road)                      | Bethlehem Road                   | VA 234 Bypass                     | 4        | 3  | 2     | 4  | No                            | 2015                   | No      |
| VDOT   | VSP3d      | Widen          | Pending         | VA 621 (Devlin Road)                          | Route 674 (Wellington Road)      | Route 619 (Linton Hall Road)      | 3        | 3  | 2     | 4  | No                            | 2025                   | No      |
| VDOT   | nrs        | Widen          | Pending         | VA 625 (Old Carolina Rd.)                     | I-66 Underpass                   | Piedmont Vista Dr.                |          |    | 2     | 4  | No                            | 2010                   | No      |

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| Agency | Project ID | Improv.        | Environ. Review | Facility   | From                           | To                                  | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|----------------|-----------------|--|--------------------------------|-------------------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |                |                 |  |                                |                                     | from     | to | from  | to |                               |                        |         |
| VDOT   | VSP40a     | Construct      | Pending         | VA 635 (Cherry Hill VRE Access Road)                   | US 1                           | Future VRE Station site             | 0        | 4  | 0     | 2  | No                            | 2010                   | Yes     |
| VDOT   | VSP5d      | Widen          | Pending         | VA 640 (Minnieville Road)                              | VA 610 (Cardinal Drive)        | VA 643 (Spriggs Road)               | 3        | 3  | 2     | 4  | No                            | 2007                   | Yes     |
| VDOT   | VSP5e      | Widen          | Pending         | VA 640 (Minnieville Road)                              | VA 643 (Spriggs Road)          | VA 234                              | 3        | 3  | 2     | 4  | No                            | 2020                   | No      |
| VDOT   | VSP15c     | Widen          | Pending         | VA 640 (Minnieville Road)                              | VA 849 (Caton Hill Road)       | VA 641 (Old Bridge Road)            | 3        | 3  | 2     | 4  | Yes                           | 2008                   | Yes     |
| VDOT   | VSP8a      | Widen          | Pending         | VA 643 (Purcell Rd.)                                   | VA 234 (Dumfries Rd.)          | VA 642 (Hoadly Rd.)                 | 3        | 3  | 2     | 4  | No                            | 2020                   | No      |
| VDOT   | VSP12a     | Widen          | Pending         | VA 643 (Spriggs Rd.)                                   | VA 234 (Dumfries Rd.)          | VA 642 (Hoadly Road)                | 3        | 3  | 2     | 4  | yes                           | 2007                   | Yes     |
| VDOT   | VSP17b     | Widen          | Approved        | VA 674 (Wellington Rd.)                                | VA 621 (Devlin Road)           | VA 668 (Rixlew Lane)                | 3        | 3  | 2     | 4  | No                            | 2012                   | No      |
| VDOT   | VSP17c     | Widen          | Pending         | VA 674 (Wellington Rd.)                                | Limestone Dr.                  | Vicinity Cellar Door Dr.            | 3        | 3  | 2     | 4  | Yes                           | 2006                   | Yes     |
| VDOT   | VSP18      | Widen          | Pending         | VA 676 (Catharpin Rd.)                                 | VA 55 (John Marshall Highway)  | Heathcote Blvd.                     | 3        | 3  | 2     | 4  | No                            | 2020                   | No      |
| VDOT   | VSP20b     | Widen          | Pending         | VA 784 (Dale Blvd.)                                    | I-95                           | VA 640 (Minnieville Rd.)            |          | 3  | 4     | 6  | No                            | 2020                   | No      |
| VDOT   |            | Widen/UP grade | Pending         | VA 784 (Rippon Boulevard Extension)                    | US 1 (Jefferson Davis Highway) | Rippon VRE Station                  | 4        | 3  | 2     | 4  | No                            | 2010                   | No      |
| VDOT   | VSP47d     | Construct      | Pending         | VA 840 (University Blvd.) (nee East-West Connector)    | Route 660 (Hornbaker Road)     | VA 674 (Wellington Rd.)             | 0        | 3  | 0     | 4  | No                            | 2025                   | No      |
| VDOT   | VSP56a     | Construct      | Pending         | VA 840 (University Blvd.)                              | VA 674 (Wellington Road)       | US 29 @ Ent. to Conway Robinson MSF | 0        | 3  | 0     | 4  | complete                      | 2006                   | Yes     |
| VDOT   | VSP45      | Construct      | N/A             | VA 861 (Clover Hill Road Extended/ Airport Access Rd.) | VA 234 Bypass                  | Manassas Airport                    | 0        | 4  | 0     | 2  | Yes                           | 2006                   | Yes     |

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(Highway and HOV)

| Agency       | Project ID | Improv.         | Environ. Review | Facility                 | From                    | To                      | Facility |    | Lanes |     | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------------|------------|-----------------|-----------------|--------------------------|-------------------------|-------------------------|----------|----|-------|-----|-------------------------------|------------------------|---------|
|              |            |                 |                 |                          |                         |                         | from     | to | from  | to  |                               |                        |         |
| VDOT         | VSP62      | Construct       | Pending         | Rollins Ford Rd.         | Songsparrow Dr.         | US 15                   | 0        |    | 0     | 4   | No                            | 2012                   | No      |
| <b>FAMPO</b> |            |                 |                 |                          |                         |                         |          |    |       |     |                               |                        |         |
| FAMPO        | FA11a      | Construct       | EA Compl.       | I-95 diamond interchange | at VA 627               |                         | 1        | 1  | 0     | 0   | Yes                           | 2008                   |         |
| FAMPO        |            | Reconst/Constr. | EA Compl.       | I-95 interchange         | at VA 627               |                         |          |    |       |     | No                            | 2030                   |         |
|              | FA11E      | construct       |                 | I-95 CD lanes            | VA 630                  | VA 627                  | 1        | 1  | 6     | 6+4 | No                            | 2025                   |         |
| FAMPO        |            | Reconstruct     | EA Compl.       | I-95 interchange         | at VA 630               |                         | 1        | 1  | 0     | 0   | No                            | 2020                   |         |
| FAMPO        | FAP5h      | Widen           |                 | US 1                     | Rt 212                  | Princess Anne Street    | 2        | 2  | 4     | 6   | No                            | 2030                   |         |
| FAMPO        | FAP5b      | Widen           |                 | US 1                     | Princess Anne St.       | VA 3 (Plank Rd.)        | 2        | 2  | 4     | 6   | No                            | 2015                   |         |
| FAMPO        | FAP5       | Widen           |                 | US 1                     | VA 3 interchange        | SCL                     | 3        | 3  | 4     | 6   | No                            | 2030                   |         |
| FAMPO        | FAP5e      | Widen           |                 | US 1                     | SCL Fredericksburg      | VA 208 (Courthouse Rd.) | 2        | 2  | 4     | 6   | No                            | 2030                   |         |
| FAMPO        | FAP5d      | Widen           |                 | US 1                     | VA 208 (Courthouse Rd.) | Mills Dr.               | 2        | 2  | 4     | 6   | No                            | 2010                   |         |
| FAMPO        | FAP5f      | Widen           |                 | US 1                     | Widewater Parkway       | Rt 610                  | 2        | 2  | 4     | 6   | No                            | 2025                   |         |
| FAMPO        | FAP5g      | Widen           |                 | US 1                     | Rt 610                  | Rt 630                  | 2        | 2  | 4     | 6   | No                            | 2025                   |         |
| FAMPO        | FAP6a      | Widen           |                 | US 17 Bypass             | VA 1                    | VA 2                    | 2        | 2  | 2     | 4   | No                            | 2025                   |         |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP

## Appendix-A

12/05/07

# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency                           | Project ID | Improv.     | Environ. Review | Facility                     | From                             | To                         | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|----------------------------------|------------|-------------|-----------------|------------------------------|----------------------------------|----------------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|                                  |            |             |                 |                              |                                  |                            | from     | to | from  | to |                               |                        |         |
| FAMPO                            | FAP6c      | Widen       |                 | US 17 Bypass                 | I-95                             | Village Parkway            | 2        | 2  | 4     | 6  | No                            | 2010                   |         |
| FAMPO                            | FAP7       | Widen       |                 | VA 212 (Butler Rd)           | US 1                             | VA 212 / VA 218 Connection | 4        | 4  | 2     | 4  | No                            | 2025                   |         |
| FAMPO                            | FAS23a     | Construct   | Pending         | VA 208 Bypass (Spotsylvania) | West of Ta River                 | East of Po River           | 0        | 3  | 0     | 2  | ROW                           | 2009                   |         |
| FAMPO                            | FAS23b     | Construct   | Pending         | VA 208 Bypass (Spotsylvania) | East of Po River                 | West of Ni River           | 0        | 3  | 0     | 4  | ROW                           | 2007                   |         |
| <b>STAFFORD COUNTY SECONDARY</b> |            |             |                 |                              |                                  |                            |          |    |       |    |                               |                        |         |
| FAMPO                            | FAS7a      | Widen       | Compl.          | VA 607 (Deacon Rd.)          | VA 626                           | VA 218                     | 4        | 4  | 2     | 4  | Yes                           | 2010                   |         |
| FAMPO                            | FAS3c      | Widen       |                 | VA 610 (Garrisonville Rd.)   | VA 610 (existing 4 lane section) | VA 643                     | 4        | 4  | 2     | 4  | Yes                           | 2020                   |         |
| FAMPO                            | FAS3db     | Widen       |                 | VA 610 (Garrisonville Rd.)   | VA 684 (Mine Rd.)                | I-95 SB ramp               | 4        | 3  | 6     | 6  | No                            | 2020                   |         |
| FAMPO                            | FAS3da     | Widen       |                 | VA 610 (Garrisonville Rd.)   | I-95 SB ramp                     | US 1                       | 4        | 3  | 6     | 8  | No                            | 2020                   |         |
| FAMPO                            | FAS3d      | Widen       |                 | VA 610 (Garrisonville Rd.)   | VA 684 (Mine Rd.)                | VA 641                     | 4        | 3  | 4     | 6  | No                            | 2030                   |         |
| FAMPO                            | FAS3e      | Widen       |                 | VA 610 (Garrisonville Rd.)   | VA 641                           | VA 648                     | 4        | 3  | 4     | 6  | No                            | 2025                   |         |
| FAMPO                            | FAS8       | Reconstruct |                 | VA 624                       | US 1                             | VA 626                     | 4        | 4  | 2     | 4  | No                            | 2010                   |         |
| FAMPO                            | FAS29      | Widen       |                 | VA 626 (Leeland Rd.)         | new conn. With VA 624            | VA 607                     | 4        | 4  | 2     | 4  | No                            | 2015                   |         |
| FAMPO                            | FAS5b      | Widen       |                 | VA 630 (Courthouse Rd)       | I-95                             | VA 648                     | 4        | 4  | 2     | 4  | No                            | 2010                   |         |
| FAMPO                            | FAS13      | Reconstruct |                 | VA 648 (Shelton Shop Rd.)    | VA 610                           | VA 627                     | 4        | 4  | 2     | 4  | No                            | 2015                   |         |

# Appendix-A

## 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

| Agency                               | Project ID | Improv.   | Environ. Review | Facility                        | From               | To                  | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------------------------------------|------------|-----------|-----------------|---------------------------------|--------------------|---------------------|----------|----|-------|----|-------------------------------|------------------------|---------|
|                                      |            |           |                 |                                 |                    |                     | from     | to | from  | to |                               |                        |         |
| FAMPO                                | FAS11a     | Construct |                 | VA 684 Extension                | Existing Mine Rd.  | VA 628              | 0        | 4  | 0     | 4  | No                            | 2020                   |         |
| FAMPO                                | FAS11b     | Construct |                 | VA 684 Extension                | VA 628             | VA 652              | 0        | 4  | 0     | 4  | No                            | 2030                   |         |
| <b>CITY OF FREDERICKSBURG</b>        |            |           |                 |                                 |                    |                     |          |    |       |    |                               |                        |         |
| FAMPO                                | FAS16      | Widen     |                 | VA 3 (William St.) (fredericksb | Mahone Dr.         | US 1                | 3        | 3  | 4     | 6  | No                            | 2020                   |         |
| FAMPO                                | FAS25      | Widen     |                 | Princess Anne St.               | US 1               | Herndon St.         | 3        | 3  | 2     | 4  | No                            | 2010                   |         |
| <b>SPOTSYLVANIA COUNTY SECONDARY</b> |            |           |                 |                                 |                    |                     |          |    |       |    |                               |                        |         |
| FAMPO                                | FAS22      | Widen     |                 | VA 3 (Spotsylvania)             | Rutherford Dr.     | VA 627 (Gordon Rd.) | 2        | 2  | 3     | 6  | No                            | 2020                   |         |
| FAMPO                                | FAS26a     | Widen     |                 | VA 606 (Mudd Tavern Rd.)        | US 1               | I-95                | 3        | 3  | 2     | 4  | No                            | 2030                   |         |
| FAMPO                                | FAS26b     | Widen     |                 | VA 606 (Morris Rd)              | US 1               | VA 208              | 3        | 3  | 2     | 4  | No                            | 2030                   |         |
| FAMPO                                | FAS27      | Widen     |                 | VA 608 (Massaponax Church       | VA 628             | US 1                | 3        | 3  | 2     | 4  | No                            | 2030                   |         |
| FAMPO                                | FAS31      | Widen     |                 | VA 610 (Old Plank Rd.)          | VA 627             | VA 612              | 4        | 4  | 2     | 4  | No                            | 2030                   |         |
| FAMPO                                | FAS17      | Widen     |                 | VA 612 (Catharpin Rd.)          | Ni River Reservoir | VA 610              | 4        | 4  | 2     | 4  | No                            | 2030                   |         |
| FAMPO                                | FAS18a     | Widen     |                 | VA 620 (Harrison Rd)            | VA 639             | US 1 Bypass         | 4        | 4  | 2     | 4  | No                            | 2020                   |         |
| FAMPO                                | FAS9b      | Widen     |                 | VA 627 (Gordon Rd.)             | VA 628             | VA 620              | 4        | 4  | 2     | 4  | No                            | 2030                   |         |
| FAMPO                                | FAS28      | Widen     |                 | VA 628 (Smith Station Rd)       | VA 608             | VA 627              | 4        | 4  | 2     | 4  | No                            | 2030                   |         |

Note: Shaded areas represent changes from the FY2007-2012 TIP / 2006 CLRP



## Appendix-A

12/05/07

# 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Highway and HOV)

| Agency | Project ID | Improv.   | Environ. Review | Facility                          | From   | To     | Facility |    | Lanes |    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|-----------------------------------|--------|--------|----------|----|-------|----|-------------------------------|------------------------|---------|
|        |            |           |                 |                                   |        |        | from     | to | from  | to |                               |                        |         |
| FAMPO  | FAS19      | Widen     |                 | VA 636 (Hood Dr.)                 | US 1   | VA 208 | 4        | 4  | 2     | 4  | No                            | 2020                   |         |
| FAMPO  | FAS19b     | Widen     |                 | VA 636 (Mine Rd.)                 | US 1   | VA 638 | 4        | 4  | 2     | 4  | No                            | 2030                   |         |
| FAMPO  | FAS20a     | Widen     | Pending         | VA 639 (Leavells Rd.)             | VA 620 | VA 208 | 4        | 4  | 2     | 4  | Yes                           | 2005                   |         |
| FAMPO  | FAS20b     | Widen     |                 | VA 639 (Leavells Rd.)             | VA 208 | VA 628 | 4        | 4  | 2     | 4  | Yes                           | 2030                   |         |
| FAMPO  | FAS20c     | Widen     |                 | VA 639 (Bragg Rd.)                | VA 618 | VA 3   | 4        | 4  | 2     | 4  | No                            | 2010                   |         |
| FAMPO  | FAS21      | Construct |                 | Parallel Facility to I-95 (Spotsy | US 1   | VA 620 | 0        | 4  | 0     | 4  | No                            | 2020                   |         |

*FY-2008 Network Documentation: Highway and Transit Network Development*

**Appendix B: Transit Inputs for the 2007 CLRP and FY 2008-2013  
TIP Air Quality Conformity Networks**

*FY-2008 Network Documentation: Highway and Transit Network Development*

**Appendix-B**  
**2007 CLRP and FY2008-2013 TIP AIR QUALITY**  
**CONFORMITY INPUTS**  
**(Transit)**

| Agency  | Project ID | Improv.     | Environ. Review | Facility   | From                                       | To   | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|---|------------|-------------|-----------------|--|--|--|-------------------------------|------------------------|---------|
| <b>Washington Metropolitan Area Transit Authority</b> |            |             |                 |  |  |  |                               |                        |         |
| WMATA   |            | Modify      |                 | Revised Metrorail Operating Plan   |  |  |                               | 2010                   |         |
| WMATA   |            | Modify      |                 | Revised Metrorail Operating Plan   |  |  |                               | 2011                   |         |
| WMATA   |            | Modify      |                 | Revised Metrorail Operating Plan   |  |  |                               | 2015                   |         |
| <b>District of Columbia</b>                           |            |             |                 |  |  |  |                               |                        |         |
| DDOT  |            | Construct   | Pending         | Anacostia Streetcar project Phase I (replaces CSX Shepherd Branch project)   | Firth Sterling and S. Capitol St.          | Howard Rd. and MLK Jr. Ave.                      |                               | 2007                   |         |
| DDOT  |            | Study       | Pending         | Anacostia Streetcar project Phase II (replaces CSX Shepherd Branch project)  | Firth Sterling and S. Capitol St.          | Malcolm X Ave.                                   |                               | not coded              |         |
| DDOT  |            | Study       | Pending         | Anacostia Streetcar project Phase III (replaces CSX Shepherd Branch project) | Howard Rd. and MLK Jr. Ave.                | Good Hope Rd. and Minnesota Ave.                 |                               | not coded              |         |
| DDOT  |            | Study       | Pending         | Anacostia Streetcar project Phase IV (replaces CSX Shepherd Branch project)  | MLK Jr. Ave.                               | over 11th St. Bridge on M. St. to S. Capitol St. |                               | not coded              |         |
| DDOT  |            | Study       |                 | Downtown Circulator Bus System   | Implementation Study                       |  |                               | not coded              | Yes     |
| DDOT  |            | Construct   |                 | Banneker Circle Parking  | 1200 spaces                                |  |                               |                        |         |
| DDOT  |            | Reconstruct |                 | Georgia Ave. Rapid Bus (Operation Enhancements)                              | Eastern Ave. / Silver Spring Metro Station | Archives Navy Memorial Metro Station             |                               | 2007                   | Yes     |

**Appendix-B**  
**2007 CLRP and FY2008-2013 TIP AIR QUALITY**  
**CONFORMITY INPUTS**  
**(Transit)**

| Agency                   | Project ID | Improv.     | Environ. Review | Facility  | From  | To                              | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------------------------|------------|-------------|-----------------|---|---|---------------------------------|-------------------------------|------------------------|---------|
| DDOT                     |            | Reconstruct |                 | Pennsylvania Rapid Bus (Operation Enhancements) | Archives Navy Memorial Metro Station        | Naylor Road Metrorail Station   |                               | 2007                   | Yes     |
| DDOT                     |            | Study       |                 | Rapid Bus Corridors                             | Rhode Island Ave., Military Rd.,            |                                 |                               | not coded              |         |
| DDOT                     |            | Reconstruct |                 | K St. Busway                                    | Mt. Vernon Sq./7th St. NW                   | Wash.Circle / 23rd St. NW       |                               | 2008                   |         |
| <b>Maryland</b>          |            |             |                 |   |   |                                 |                               |                        |         |
| MTA                      |            | Construct   |                 | Purple Line Transitway                          | Bethesda                                    | Silver Spring                   |                               | 2015                   | Yes     |
| MTA                      |            | Study       |                 | Purple Line Transitway                          | Silver Spring                               | New Carrollton                  |                               | not coded              | Yes     |
| MTA                      |            | Construct   |                 | Silver Spring Transit Center                    | Phase II                                    |                                 |                               | 2007                   | Yes     |
| MTA                      |            | Construct   |                 | Corridor Cities Transitway                      | Shady Grove                                 | Metropolitan Grove              |                               | 2012                   | Yes     |
| MTA                      |            | Construct   |                 | Corridor Cities Transitway                      | Metropolitan Grove                          | COMSAT                          |                               | 2020                   | Yes     |
| MTA                      |            | Construct   |                 | Southern MD Commuter Bus Initiative             | Park-and-Ride lots and increase bus service | in the MD 5 corridor (La Plata) |                               | 2010                   | Yes     |
| MDOT                     |            | Implement   |                 | ICC Corridor Bus Service Improvements           |   |                                 |                               | 2010                   |         |
| <b>Montgomery County</b> |            |             |                 |   |   |                                 |                               |                        |         |
| Mont.Co.                 |            |             |                 | Clarksburg Transit Center                       | Clarksburg                                  |                                 |                               | 2015                   | No      |
| Mont.Co.                 | MCT4       | Construct   | N/A             | Four Corners Transit Center                     | US 29/MD 193                                |                                 | No                            | 2015                   | No      |

**Appendix-B**  
**2007 CLRP and FY2008-2013 TIP AIR QUALITY**  
**CONFORMITY INPUTS**  
**(Transit)**

| Agency          | Project ID | Improv.   | Environ. Review | Facility  | From  | To                                    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|-----------------|------------|-----------|-----------------|---|---|---------------------------------------|-------------------------------|------------------------|---------|
| Mont.Co.        |            |           |                 | Metropolitan Grove Transit Center                     | Vicinity of Watkins Mill Road and MD 117                      |                                       |                               | 2015                   | No      |
| Mont.Co.        | MCT16      |           |                 | NIH Naval Medical Transportation Management           | Bethesda  |                                       |                               |                        | No      |
| Mont.Co.        |            |           |                 | Norbeck Road Bus Enhancement                          |   |                                       |                               | 2020                   | No      |
| Mont.Co.        |            |           |                 | Norbeck Road Park and Ride                            | Norbeck Road at Georgia Avenue adjacent to or north of MD 108 |                                       |                               | 2015                   | Yes     |
| Mont.Co.        | MCT7       | Construct | N/A             | Olney Transit Center                                  |   |                                       | No                            | 2015                   | No      |
| Mont.Co.        |            |           |                 | Randolph Road Bus Enhancement                         |   |                                       |                               | 2010                   | No      |
| Mont.Co.        |            | Construct |                 | University Blvd Bus Enhancement                       | Kensington  | Silver Spring                         | No                            | 2020                   | No      |
| Mont.Co.        | MCT22      | Construct |                 | Veirs Mill Road Bus Enhancement                       | Rockville   | Wheaton                               | No                            | 2020                   | No      |
| <b>Virginia</b> |            |           |                 |   |   |                                       |                               |                        |         |
| VDOT            |            | Widen     | Pending         | US 1 (bus/right-turn lanes)                           | VA 235 North  | SCL Alexandria (I-95 Capital Beltway) | No                            | 2025                   | No      |
| VDOT            |            | Study     | Pending         | Circumferential Metro Rail                            | Dunn Loring   | American Legion Bridge                | No                            | not coded              | No      |
| Arlington Co.   |            | Construct | Pending         | Crystal City / Potomac Yard Busway (2-lane) Segment 1 | Vicinity of Glebe Rd. Ext.- City/County line                  | 26th St. South                        | No                            | 2008                   | Yes     |
| Arlington Co.   |            | Construct | Pending         | Crystal City / Potomac Yard Busway (2-lane) Segment 2 | 26th St. South  | Crystal City Metro Station            | No                            | 2009                   | Yes     |
| Arlington Co.   |            | Upgrade   | Pending         | Crystal City / Potomac Yard Busway to BRT             | Vicinity of Glebe Rd. Ext.                                    | Crystal City Metro Station            | No                            | 2012                   | Yes     |

**Appendix-B**  
**2007 CLRP and FY2008-2013 TIP AIR QUALITY**  
**CONFORMITY INPUTS**  
**(Transit)**

| Agency | Project ID | Improv.   | Environ. Review | Facility                                   | From   | To                                    | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|--|--|---------------------------------------|-------------------------------|------------------------|---------|
| VDOT   |            | Study     |                 | Alexandria Bus Lanes Citywide- 3 corridors |  |                                       | No                            | not coded              | No      |
| VDOT   |            | Construct | Pending         | Potomac Yard Transit Bus lanes (2 lanes)   | Four Mile Run  | Braddock Rd.                          | No                            | 2011                   | Yes     |
| VDOT   |            | Study     | Pending         | US 1 Priority Bus                          | SCL Alexandria (I-95 Capital Beltway)                                  | King Street Metro Station             | No                            | not coded              | No      |
| VDOT   |            | Study     | Pending         | US 1 Priority Bus                          | Stafford County  | SCL Alexandria (I-95 Capital Beltway) | No                            | not coded              | No      |
| VDOT   |            | Study     |                 | US 1 Transit Service Improvements          | Stafford County Line   | Pentagon                              |                               | not coded              | No      |
| VDOT   |            | Study     | Pending         | I-495 Transit Improvements                 | Woodrow Wilson Bridge Location /Feasibility Studies for Addl. PnR Lots | American Legion Bridge                | No                            | not coded              | No      |
| VDOT   |            | Study     | PCE-1           | I-66 & I-95 corridors                      |  |                                       | Yes                           | not coded              | No      |
| VDOT   |            | Study     | Pending         | I-66 Transit Service Improvements          | Metro Stations inside I-495  | Underserved locations inside I-495    | No                            | not coded              | No      |
| VDOT   |            | Study     | Pending         | I-66 Transit Service Improvements          | Fauquier County Line   | Vienna                                | No                            | not coded              | No      |
| VDOT   |            | Study     | Pending         | I-95 Corridor Metro Rail Extension         | Lorton/Fort Belvoir  | Potomac Mills Mall                    | No                            | not coded              | No      |
| VDOT   |            | Study     | Pending         | I-95 Corridor Metro Rail Extension         | Franconia-Springfield  | Lorton/Fort Belvoir                   | No                            | not coded              | No      |
| VDOT   |            | Study     | Pending         | Light Rail                                 | Manassas   | Dulles Airport                        | No                            | not coded              | No      |
| VDOT   |            | Construct | Pending         | Metro Station (Proposed)                   | @ Potomac Yards  |                                       | No                            | 2030                   | No      |
| VDOT   |            | Study     | Pending         | Proposed EPG People Mover                  | Fort Belvoir   | Franconia/Springfield                 | No                            | not coded              | No      |



## Appendix-B

### 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Transit)

| Agency | Project ID | Improv.   | Environ. Review | Facility  | From                                    | To  | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|---|---|---|-------------------------------|------------------------|---------|
| VDOT   |            | Study     | Pending         | US 50 Transit Service Improvements                  | Eastern Loudoun County                  | Arlington County                                      | No                            | not coded              | No      |
| VDOT   |            | Study     | Pending         | VA 236 Priority Bus                                 | City of Fairfax                         | City of Alexandria                                    | No                            | not coded              | No      |
| VDOT   |            | Study     | Pending         | VA 244 (Columbia Pike) Transit Service Improvements | Baileys Crossroads                      | Pentagon  | No                            | not coded              | No      |
| VDOT   |            | Study     | Pending         | VA 7 Transit Service Improvements                   | Tysons Corner                           | Baileys Crossroads                                    | No                            | not coded              | No      |
| VDOT   |            | Study     | Pending         | VA 7100 Priority Bus                                | US 1                                    | VA 7  | No                            | not coded              | No      |
| VDOT   |            | Construct | Pending         | Transit Center (Reston)                             | Reston Town Center                      | @ Explorer Dr. & Bluemont Way                         | Complete                      | 2006                   | Yes     |
| VDOT   |            | Construct | Pending         | Transit Center (Bradlee Shopping Center)            | King St. and Braddock Rd.               |   | No                            | 2008                   | Yes     |
| VDOT   |            | Construct | Pending         | Transit Center (Seven Corners)                      | Seven Corners Shopping Center           |   | No                            | 2008                   | Yes     |
| VDOT   |            | Construct | Pending         | Park-and-Ride Lot                                   | Reston East Parking Structure           | @ Reston East Park-and-Ride Lot                       | No                            | 2011                   | Yes     |
| VDOT   |            | Construct | Pending         | Park-and-Ride Lot                                   | VA 7900 (F-S Pkwy.) PnR                 | @ Gambrill Road Location                              | Complete                      | 2006                   | Yes     |
| VDOT   |            | Construct | N/A             | Park-and-Ride Lot                                   | Dulles Corridor Park-and-Ride Lots      | Reston East at Wiehle Ave & Herndon-Monroe P & R Lots | Complete                      | 2006                   | Yes     |
| VDOT   |            | Construct | Pending         | Park-and-Ride Lot                                   | VA 7900 (F-S Pkwy.) PnR                 | @ Backlick Road North                                 | yes                           | 2007                   | Yes     |
| VDOT   |            | Reconstru | N/A             | Park-and-Ride Lot Enhancements                      | @ Reston, Centreville, West Springfield |   | Complete                      | 2006                   | Yes     |
| VDOT   |            | Construct | Pending         | Park-and-Ride Lot                                   | Springfield CBD                         | vic. I-95 & Old Keene Mill Road                       | No                            | 2011                   | Yes     |

## Appendix-B

### 2007 CLRP and FY2008-2013 TIP AIR QUALITY CONFORMITY INPUTS (Transit)

| Agency | Project ID | Improv.            | Environ. Review | Facility                                       | From                                 | To                                 | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|--------------------|-----------------|--|--------------------------------------|------------------------------------|-------------------------------|------------------------|---------|
| VDOT   |            | Relocate/Construct | Pending         | Park-and-Ride Lot (Leesburg)                   | Relocate to vic. of Leesburg Bypass  | VA 7, and / or the Dulles Greenway | Yes                           | 2007                   | Yes     |
| VDOT   |            | Construct          | Pending         | Park-and-Ride Lot                              | Purcellville                         | 100-space park-and-ride lot.       | Complete                      | 2006                   | Yes     |
| VDOT   |            | Construct          |                 | Town of Leesburg -Harrison St & Catocin Circle | Loudoun County Commuter Bus Service. | 400 Space Park & Ride Lot          |                               | 2007                   | No      |
| VDOT   |            | Construct          |                 | VA 772 (Ryan) Station                          | Loudoun County Commuter Bus Service. | 300 Space Park & Ride Lot          |                               | 2008                   | No      |
| VDOT   |            | Construct          |                 | Park-and-Ride Lot                              | Dulles Town Center                   | 100 spaces                         | Proffered                     | 2006                   |         |
| VDOT   |            | Construct          |                 | Park-and-Ride Lot                              | VA 643 east of Leesburg              | 700 spaces                         | No                            | 2009                   |         |
| VDOT   |            | Construct          |                 | Park-and-Ride Lot                              | US 50 at Stone Ridge                 | 250 spaces                         | Proffered                     | 2006                   |         |
| VDOT   |            | Construct          |                 | Park-and-Ride Lot                              | US 50 Dulles                         |                                    |                               | 2009                   |         |
| VDOT   |            | Construct          | pending         | Park-and-Ride Lot                              | VA 234 (vicinity of I-66)            |                                    | No                            | 2009                   | Yes     |
| VDRPT  |            | Construct          | Complete        | Dulles Corridor Metrorail                      | East Falls Church Metrorail Station  | Wiehle Ave.                        | No                            | 2011                   | Yes     |
| VDRPT  |            | Construct          | Complete        | Dulles Corridor Metrorail                      | Wiehle Ave. Station                  | Route 772                          | No                            | 2015                   | Yes     |
| VRE    |            | Construct          | Pending         | VRE - Cherry Hill Commuter Rail Station        | Cherry Hill                          | Prince William County              | No                            | 2010                   | Yes     |
| VRE    |            | Implement          | Pending         | Service Improvements (Reduce Headways)         | Fredericksburg and Manassas lines    |                                    | No                            | 2010                   | No      |
| VRE    |            | Study              |                 | VRE Extension                                  | Manassas                             | Gainesville (spurline)             | No                            | not coded              | No      |

**Appendix-B**  
**2007 CLRP and FY2008-2013 TIP AIR QUALITY**  
**CONFORMITY INPUTS**  
**(Transit)**

| Agency | Project ID | Improv.   | Environ. Review | Facility  | From | To | Under Const. or ROW acquired? | Complt. Date or Status | In TIP? |
|--------|------------|-----------|-----------------|---|------|----|-------------------------------|------------------------|---------|
|        |            | Implement |                 | Beltway HOT lanes transit service               |      |    | No                            | 2013                   |         |
|        |            | Implement |                 | Beltway HOT lanes transit service               |      |    | No                            | 2020                   |         |
|        |            | Implement |                 | Beltway HOT lanes transit service               |      |    | No                            | 2030                   |         |
| VDOT   |            | Implement |                 | I-95/I-395 HOV /BUS / HOT lanes transit service |      |    | No                            | 2010                   |         |
| VDOT   |            | Implement |                 | I-95/I-395 HOV /BUS / HOT lanes transit service |      |    | No                            | 2020                   |         |
| VDOT   |            | Implement |                 | I-95/I-395 HOV /BUS / HOT lanes transit service |      |    | No                            | 2030                   |         |