National Capital Region Transportation Planning Board

FY–2007 Network Documentation:
Highway and Transit Network Development

March 1, 2008

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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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1 Introduction

This report documents work activities completed by COG/TPB staff in accordance with the transportation network development element identified in the *FY-2007 Unified Planning Work Program* (UPWP). Network development activities are designed to support the latest version of the regional forecasting travel model.

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 with information provided by the regional transit providers and by state and local 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. Exhibit 1-1 presents a time-line chart of annual network development activities and the Air Quality Conformity schedule. Since transportation networks that are inputs to the conformity analysis process are developed in one fiscal year and adopted in the next, this report documents the following: 1) Version 2.1 D #50 model[1] [2] networks and data files that were developed in FY2006 as inputs to the 2006 CLRP and FY2007-2012 TIP and 2) activities begun during FY-2007 to develop Version 2.2 model[3] networks and data files for use in the analysis of the 2007 CLRP and FY2008-2013 TIP.

The remainder of Chapter 1 presents overviews of network development activities, TPB/Version2.1 D#50 transportation networks, and new network developments. Chapter 2 presents highway and rail network statistics, and major highway and transit projects coded in networks representing the 2006 CLRP and FY2007-2012 TIP. Chapter 3 describes files that support network building and fare development and file formats for each of the network files.

The Version 2.2 model includes some changes, or enhancements, to the network development and transit fare building procedures. Chapter 4 describes those changes in detail and also describes a GIS-related project that is scheduled to begin in the fall of 2007. The project will substantially impact the way in which future network development activities will be undertaken.

[1] COG/TPB Travel Forecasting Model, Version 2.1 D #50, *Calibration Report*, November 17, 2004.
[2] COG/TPB Travel Forecasting Model, Version 2.1 D #50,*User's Guide*, November 17, 2004.
[3] COG/TPB Travel Forecasting Model, Version 2.2 Specification, Validation, and User's Guide, January 19, 2007.

Exhibit 1-1: Time-Line for Network Development and Air Quality Conformity Activities

		FY-2007												FY-2008					
		July	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**	**Jan.**	**Feb.**	**Mar.**	**April**	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**
	Transportation Network Maintenance:																		
1	Review by state and local transportation agencies.																		
2	Review Model, GIS, and Systems applications.																		
3	Update GIS-based highway network database based on highway network reviews.																		
4	Solicit transit information from regional transit providers.																		
5	Update transit catalogues, transit lines and related network data files with current data.																		
	Air Quality Conformity Process:																		
6	Request CLRP and TIP project submissions.						X												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 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														X
16	Adoption of CLRP and TIP by TPB.				X														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 FY2007, work activities focused on preparing inputs for the 2007 CLRP and FY 2008 to 2013 TIP, and included the following tasks;

- Development of conformity documentation listings and data files of projects received from programming agencies for the 2007 CLRP and FY 2008 to 2013 TIP;

- Update of the highway database and GIS highway network, and the generation of 2010, 2020, and 2030 highway networks by database filtering;

- Network reviews for accuracy and rebuilding networks for modeling;

- Updating and editing transit files to 2010, 2020, and 2030 conditions based on 2007 CLRP and FY2008-2013 TIP inputs and current transit network files for 2006; 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, SAS, and FORTRAN programs to update, build, and generate highway network files, to summarize files, and to check the integrity and accuracy of the files. Automated checking procedures insure 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 databases at COG to develop network files in a more accurate and consistent manner.

1.2 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[4], 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 centriod connectors). Roads can be 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.

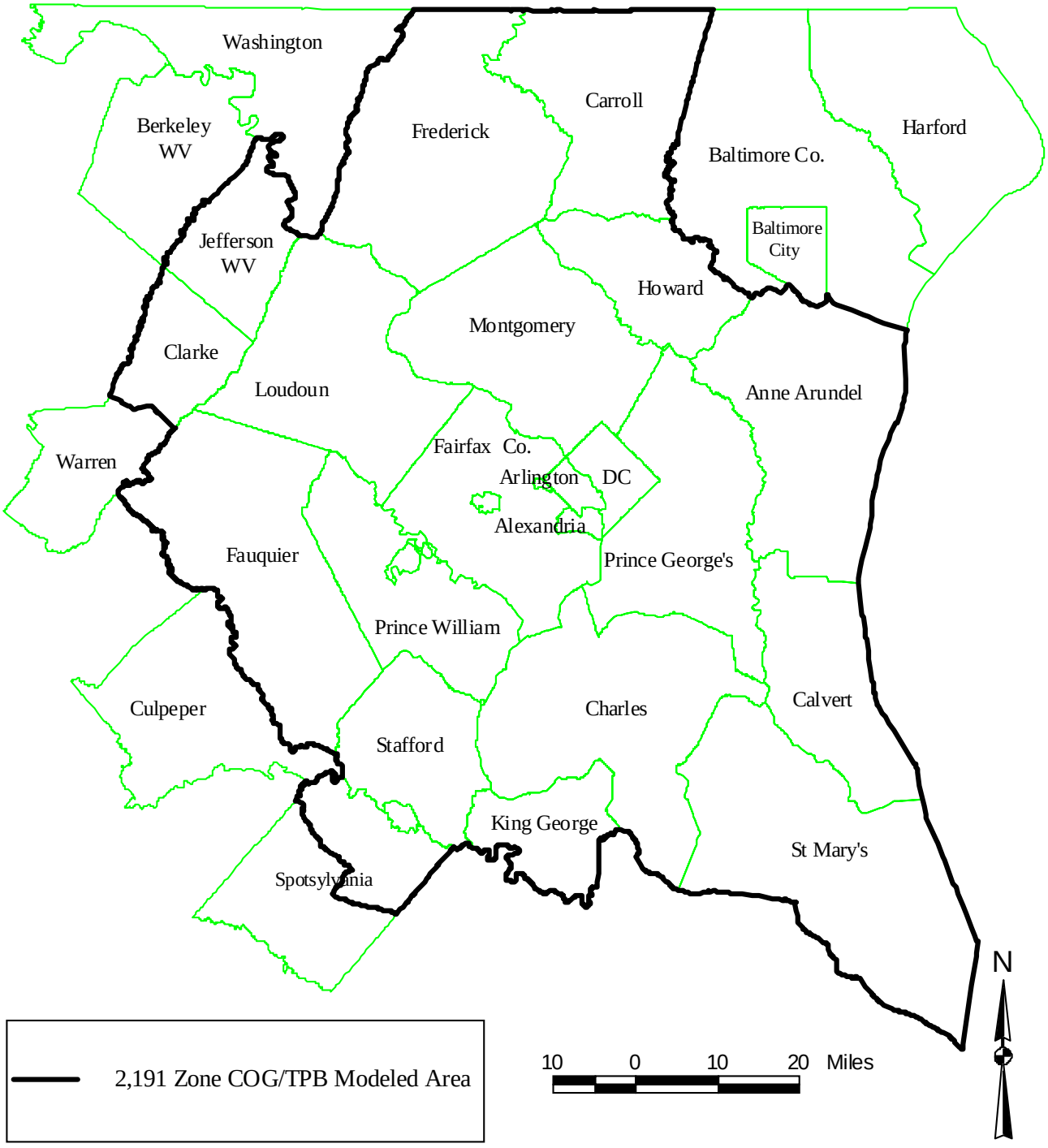
Beyond the design of the zone system, transportation networks are developed with two basic considerations: the requirements of the transportation model, and the requirements and/or constraints of the software used to apply the model. Networks are used to estimate service levels (e.g., travel times and 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.

The Version 2.1 D #50 model requires AM peak and off-peak transit and highway networks at zonal level for trip distribution and mode choice modeling steps. A PM highway network is also required as a component of the traffic assignment process. The files that result from the COG/TPB network development process for the purposes of modeling 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 2.1 D #50 model are described in greater detail in Chapter 3.

[4] 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.

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



1.3 Overview of Version 2.1 D #50 Model Networks

The Version 2.1 D #50 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). 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.

In developing transit headways, the one-hour time period from 7:00 AM to 7:59 AM[5] 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. 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. Chapter 3 describes files that support network building and fare development in greater detail.

1.4 New Network Developments

This section details refinements that were made in FY-2006 to transportation networks that were inputs to the 2006 CLRP and FY2007-2012 TIP, approved by the TPB in October 2006, and subsequent updates that were made in FY-2007. The updates for FY-2006 are summarized below:

- New node ranges were defined for facilities modeled in the Regional Mobility and Accessibility Study's "Variably Priced Lane Scenario".

- The column length for the link-based toll facility type variable (TOLLGRP) was expanded to facilitate a numbering scheme employed in Variably Priced Lane Scenario networks. Columns 66-69 are now used in the highway network link file. This change was formalized later in the Version 2.2 model.

- The "Circulator" service in the District of Columbia and "REX" service in Fairfax County were added to networks.

[5] 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.

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In FY-2007, the COG/TPB Version 2.2 regional travel demand model was unveiled. The new model is very similar in structure and operation to the TPB's existing travel model, Version 2.1D#50. However, the refinements now incorporated into the Version 2.2 model are numerous and affect each step of the modeling chain to varying degrees. These refinements were made to networks for use in the air quality analysis of the 2007 CLRP and FY-2008-2013 TIP and are described in Chapter 4.

1.5 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 ranges to jurisdictions is shown in Exhibit 1-3 (Note, the district area system shown in Exhibit 1-3 is not used in current models). 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 for highway and transit network updates. Highway node ranges have been developed by jurisdiction, and are further distinguished by general use facilities, HOV facilities, interchange ramps, and Variably Priced Lane facilities.

The last highway node range expansion was made to include Virginia Beltway HOT lanes (node range 23,000 to 23,499). The system has been expanded again to include additional highway facilities modeled in the Regional Mobility and Accessibility Study. The new node number range for HOT lane and Toll facilities is now 23500 to 29,999.

Node ranges corresponding to transit network elements (Metrorail, Commuter rail, and Light rail station nodes) were expanded last year for use in the Regional Mobility and Accessibility Study. Node numbers between 20,000 and 22,999 were allocated for LRT (light rail transit) and Transitway stations. Bus park-and-ride nodes were added to support the Regional Mobility and Accessibility Study and parking lots that began operations in 2006.

V2.1D#50 and V2.2 model FORTRAN computer programs and TP+ scripts have been updated to accommodate increased node ranges. The current highway and transit network node ranges are summarized in Exhibit 1-6.

Exhibit 1-3: Equivalence Table for TAZ, Districts, and Jurisdictions for the Modeled Area

	Expanded Cordon 2,191 Zones / 487 Districts						
Jurisdiction	Juris. Code	Zone Range	No. of Zones	Unused Zones	District Range	No. of Districts	Unused Districts
District of Columbia	0	1-319	319	-	1-35	35	36-40
Montgomery Co., Md.	1	320-627	308	628-639	41-75	35	76-80
Prince George's Co., Md.	2	640-1020	381	1021-1029	81-124	44	125-129
Arlington Co., Va.	3	1230-1311	82	1312-1329	245-260	16	261-265
City of Alexandria, Va.	4	1330-1389	60	1390-1399	266-271	6	272-276
Fairfax Co., Va.	5	1400-1755	356	1756-1779	277-316	40	317-321
Loudoun Co., Va.	6	1780-1905	126	1906-1919	322-343	22	344-348
Prince William Co., Va.	7	1920-2061	142	2062-2069	349-368	20	369-373
(Unused)	8						
Frederick Co., Md.	9	1030-1053	24	1054-1059	130-150	21	151-155
Howard Co., Md.	10	1080-1099	20	1100-1109	170-176	7	177-181
Anne Arundel Co., Md.	11	1110-1142	33	1143-1149	182-198	17	199-203
Charles Co., Md.	12	1200-1223	24	1224-1229	226-239	14	240-244
(Unused)	13						
Carroll Co., Md.	14	1060-1073	14	1074-1079	156-164	9	165-169
Calvert Co., Md.	15	1150-1163	14	1164-1169	204-209	6	210-214
St. Mary's Co., Md.	16	1170-1190	21	1191-1199	215-220	6	221-225
King George Co., Va.	17	2070-2074	5	2075-2079	374-378	5	379-383
City of Fredericksburg, Va.	18	2100-2101	2	2102-2104	398	1	399-400
Stafford Co., Va.	19	2080-2093	14	2094-2099	384-392	9	393-397
Spotsylvania Co., Va.	20	2105-2110	6	2111-2114	401-404	4	405-409
Fauquier Co., Va.	21	2115-2125	11	2126-2129	410-418	9	419-423
Clarke Co., Va.	22	2130-2132	3	2133-2134	424-426	3	427-431
Jefferson Co., W.Va.	23	2135-2141	7	2142-2144	432-435	4	436-440
Total Internal Zones			**1972**			**333**	
External Stations		**2145-2191**	**47**		**441-487**	**47**	
Total Zones / Stations			**2019**			**380**	
(Total Used & Unused)			*2191*			*487*	

Ref: ModeAbrevFY06.xls

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

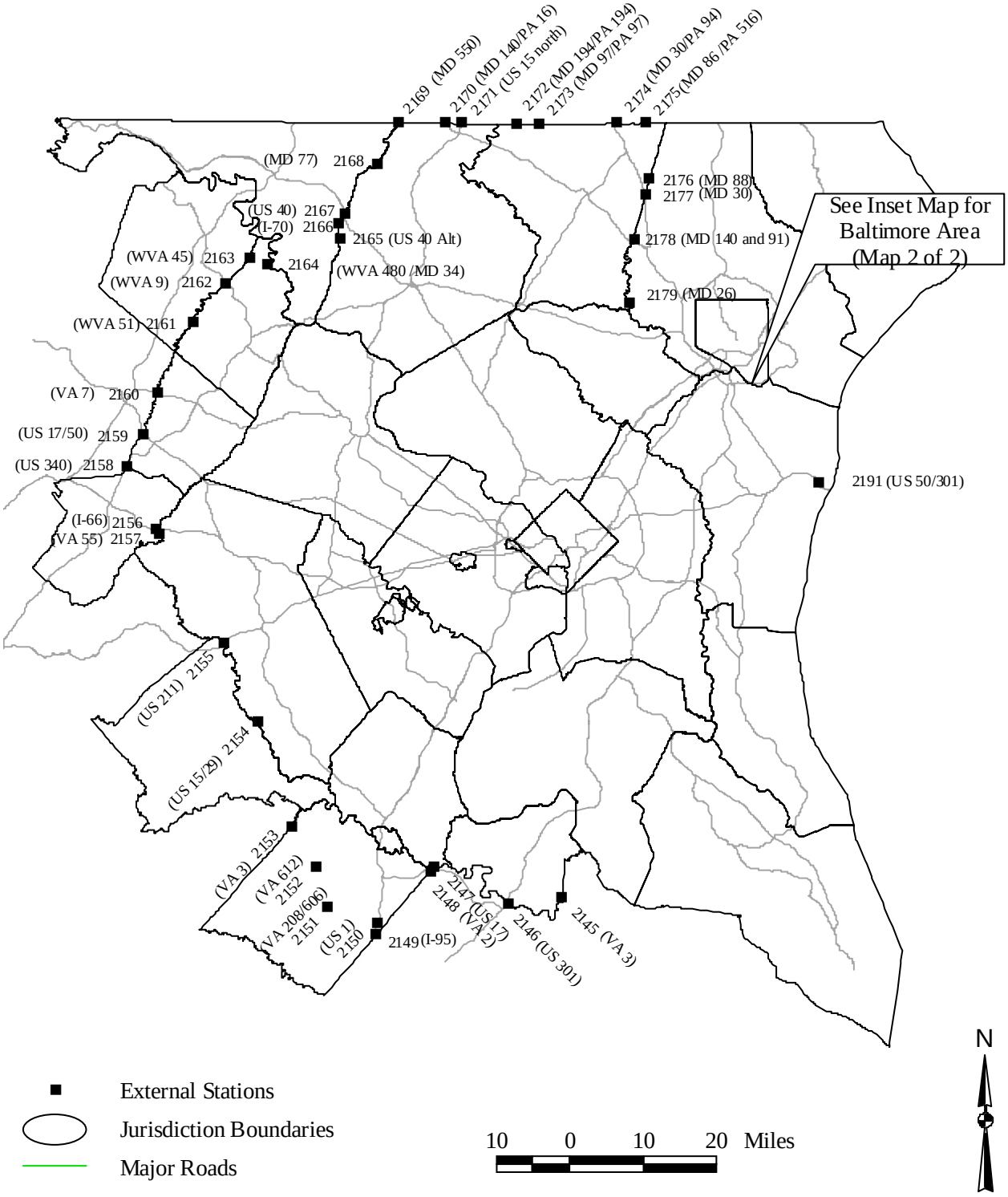

2169 (MD 550)
2170 (MD 140/PA 16)
2171 (US 15 north)
2172 (MD 194/PA 194)
2173 (MD 97/PA 97)
2174 (MD 30/PA 94)
2175 (MD 86 /PA 516)
(MD 77) 2168
2176 (MD 88)
2177 (MD 30)
See Inset Map for Baltimore Area (Map 2 of 2)
(US 40) 2167
(I-70) 2166
2165 (US 40 Alt)
2178 (MD 140 and 91)
(WVA 45) 2163
2164
(WVA 480 /MD 34)
(WVA 9) 2162
2179 (MD 26)
(WVA 51) 2161
(VA 7) 2160
(US 17/50) 2159
(US 340) 2158
2191 (US 50/301)
(I-66) 2156
(VA 55) 2157
(US 211) 2155
(US 15/29) 2154
(VA 3) 2153
(VA 612) 2152
VA 208/606) 2151
(US 1) 2150
2149 (I-95)
2147 (US 17)
2148 (VA 2)
2146 (US 301)
2145 (VA 3)
External Stations
Jurisdiction Boundaries
Major Roads
10 0 10 20 Miles
N

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

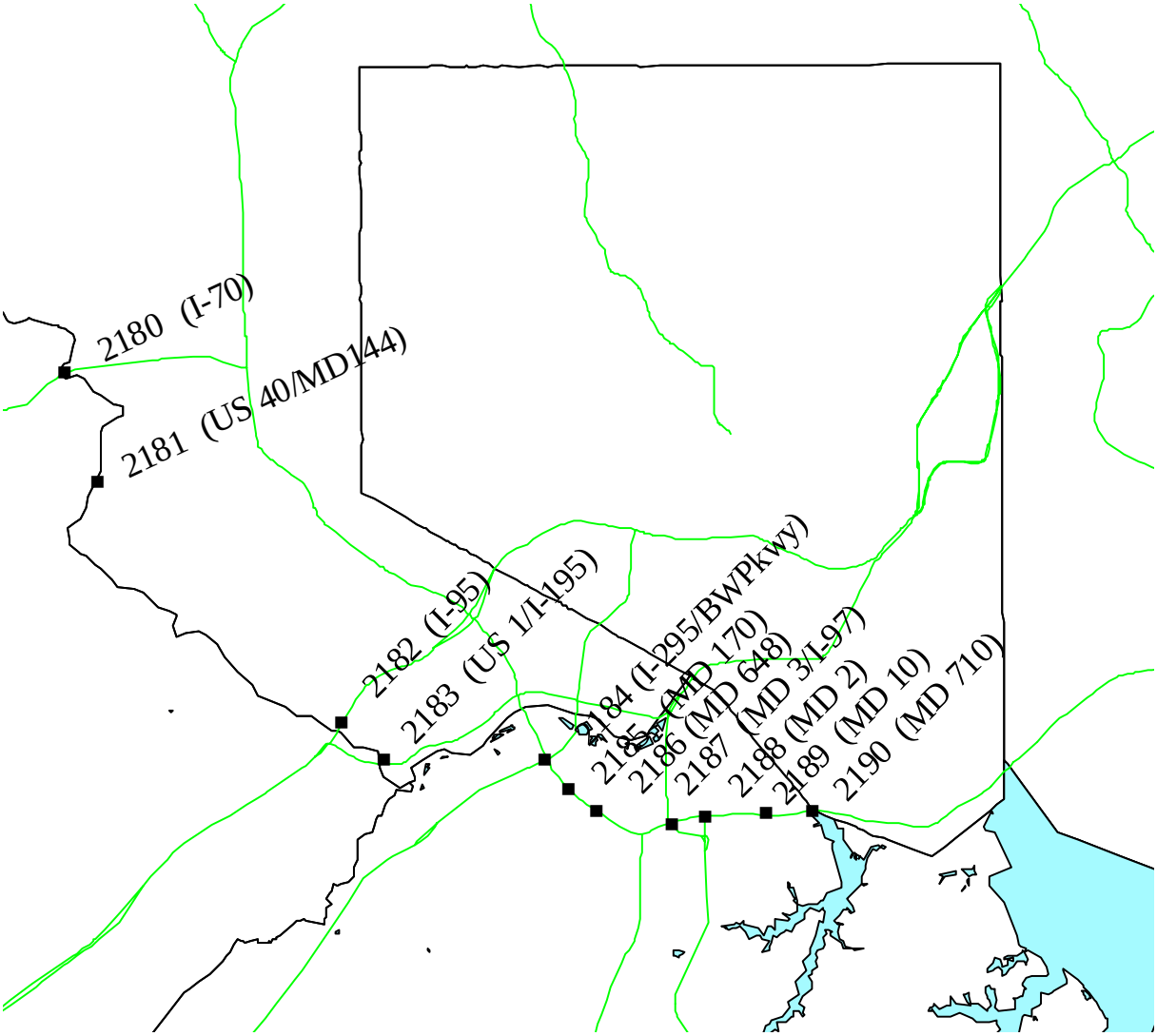


Exhibit 1-6: Node Ranges for the Modeled Area

I. Zone Centroids			
A. Zones	1	-	2191
II. Highway Nodes: General Use (Non-HOV) Facilities			
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

Ref: c7exh1-6.xls

Exhibit 1-6: Node Ranges for the Modeled Area

III. Highway Nodes: HOV Facilities			
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
IV. Highway Nodes: Interchange Ramps			
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: c7exh1-6.xls

Exhibit 1-6: Node Ranges for the Modeled Area

V. Highway Nodes: Regional Variably Priced Lanes				
1. Capital Beltway (I-495/I-95) Inner Loop	23000			Hot-Toll Lanes
	23002			Hot-Toll Lanes
	23004			Hot-Toll Lanes
	23006	-	23093	Hot-Toll Lanes
1a. Capital Beltway (I-495/I-95) Outer Loop	23001			Hot-Toll Lanes
	23003			Hot-Toll Lanes
	23005			Hot-Toll Lanes
	23101	-	23196	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 Chesapeak Bay Bridge) East-bound	23500	-	23561	Toll Lanes
4a. US Route 50 (I-395 to Chesapeak Bay Bridge) East-bound	23580	-	23591	Parallel General Lanes
4b. US Route 50 (I-395 to Chesapeak Bay Bridge) West-bound	23600	-	23669	Toll Lanes
4c. US Route 50 (I-395 to Chesapeak 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	Toll Facility
	15476	-	15599	Toll Facility
	18500	-	18649	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

Exhibit 1-6: Node Ranges for the Modeled Area

V. Highway Nodes: Regional Variably Priced Lanes continued				
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
Bridges	**A-Node**	-	**B-Node**	
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

Ref: c7exh1-6.xls

Exhibit 1-6: Node Ranges for the Modeled Area

VI. Transit Nodes: Metrorail	
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
VII. Transit Nodes: Commuter Rail	
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
VIII. Transit Nodes: Light Rail	
A. Stations	7656 - 7699
B. Reserved Future Light Rail stations	20000 - 22999
C. Parking Lots	7856 - 7873
	8271 - 8298
D. Reserved for Future Parking Lots	7874 - 7899
IX. Transit Nodes: Bus Park-and-Ride Lots	
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: c7exh1-6.xls

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

The Constrained Long-Range Transportation Plan (CLRP) is the long-term plan for transportation projects 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 plan extends at least 20 years into the future and the current 2006 CLRP extends to horizon year 2030.

The Transportation Improvement Program (TIP) is a six-year subset of the CLRP that represents the first six years of the CLRP. The current TIP represents fiscal years 2007 to 2012. 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.

Last fiscal year, work activities focused on;

- Development of conformity documentation listings and data files of projects received from programming agencies for the 2006 CLRP and FY 2007 to 2012 TIP;
- Update of the highway database and GIS highway network, and the generation of 2010, 2020, and 2030 highway networks by database filtering;
- Network reviews for accuracy and rebuilding networks for modeling;
- Updating and editing transit files to 2010, 2020, and 2030 conditions based on 2006 CLRP and FY2007-2012 TIP inputs and 2005 transit network files; and
- Revising highway network toll assumptions and updating transit fares as necessary.

2.1 Highways

At a minimum, the 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).

The base-year (2000) network is comprised of 19,913 directional (one-way) links, excluding centriod connectors. There are 19,960 directional links in the year 2002 network and 20,665 links in the 2010 network. The 2020 and 2030 networks contain 20,961 links and 20,980 links respectively. These statistics are based networks modeled for analysis of the 2006 CLRP and FY2007-2012 TIP. Exhibit 2-1 presents highway and rail network statistics for improvements coded in the 2006 CLRP and FY2007-2012 TIP.

Exhibit 2-1: Highway and Rail Network Statistics for Improvements Coded in the 2006 CLRP and the FY-2007-2012 TIP (modeled area)

RAIL AND ROAD MILES

(modeled area)

	LOV LANE MILES TOTAL	HOV/HOT LANE MILES TOTAL	METRORAIL MILES TOTAL	MD/DC* NON-METRO RAIL MILES TOTAL	VA** NON-METRO RAIL MILES TOTAL
2002	19,234	196	96	116	95
2010	20,581	307	106	132	95
2020	21,702	370	131	149	95
2030	21,963	370	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

Ref: c7exh2-1.xls

The 2006 CLRP and FY 2007-2012 TIP adds eight regionally significant projects inside the TPB planning area. These projects include two studies: Maryland's I-495 Capital Beltway Mobility Study-Southside and Virginia's I-395/I-95 HOT lanes (PPTA). The remaining projects include the reconstruction and widening of the 11th Street Bridges and South Capital Street Bridge respectively, in the District of Columbia, and projects on I-66 and I-270. These projects are presented in detail in Exhibit 2-2.

Exhibit 2-3 presents a sample of major highway improvements (facility type 2 and above) coded in the networks representing the 2006 CLRP and the FY 2007-2012 TIP. The exhibit is divided into five sections, one for each network scenario. The first section of the exhibit lists projects modeled in year 2000 networks. For example, in 2000 network, the Dulles Greenway (Eastbound) had been widened between VA 772 (Exit 6) and VA 28 (Sully Road). In networks for 2002, 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

Major highway improvements programmed for completion beyond those in the 2000 and 2002 networks are also listed in Exhibit 2-3. A majority of the major projects are slated for completion by 2010 and 2020. A complete list of highway projects that were modeled in the analysis of the 2006 CLRP and the FY 2007-2012 TIP is presented in Appendix A.

Exhibit 2-2: Significant Changes for the 2006 CLRP/FY2007-2012 TIP (Projects inside the TPB Planning Area)

ID	Agency	Improvement	Facility	From/At	To	Completion Date	Fac. Type		# Lanes	
							from	to	from	to
VIRGINIA										
1	VDOT	Reconstruct	I-66 @ VA 28	Eliminate 2 turn movements: EB I-66 to SB VA 28 and NB VA 28 to WB I-66		2008	1	1	--	--
2	VDOT	Study	I-495 (Capital Beltway Mobility Study -southside)	MD 5	Springfield Interchange	not coded				
3	VDOT	Study	I-395/I-95 HOT lanes (PPTA)	VA/DC line	Massaponax	not coded				
DC										
4	DDOT	Widen	S. Capitol St. Bridge Corridor Frederick Douglass Bridge	(see description sheet)		2015	1	1	5	6
5	DDOT	Construct	S. Capitol St. Bridge Corridor Suitland Parkway Interchange	@ MLK Jr. Blvd. to complete movements		2015	1	1	--	--
6	DDOT	Reconstr/Widen	11th St. Bridges	(see description sheet)		2011	1	1	8	10+2 aux
7	DDOT	Construct	11th St. Bridges	Ramp movements to/from the northbound Anacostia Freeway		2011	1	1		
MARYLAND										
8	MDOT	Construct	I-270 Interchange	@ Newcut Rd.		2010	1	1	--	--

Ref: C7EXH2-2.xls

Exhibit 2-3: Major Highway Improvements in the 2006 CLRP and 2007-2012 TIP

Network	Facility/Service	Improv.	From	To	Facil. Type	Lanes	Comp Year
2000							
	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
2002	**Same as 2000, plus:**						
	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
2010	**Same as 2002, plus:**						
	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
	VA 7100 (Fairfax County Parkway)	Construct	VA 4600 (Fullerton Road)	VA 7900 (Franconia-Springfield Parkway)	1	6	2009
	I-95/I-495 Woodrow Wilson Bridge	Widen	MD 210 Interchange	US 1	1	12	2009
	I-95 (provide 4th lane)	Widen	Newington	VA 123	1	8	2009
	I-495 HOT Lanes	Construct	I-395	S. of VA 193 (Georgetown Pike)	1	8+4	2010
	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	-	2010
	I-495 HOT Lanes Interchange	Construct	All movements	at VA 123 (Chain Bridge Road)	1	-	2010
	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	-	2010
	I-495 HOT Lanes Interchange	Construct	HOT movements to and from South Only	at VA 29 (Lee Highway)	1	-	2010
	I-495 HOT Lanes Interchange	Construct	All movements	at VA 620 (Braddock Road)	1	-	2010
	Ramps connecting the existing I-95 / I-395 HOV lanes on Shirley Highway to proposed HOT lanes on the Capital Beltway	Construct	Form I-95 / I-395 HOV lanes to I-495 HOT lanes		1	-	2010
	I-95/I-495 (Capital Beltway)	Construct	Arena Drive Interchange		1	8+2	2010
	I-95/I-495 (Capital Beltway)	Construct	Branch Avenue Metro Access		1	8	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
	ICC	Construct	I-270	I-95 / US 1	1	6	2010
	MD 4	Widen	MD 223	I-95/I-495	1	6	2010
	MD 5 (Branch Avenue)	Upgrd/Widen	US 301	North of Capital Beltway	5	6	2010
	MD 2/4 at Lusby Southern Connector Road	Construct	MD 765	MD 2/4 at Lusby	2	3	2010

Ref: FY0712Tip06CLRPImprov_Exh2-3.xls

Exhibit 2-3: Major Highway Improvements in the 2006 CLRP and 2007-2012 TIP (Continued)

Network	Facility/Service	Improv.	From	To	Facil. Type	Lanes	Comp Year
2020	**Same as 2010, plus:**						
	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 234 (Manassas Bypass)	Construct	I-66	Loudoun County Line	1	6	2012
	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
	VA 28 PPTA (Phase II)	Widen/Upgrd	I-66	VA 7	1	8	2010
	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 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
2030	**Same as 2020, plus:**						
	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 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: FY0712Tip06CLRPImprov_Exh2-3.xls

2.2 HOV/HOT Lane Facilities

Existing and planned HOV lane facilities are described in this section. Networks for the year 2000 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). I-66 HOV lanes operated from Route 234 to the Potomac River (combination diamond lanes and exclusive right-of-way 2+ minimum occupancy requirement). 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).

These two abovementioned facilities are captured in 2010 networks that also include an extension of HOV lanes on I-66 to US 29 Gainesville, HOV lanes on I-395 and I-95 that are constructed and re-striped to a three lane capacity, and the operation of HOV lanes on VA 7100 (Fairfax Parkway) and VA 7900 (Franconia-Springfield Parkway). The 2010 networks also include HOT lanes on I-495 (Capital Beltway) from I-395/I-95 to South of Georgetown Pike. 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 lanes continues and an attempt to maximize their efficiency in moving vehicles. HOV facilities are extended on I-66, I-95, and I-270. The construction of HOV lanes also occur on the Woodrow Wilson Bridge, I-495, and the Fairfax County Parkway. No new projects are added to networks for 2030. A complete list of HOV and HOT lane facilities are presented in Exhibit 2-4.

Exhibit 2-4: HOV/HOT Facilities Coded in the 2006 CLRP and the FY2007-2012 TIP

Network	Facility	Improvement	Limits	Occupancy Requirements	Comp. Year
2000					
	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
2002	**Same as 2000:**				
2010	**Same as 2002 (except, all HOV facilities were tested as HOV 3+) Plus:**				
	US 50	Construct	E. of US 301 / MD 3 to E. of I-95/I-495	3+	Completed
	I-66	Construct	VA 234 (Business) to VA 234 (PW.Pkwy.)	3+	Completed
	I-66	Construct	US 29 to VA 234	3+	2010
	I-395	Widen	14th Street Bridge to I-495 (3 HOV Lanes)	3+	2010
	I-95	Re-Stripe	I-495 to Quantico Creek (3 HOV lanes)	3+	2010
	I-95 W. Wilson Bridge	Construct	US 1 (VA) to MD 2010	3+	2010
	I-495 (HOT)	Construct	I-395/I-95 to S. of Georgetown Pike	3+	2010
	VA 7100 (Fairfax County Pkwy.)	Widen	Rugby Road to I-66	3+	2010
	VA 7900 (Fran./Sprfld. Pkwy.)	Construct	Fairfax County Pkwy. to Frontier Drive	3+	2010
2020	**Same as 2010 Plus:**				
	I-95 W. Wilson Bridge	Construct	VA 241 (Telegraph Rd) to US 1 (VA)	3+	2011
	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.)	Construct	VA 267 (Dulles Toll Rd.) to Rugby Rd.	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
	I-270	Const./Re-sign	Shady Grove Metro to I-70	3+	2020
2030	**Same as 2020 Plus:**				
	No new projects modeled				

Ref: c7exh2-4.xls

2.3 Transit Service

Major transit improvements are also programmed for completion in 2006 CLRP and FY-2007-2012 TIP. These transit facilities, services, and improvements are shown in Exhibit 2-5. Base year networks for 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.

Although completed prior to 2005, the 2010 transit network includes the Blue Line Metrorail extension from Addison Road to Largo, the New York Avenue Station on the Red Line between Union Station and Rhode Island Avenue Stations, and extension of MARC service from Point of Rocks to the City of Frederick 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. By 2010, WMATA plans to change 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 in operation from the COMSAT Station to Shady Grove Metrorail Station in Montgomery County.

The 2030 transit network adds one transit project; 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.

Geographic areas that are analyzed as a part of air quality conformity assessment are presented in Exhibit 2-6. 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 of the Maryland Department of Transportation (MDOT) and the BMC. These counties are included within the travel demand at the MSA (non-attainment) level, but emissions within Carroll, Howard, and Anne Arundel counties are removed from the analysis.

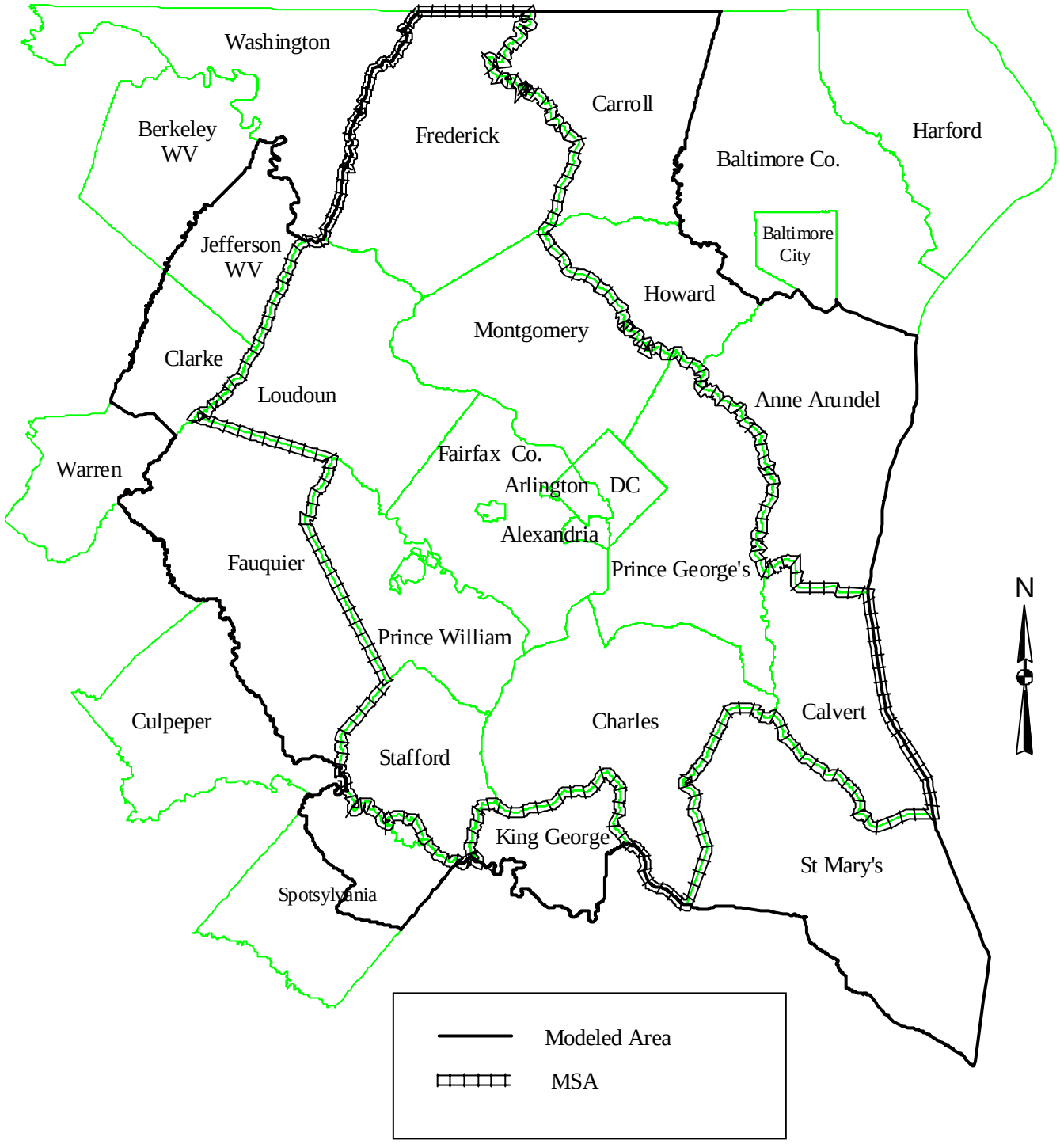
Inputs from Charles County and Calvert County are also provided by MDOT and are included in the analysis. An analogous situation exists in Virginia with Clarke, Fauquier, Spotsylvania, and King George counties, and in West Virginia with Jefferson County.

Exhibit 2-5: Major Transit Facilities, Services, and Improvements in the 2006 CLRP and the FY2007-2012 TIP

Network	Facility/Service	Improvement	Limits	Comp Year
2000	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
2002	**Same as 2000 base, plus the following:**			
	Metrorail, Blue Line	Construct	Addison Road to Largo	Completed
	MARC, City of Frederick Line	Construct	Frederick to Point of Rocks	Completed
	Express Bus - BRT Elements	Upgrade Service	E. Falls Church Metrorail Sta. to VA 772	Implimented
2010	**Same as 2002, plus the following:**			
	Metrorail, Red Line	Construct	NY Avenue Station	Completed
	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
	Crystal C./Potomac Yard Busway	Construct	26th Street to Crystal City Metro Station	2008
	VRE Commuter Rail	Upgrade Service	Fredericksburg and Manassas Lines	2010
	ICC Corridor Bus Service Improvem	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
	Revised Metrorail Operating Plan	Modify	Blue and Orange Lines	2010
2020	**Same as 2010, plus the following:**			
	Dulles Corridor Rail	Construct	E. Falls Church Metrorail Sta. to Wiehle Ave. Sta.	2011
	Bi-County 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
	Metrorail Station (Proposed)	Construct	Potomac Yards Station	2015
	Dulles Corridor Rail	Construct	Wiehle Ave. Sta. To VA 772 Station	2015
	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
2030	**Same as 2020**			
	US 1 (bus\right-turn lanes)	Widening	Va 235 North to SCL Alex. (I-95 Capital Beltway)	2025

Ref: C7Exh2-5.xls

Exhibit 2-6: COG/TPB Modeled Area and Metropolitan Statistical Area
Washington, D.C. – Maryland – Virginia



Ref: C7Exh2-6.xls

3. Version 2.1 D #50 Model Network Files

This chapter describes files that support network building and fare development in greater detail. The Version 2.1D#50 model was employed in the air quality conformity assessment of the 2006 CLRP and FY2007-2012 TIP. 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 currently 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[1]. The off-peak period frequencies are based on service occurring between 10:00 AM-2:59 PM. Zone-level transit fares for both the AM and off-peak time periods are developed and used in the mode choice process. Ultimately, the process 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. The network and fare development process supporting the Version 2.1 D #50 model requires files, in text format, which support 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. Computer files and their associated network development steps are shown in Exhibit 3-1, and further discussion is provided in the Version 2.1 D #50 model User's Guide.

Exhibit 3-1: List of Network Files Prepared for the Version 2.1 D #50 Model

Input Type	Filename	Description	Text or Binary
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

[1] 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.

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 system currently 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 modules exist; 1) a conformity table comparison procedure, that relates a modified conformity table to the database and updates the database with project completion dates, facility type, and number of lanes, 2) network editor, for making changes and/or additions, and 3) network builder, to create network files for any year. The process allows all changes to the highway system to be maintained in a single database and is able to generate a highway link and node file for any specified year beyond the base year (i.e. 2001 or beyond). Highway network link distances are also calculated (in feet) in the process and are developed from arcs built on TIGER centerline files. Exhibit 3-2 shows an unmodified sample page from a CLRP/TIP conformity table that is used in the comparison procedure.

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. Each link is assigned three lane codes and three limit codes, corresponding to each modeled time period. During network building, lane and limit values are selected in the development of the three files. Limit codes are presented below:

Limit Code	**Vehicles Allowed**	**Vehicles Disallowed**
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

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.

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

Ref: c7exh3-2.xls

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
MDSHA	MI2r	Reconstruc	Approved	I-270	Interchange at MD 117 including park and ride lot		1	1	8	8	Completed	2004	Yes
MDSHA	MI2q	Construct	Approved	I-270	Interchange at Watkins Mill Road Extended		1	1	8	8+2	No	2020	Yes
MDSHA	MI2n	Recon/Cor	Approved	I-270 (East Spur)	Rockledge Dr. Connector and MD 187		1	1	6	6	Completed	2004	Yes
MDSHA	MI2l	Recon/Cor	Approved	I-270 (West Spur)	Interchanges at Democracy Blvd and Westlake Terrace		1	1	6	6	Completed	2004	Yes
MDSHA	MI2SHOV MI2S	Construct	Pending	I-270/US 15 Corridor	Shady Grove Metro	I-70	1	1	varies		No	2020	Yes
MDSHA	MI4	Widen	Approved	I-70 - Phases 2B, 2C, 2D, 3, 4, and East St. Extension	Mount Phillip Road	MD 144FA	1	1	4	6	No	2010	Yes
MDSHA	MI4c	Construct	Approved	I-70 (Phase IIA)	MD 85 Extended/MD 355		2	2	0	4	Completed	2005	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		1	1	8	8	No	2010	Yes
MDSHA	MI1p	Construct	Pending	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	MD 210 Interchange	Virginia Line	1	1	6	12	Yes	2008	Yes
MDSHA	MI1m	Construct	Pending	I-95/I-495/Arena Drive Interchange	MD 214	MD 202	1	1	8	8+2	No	2010	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
MDSHA	MP12	Construct	Pending	Intercounty Connector	I-270	I-95 / US 1	0	1	0	6	No	2010	Yes
VDOT	VI3b	Restripe	PCE-1	I-395 HOV (3 lanes total)	I-95	DC	1	1	2	3	No	2010	No
VDOT	VI13c	Study	PCE-1	I-395 HOV ramp connections	HOV access in Alexandria		1	1	-	-	No	not coded	No
VDOT	VI4i	Construct	EA-2	I-495 HOT (peak)	I-395	S. of VA 193 (Georgetown Pike)	1	1	8	8+4	No	2010	Yes

Limit codes are also used to model HOV operations, truck prohibitions (primarily on Parkways), I-66 inside the beltway and other designated facilities, and streets that are added to the networks to enable transit routes to be coded accurately relative to zonal activity centers. 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. Schematics of HOV/HOT lane facilities coded in 2030 networks and links where trucks are prohibited are shown in Exhibits 3-3 and 3-4, respectively.

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

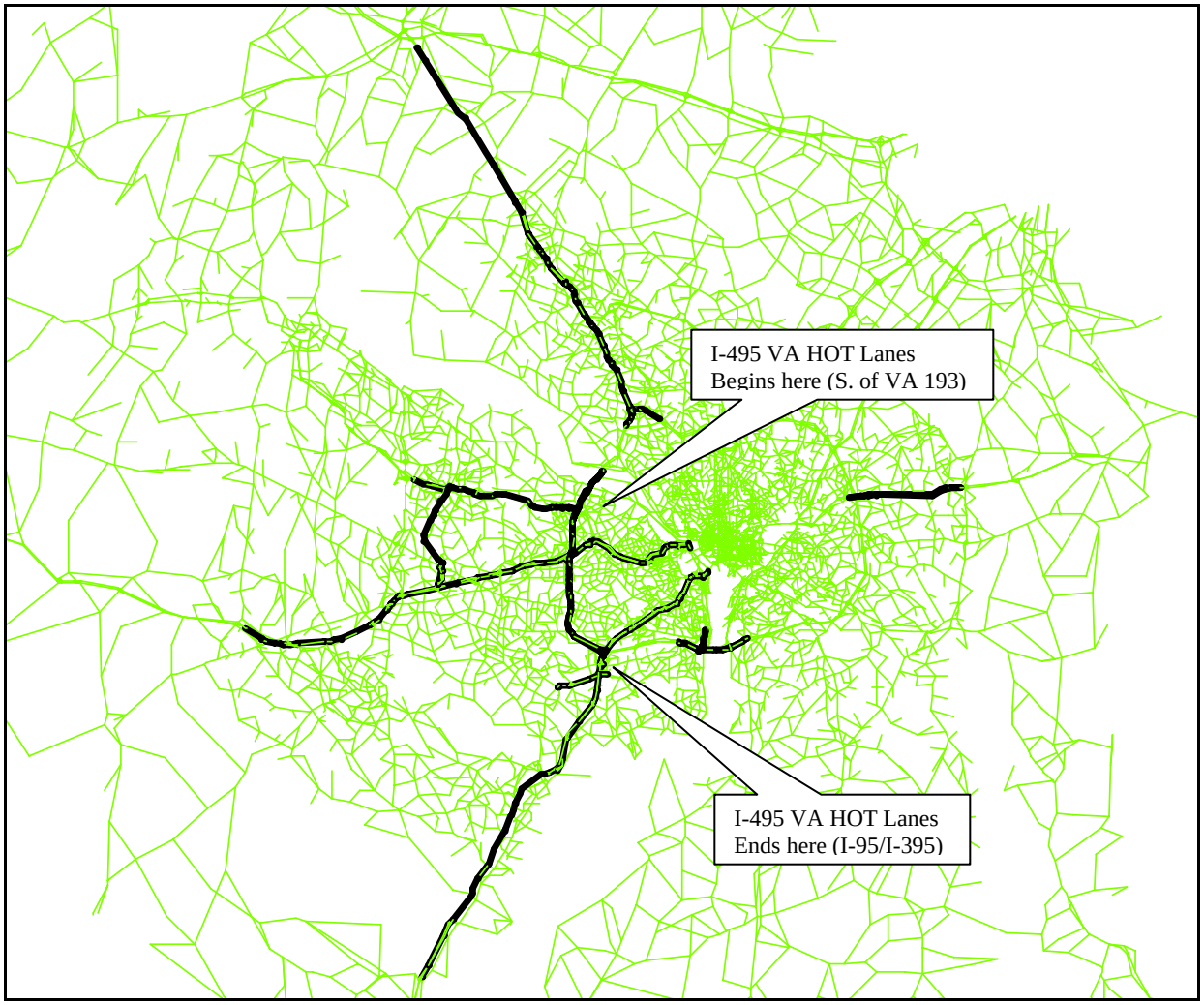
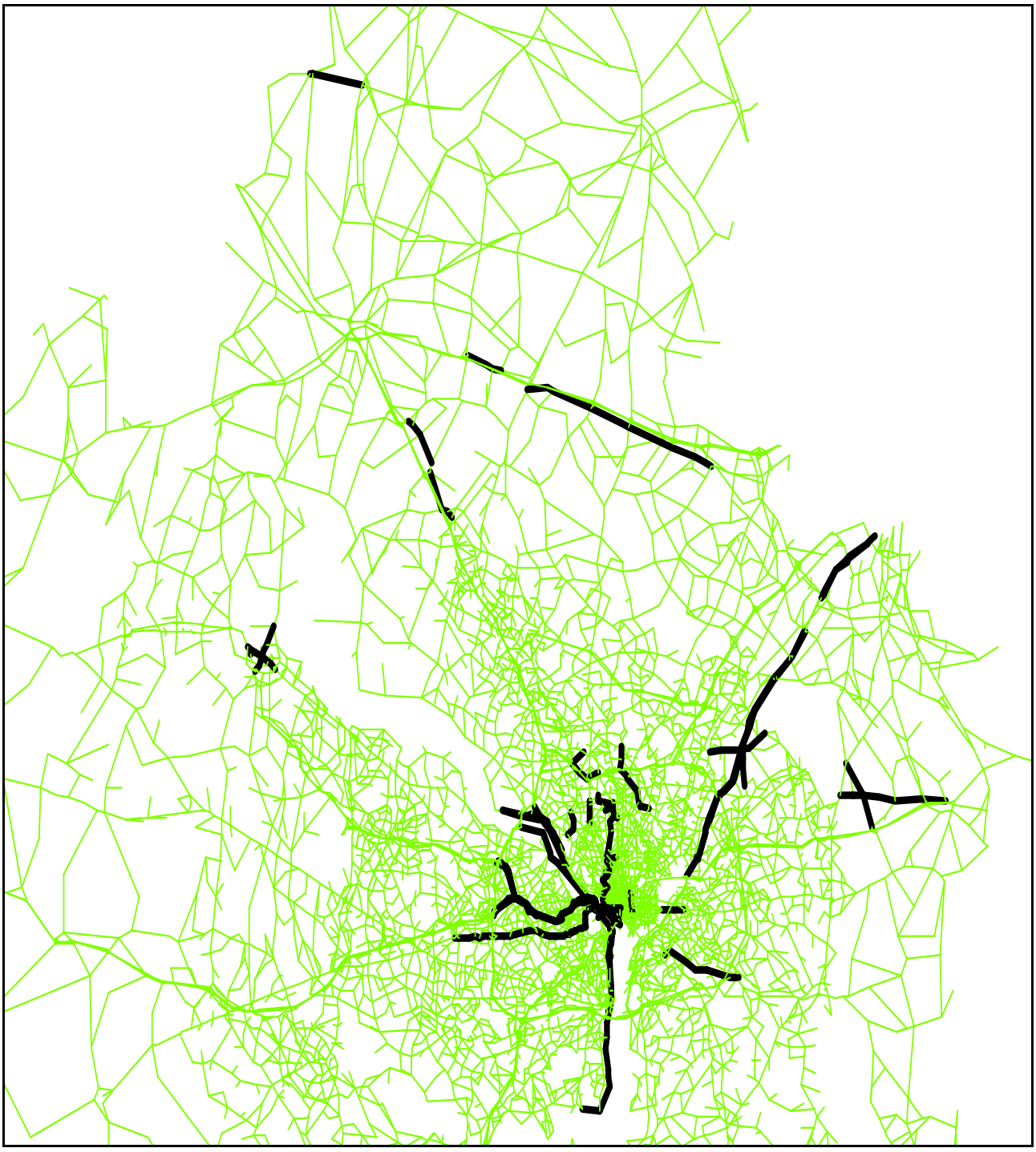


Exhibit 3-4: Truck Prohibited Links in 2000 Highway Network

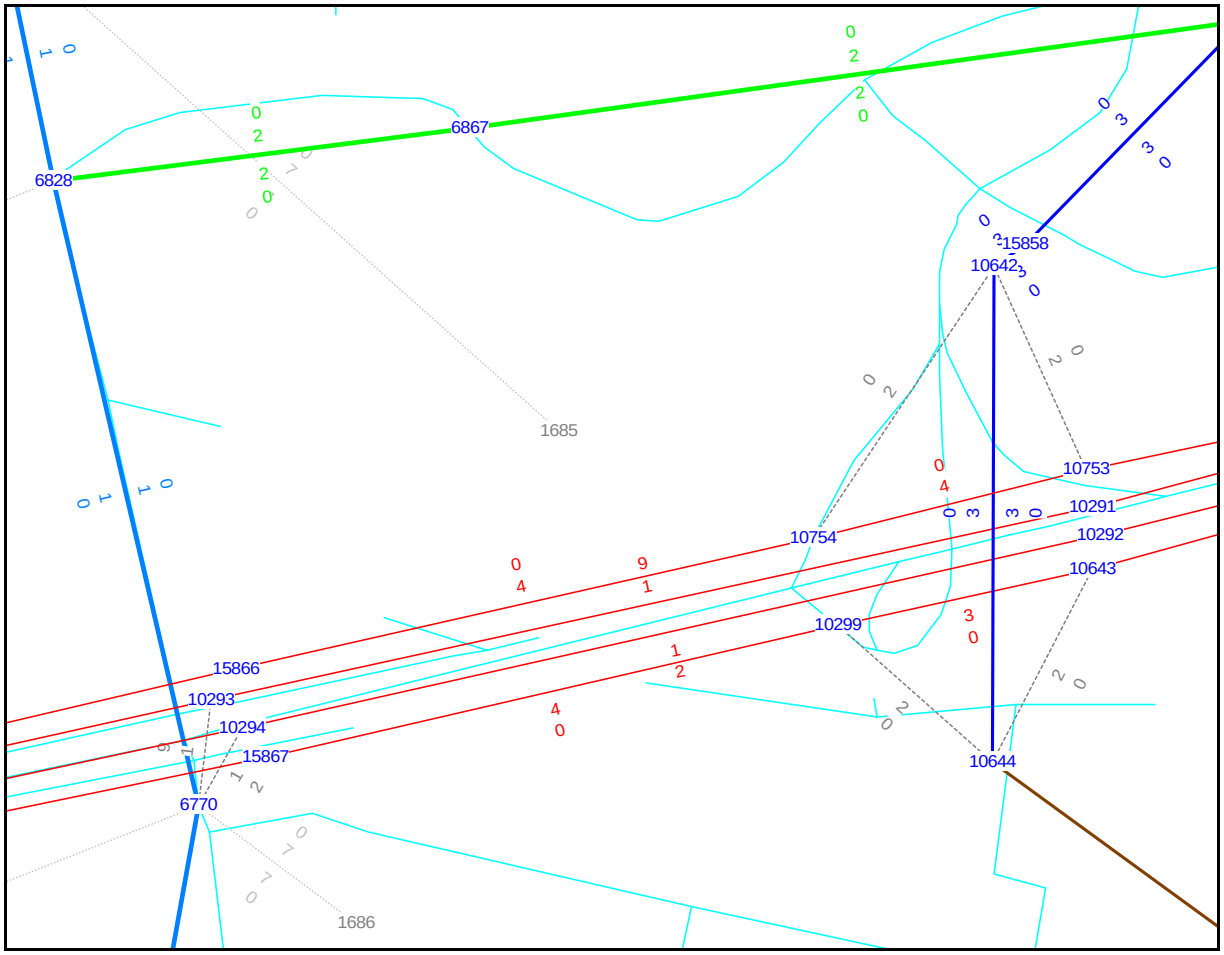


Links representing HOV lanes are coded based on their time-of-day operation. The following section provides an example of highway network link coding for an AM peak period HOV operation and Exhibit 3-5 provides a schematic diagram.

In Exhibit 3-5, the I-66 segment from the Fairfax County Parkway to VA Route 645 Stringfellow Road provides 8 conventional lanes during non-peak periods. During the peak periods, the median lane currently operates as a concurrent HOV2 lane in the peak direction.

In the schematic diagram, link 15867-10299 operates 4 LOV lanes eastbound with a Limit Code 0 (all traffic 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 traffic 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 and this condition applies to all HOV facilities coded with a Limit Code 9 in the non-peak direction.

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



Link attributes "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 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 types 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. 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' Pop. Density (Pop/Sq mi.)	One-Mile 'Floating' Employment Density (Emp / Sq mi)						
	0-100	101-500	501-1,500	1,501-5,000	5,001-15,0000	15,001-35,000	35,001+
0-100	7	7	5	5	2	2	2
101-350	7	5	5	5	2	2	2
351-1,500	6	6	5	5	2	2	2
1,501-3,500	6	6	4	3	2	2	2
3,501-6,500	4	4	3	3	2	2	1
6,501-10,000	4	3	3	3	2	2	1
10,001+	3	3	3	2	2	2	1

An observed daily traffic count (coded in thousands) for year 2000 is also included as a link attribute. These traffic counts reflect average annual weekday travel.

In the Version 2.1 D#50 Model, monetary values of tolls are considered in the trip distribution, mode choice and traffic assignment steps. The capability involves converting monetary toll values to an equivalent time (minutes) that is, in turn, added to the normal highway time during path building. The network link file contains a toll value variable (TOLL) and a toll facility type variable (TOLLGRP) whereby tolls can be specified as a fixed fee or per-mile rate.

Three parameter files, TOLL.INC, TOLL.ESC, and TOLL.SKM are used to specify various toll policies. The TOLL.INC file is used in the trip distribution process and converts tolls on an I-J basis to equivalent minutes by income level. This file is generally unchanged by the user. The TOLL.ESC file is called in the highway network building program and is used to convert the link coded toll value from the current year costs to 1994 values. The file may optionally be used to specify per mile toll rates and/or time period adjustment rates if desired. The TOLL.SKM file is called in the highway assignment and highway skimming steps and is used to convert link specific tolls to equivalent minutes. These equivalent minutes are added to the highway time as part of the path-building routine. The file may optionally be used to specify toll adjustments by vehicle, time period, and toll group if desired.

Cost components in the Version 2.1 D#50 model require costs to be expressed in 1994 dollars. 1994 was the base-year of the model calibration. These components include parking costs, highway tolls, and transit fares. Deflation factors in the model (i.e., in the highway building and transit fare building steps) are used to convert current-year costs into base-year 1994 values. Toll codes indicate the out-of-pocket costs charged for the use of specific highway links and are expressed in current-year dollars.

Three tolled facilities are coded in the year 2000 highway network: 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. In 2010 networks, two tolled facilities are added: the Inter-County Connector in Maryland and HOT-Lanes in Virginia on I-495 Capital Beltway.

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 Nice Bridge, in both directions. Toll information is furnished by state DOT's and Exhibit 3-7 lists all highway network links where tolls are coded for base and forecast year networks.

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	Govenor Nice Bridge	Virginia - Maryland	Inbound	LOV	100	100	100	100	100	100	100	
22	14200	14400	Govenor 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: TOLLNK06.xls

For the Inter-County Connector in Maryland and HOT-Lanes on I-495 Capital Beltway in Virginia, the network link toll value (TOLL) is left blank for these facilities 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 4 with tolls of 15 and 20 cents for the peak and off-peak periods respectively, in 2010 cents. HOT-Lanes in Virginia on I-495 Capital Beltway are modeled as TOLLGRP 2, 3, and 5-10. The remaining toll facilities in the region are modeled as TOLLGRP 1. Exhibit 3-8 displays a toll structure that is being used for the HOT Lane project on the Virginia Beltway.

Exhibit 3-8: Toll Group Variable and Toll in Year 2010 HOT Lane Project
AM/PM/Off Peak Tolls in 2010 Cents; On/Off Ramp based approach

Locations	SB	TOLLGRP	NB	TOLLGRP
VA 193 - VA 267	20/20/15	10	20/60/15	9
VA 267 - VA 123	20/20/15	10	20/90/15	3
VA 123 - I-66	20/110/15	6	70/60/15	7
I-66 - Lee Hwy	20/40/15	2	20/40/15	2
Lee Hwy - Braddock Rd.	20/100/15	8	60/60/15	5
Braddock Rd. - Springfield I.C.	20/40/15	2	20/60/15	9

Highway network link attributes include screen-line codes. Screen-lines 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 and the current system of screen-line codes is shown in Exhibits 3-9 and Exhibit 3-10. Screen-lines 21 and 30 are not used.

Exhibit 3-9: Highway Network Screen lines

Map 1 of 2

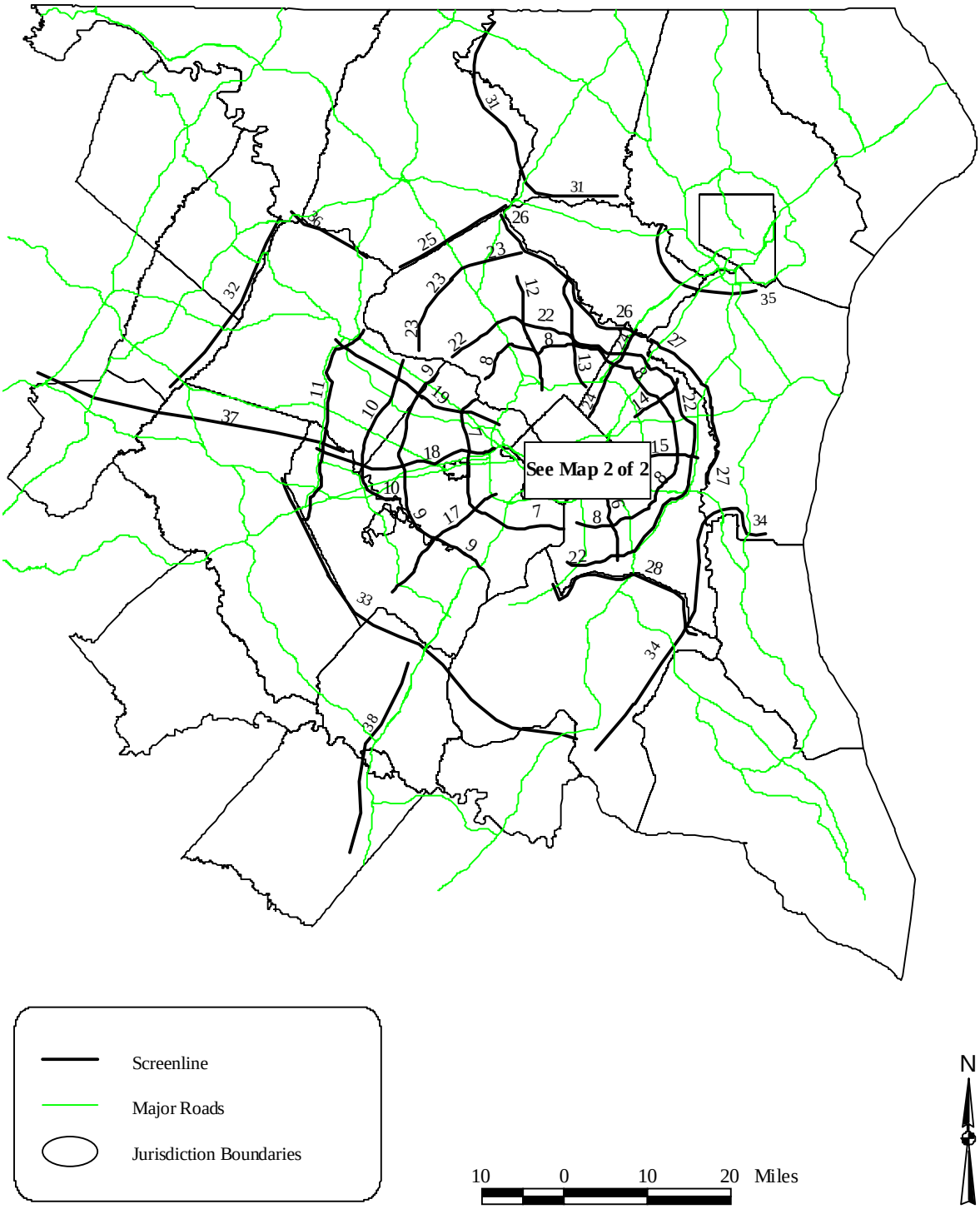
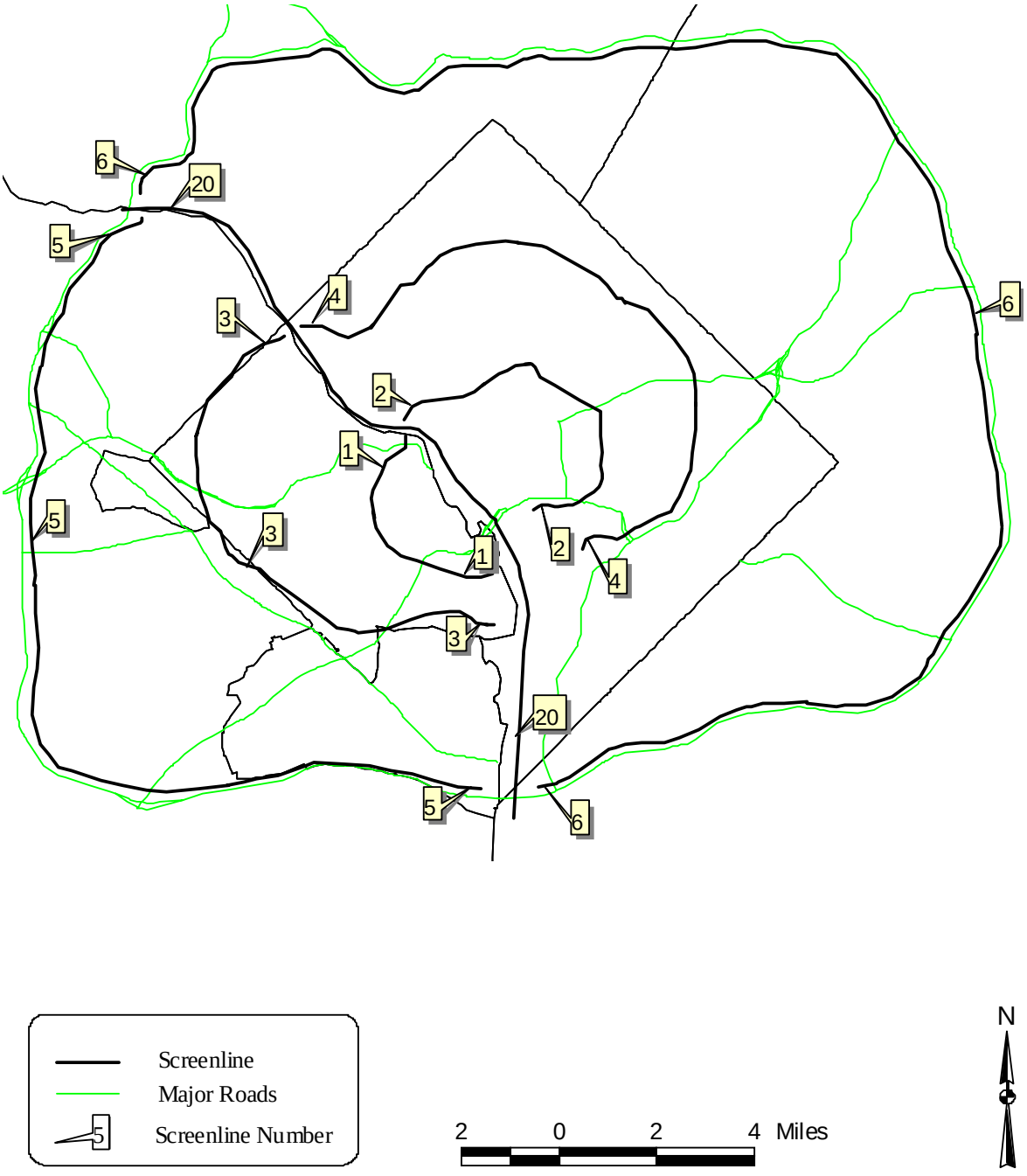


Exhibit 3-10: Highway Network Screen lines (Inside the Capital Beltway)
Map 2 of 2



3.2 Transit Network Building Overview

The AM and off-peak transit 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[2]. 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.

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 use HOV lanes, 3) Metrorail lines, 4) Commuter Rail lines, 5) Light Rail and Transitway lines, 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 3-11 presents a summary of in-vehicle and out-of-vehicle mode conventions used in coding transit line files.

Mode code "5" is used to represent light rail and transitway service and must be noted that transit services coded as mode 5 are not modeled as premium rail (Metrorail and Commuter Rail). Exhibit 3-12 shows some of the operating characteristics for different transit modes that are used in cases where COG/TPB staff lack detailed coding instructions. 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.

The AM Peak and Off-Peak 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. "Headway" is the time between successive arrivals (or departures) of transit vehicles on a given route. "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.

In the past headways and run times were calculated manually from the paper timetables put out by the various transit agencies. Since 1999, however we have calculated headways and run times for WMATA bus routes and Ride On bus routes, which represent the lion's share of transit routes in a given transit network, in an automated manner using electronic files from the transit agencies and SAS programs developed at COG/TPB.

[2] 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 3-11: Transit Network Mode Codes

Ref: c7exh3-11.xls

In-Vehicle Mode Codes			
Mode No.	**Mode Description**	**Abbreviation/ Prefix**	**Transit Service**
1	Local Metrobus	"1 - 97, A - Z"	WMATA (DC, Alex., Falls Church, & MTG, PG, ARL, FFX Counties)
		"DCC"	District of Columbia Circulator
2	Express Metrobus	"5 - 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)
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)
Out-of-Vehicle Mode Codes			
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		

Exhibit 3-12: Planning guidelines for transit vehicles, U.S. averages Ref: c7exh3-12.xls

	Bus	**BRT**	**Light Rail**	**Heavy Rail**	**Commuter Rail**
Speed, max. operational	65 mph	65 mph	50 to 60 mph	55 to 65 mph	70 to 125 mph
Speed, average operating (stops included)	13 mph	Freeway: * Non-stop: 40-50 mph * All-stop: 25-35 mph Arterial: 15 mph	21 mph	28 to 33 mph	36 mph
Acceleration rate	2.5 to 2.7 mph/s (2.9 to 4.0 ft/s^2)	2.5 to 2.7 mph/s (2.9 to 4.0 ft/s^2)	2.5 to 3.0 mph/s (2.9 to 4.3 ft/s^2)	2.5 to 3.0 mph/s (2.9 to 4.3 ft/s^2)	2.5 to 3.0 mph/s (2.9 to 4.3 ft/s^2)
Deceleration rate	2.5 to 2.7 mph/s (2.9 to 4.0 ft/s^2)	2.5 to 2.7 mph/s (2.9 to 4.0 ft/s^2)	2.5 to 3.0 mph/s (2.9 to 4.3 ft/s^2)	2.5 to 3.0 mph/s (2.9 to 4.3 ft/s^2)	2.5 to 3.0 mph/s (2.9 to 4.3 ft/s^2)
Vehicle capacity, crush (persons/vehicle)	60 to 85	60 to 130	100 to 175	175 to 187	132 to 255
Dwell time	35 to 45 s	35 to 45 s	35 to 45 s	35 to 45 s	35 to 45 s
Capital costs: Total	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
Theoretical line capacity (persons/hour)	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)

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, 2nd 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.

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 2006 CLRP and FY2007-2012 TIP were based on 2005 transit data.

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.

As a result of the automatic link generation, the analyst must develop only two file types, transit line files and a single station/PNR file. 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. A description of the station/PNR file format can be found in Exhibit 3-33.

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. 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 2.1D #50 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 3-13. The information is displayed for base years 1994, 2000, and forecast 2010, 2020, and 2030. 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. 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.

Commuter rail and light rail transit line data is shown in Exhibits 3-14 through 3-16. Rail line characteristics are displayed for base years 1994, 2000, and forecast 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.

A file containing Metrorail and commuter rail links (see Exhibit 3-34) is required in the transit building process. Link attributes consist of simply the a-node, b-node, distance and average speed. Metrorail and commuter rail data is supplied by the Washington Metropolitan Area Transit Authority (WMATA), Maryland Transit Administration (MTA), and Virginia Department of Rail and Public Transportation (VDRPT).

Exhibit 3-13: Metrorail Network Data for 1994, 2000, and FY2006 Transit Networks (2010, 2020, and 2030)

	Year 1994							Year 2000							Year 2010						
			Rail Network Data							Rail Network Data							Rail Network Data				
Line	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)	O-Sta.	D-Sta.	am hdwy	op hdwy	time (min)	dist (mi)	spd (mph)
Red-A	Shady Grove (1)	Wheaton (25)	6	12	60	29.81	29.81	Shady Grove (1)	Glenmont (26)	6	12	64.2	31.58	29.51	Shady Grove (1)	Glenmont (26)	6	12	64.2	31.58	29.51
Red-B	Grosvenor (5)	Silver Spring (23)	10	14	42	19.33	27.61	Grosvenor (5)	Silver Spring (23)	6	12	42.2	19.33	27.48	Grosvenor (5)	Silver Spring (23)	3	12	42.2	19.33	27.48
Red-C	Silver Spring (23)	Grosvenor (5)	6	17	42	19.33	27.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Red-D	Shady Grove (1)	Silver Spring (23)	30	60	53	26.52	30.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Red-E	Silver Spring (23)	Shady Grove (1)	--	43	53	26.52	30.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grn-A	Fort Totten (21)	Greenbelt (27)	6	12	11	7.65	41.73	Greenbelt (27)	Anacostia (40)	6	12	29.7	16.18	32.69	Greenbelt (27)	Branch (45)	6	12	40	22.88	34.32
Grn-B	U St-Cardozo (33)	Anacostia (40)	6	12	11	5.04	27.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yel-A	Mt. Vn Sq.-UDC (35)	Huntington (48)	6	12	24	10.62	26.55	Mt. Vn Sq.-UDC (35)	Huntington (48)	6	12	24.3	10.62	26.22	Mt. Vn Sq.-UDC (35)	Huntington (48)	7	12	24.3	10.62	26.22
Blu-A	Van Dorn St. (46)	Addison Rd. (83)	12	12	52	23.31	26.9	FranSpgfld (47)	Addison Rd. (83)	6	12	60	26.81	26.81	FranSpgfld (47)	Largo (87)	14	12	60	29.69	29.69
Blu-B	National Airport (52)	Addison Rd. (83)	12	--	40	15.79	23.69	--	--	--	--	--	--	--	FranSpgfld (47)	Greenbelt (27)	14	--	66	28.72	26.1
Oran-A	Vienna (57)	New Carrollton (80)	6	12	57	26.15	27.53	Vienna (57)	New Carrollton (80)	6	12	59.4	26.15	26.41	Vienna (57)	New Carrollton (80)	7	12	59	26.15	26.59
Oran-B	W. Falls Church (59)	New Carrollton (80)	12	12	50	21.26	25.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oran-C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Vienna (57)	Largo (87)	14	--	59	26.15	26.59

	Year 2020							Year 2030						
			Rail Network Data							Rail Network Data				
Line	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	64.2	31.58	29.51	Shady Grove (1)	Glenmont (26)	2.5	6	64.2	31.58	29.51
Red-B	Grosvenor (5)	Silver Spring (23)	--	--	--	--	--	Grosvenor (5)	Silver Spring (23)	--	--	--	--	--
Red-C	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Red-D	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Red-E	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Grn-A	Greenbelt (27)	Branch (45)	7	12	40	22.88	34.32	Greenbelt (27)	Branch (45)	7	12	40	22.88	34.32
Grn-B	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yel-A	Mt. Vn Sq.-UDC (35)	Huntington (48)	7	12	24.3	10.62	26.22	Mt. Vn Sq.-UDC (35)	Huntington (48)	7	12	24.3	10.62	26.22
Blu-A	FranSpgfld (47)	Largo (87)	14	12	60	29.69	29.69	FranSpgfld (47)	Largo (87)	14	12	60	29.69	29.69
Blu-B	FranSpgfld (47)	Greenbelt (27)	14	--	66	28.72	26.1	FranSpgfld (47)	Greenbelt (27)	14	--	66	28.72	26.1
Oran-A	Vienna (57)	New Carrollton (80)	7	12	59	26.15	26.59	Vienna (57)	New Carrollton (80)	7	12	59	26.15	26.59
Oran-B	Dulles GrnWay (98)	Stadium-Armory (75)	7	12	38	23.28	36.76	Dulles GrnWay (98)	Stadium-Armory (75)	7	12	38	23.28	36.76
Oran-C	Vienna (57)	Largo (87)	14	--	59	26.15	26.59	Vienna (57)	Largo (87)	14	--	59	26.15	26.59

Ref: c7exh3-13.xls

Exhibit 3-14: Commuter Rail and Light Rail Network Data for 1994 and 2000

			Year 1994							*Year 2000*						
Line	O-Sta.	D-Sta.	am hdwy	op hdwy	amRT (min)	opRT (min)	dist (mi)	amspd (mph)	opspd (mph)	am hdwy	op hdwy	amRT (min)	opRT (min)	dist (mi)	amspd (mph)	opspd (mph)
MBRU1I	Duffields (16)	Union Station (01)	60	--	100	--	58.62	35.17	--	60	--	93	--	58.62	37.82	--
MBRU1O	Union Station (01)	Brunswick (14)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MBRU2O	Union Station (01)	Brunswick (14)	--	60	--	80	47.02	--	35.27	--	60	--	81	47.02	--	34.83
MBRU2I	Brunswick (14)	Union Station (01)	20	--	83	--	47.02	33.99	--	60	--	86	--	47.02	32.80	--
MBRU3I**	Brunswick (14)	Union Station (01)	--	--	--	--	47.02	--	--	60	--	82	--	47.02	34.40	--
MBRU4I**	Brunswick (14)	Union Station (01)	--	--	--	--	--	--	--	60	--	77	--	47.02	36.64	--
MPEN1I	BWI Station (55)	Union Station (01)	20	60	41	43	27.10	39.66	37.81	30	60	39	40	27.10	41.69	40.65
MPEN2O	Union Station (01)	BWI Station (55)	30	60	32	34	30.30	56.81	53.47	60	60	37	35	27.10	43.95	46.46
MPEN3I *	BWI Station (55)	Union Station (01)	60	60	31	39	27.10	52.45	41.69	60	60	28	38	27.10	58.07	42.79
MPEN4O *	Union Station (01)	BWI Station (55)	--	--	--	--	--	--	--	60	--	25	--	27.10	65.04	--
MCAM1I	Elkridge (32)	Union Station (01)	30	--	55	--	30.30	33.05	--	--	--	--	--	--	--	--
MCAM1I	Dorsey (34)	Union Station (01)	--	--	--	--	--	--	--	60	--	49	--	33.30	40.78	--
MCAM1O**	Union Station (01)	Dorsey (34)	--	--	--	--	--	--	--	60	--	39	--	33.30	51.23	--
MCAM2I	Elkridge (32)	Union Station (01)	60	--	55	--	30.30	33.05	--	--	--	--	--	--	--	--
MCAM2I	Dorsey (34)	Union Station (01)	--	--	--	--	--	--	--	60	--	47	--	33.30	42.51	--
MCAM3I**	Dorsey (34)	Union Station (01)	--	--	--	--	--	--	--	60	--	38	--	33.30	52.58	--
MCAM1I	Elkridge (32)	Union Station (01)	--	60	--	53	30.30	--	34.30	--	--	--	--	--	--	--
MCAM3O	Union Station (01)	Elkridge (32)	30	--	38	--	30.30	47.84	--	--	--	--	--	--	--	--
MCAM3O**	Union Station (01)	Dorsey (34)	--	--	--	--	--	--	--	--	60	--	79	33.30	--	25.29
MCAM4O	Union Station (01)	Laurel Race Tk. (36)	--	--	--	--	--	--	--	--	60	--	49	18.70	--	22.90
FRED1I	Fredericksburg (7733)	Union Station (01)	30	--	81	--	53.92	39.94	--	30	--	87	--	53.92	37.19	--
FRED2I	Fredericksburg (7733)	Union Station (01)	30	--	70	--	53.92	46.22	--	--	60	--	74	53.92	--	43.72
FRED3O**	Union Station (01)	Fredericksburg (7733)	--	--	--	--	--	--	--	60	60	64	67	53.92	50.55	48.29
FRED4O	Union Station (01)	Fredericksburg (7733)	--	--	--	--	--	--	--	--	60	--	70	53.92	--	46.22
MASS1I	Broad Run (7711)	Union Station (01)	20	--	74	--	34.34	27.84	--	30	60	74	75	34.34	27.84	27.47
MASS1O	Union Station (01)	Broad Run (7711)	--	--	--	--	--	--	--	60	60	74	73	34.34	27.84	28.22
MASS2O**	Union Station (01)	Broad Run (7711)	--	--	--	--	--	--	--	60	--	69	--	34.34	29.86	--
MFREDI	Frederick City (18)	Union Station (01)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Light Rail																
LRTDC	Penn. Ave	Bolling AFB	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CCTLRT	Metro Grove	Shady Grove	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LRTMTG	Bethesda(70)	Silver Spring (73)	--	--	--	--	--	--	--	--	--	--	--	--	--	--

*** Express**
**** Limited Stops**

Exhibit 3-15: Commuter Rail and Light Rail Network Data for 2010 and 2020

			Year 2010							*Year 2020*						
Line	O-Sta.	D-Sta.	am hdwy	op hdwy	amRT (min)	opRT (min)	dist (mi)	amspd (mph)	opspd (mph)	am hdwy	op hdwy	amRT (min)	opRT (min)	dist (mi)	amspd (mph)	opspd (mph)
MBRU1I	Brunswick (14)	Union Station (01)	60	--	87	--	47.02	32.43	--	60	--	87	--	47.02	32.43	--
MBRU1O	Union Station (01)	Brunswick (14)	--	60	--	78	47.02	--	36.20	--	60	--	78	47.02	--	36.20
MBRU2O	Union Station (01)	Brunswick (14)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MBRU2I**	Duffields (16)	Union Station (01)	60	--	99	--	58.62	35.53	--	60	--	99	--	58.62	35.53	--
MPEN1I	BWI Station (55)	Union Station (01)	60	60	40	38	27.03	40.55	42.68	60	60	40	38	27.03	40.55	42.68
MPEN1O	Union Station (01)	BWI Station (55)	60	60	33	35	27.03	49.15	46.34	60	60	33	35	27.03	49.15	46.34
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)	30		26		27.03	62.38	--	30		26		27.03	62.38	--
MPEN3I *	BWI Station (55)	Union Station (01)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MPEN4O *	Union Station (01)	BWI Station (55)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MCAM1I	Dorsey (34)	Union Station (01)	60	--	55	--	26.80	29.24	--	60	--	55	--	26.80	29.24	--
MCAM1O	Union Station (01)	Dorsey (34)	60	--	39	--	26.80	41.23	--	60	--	39	--	26.80	41.23	--
MCAM2I**	Dorsey (34)	Union Station (01)	60	--	43	--	26.80	37.40	--	60	--	43	--	26.80	37.40	--
MCAM3I**	Dorsey (34)	Union Station (01)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MCAM3O**	Union Station (01)	Dorsey (34)	--	60	--	80	26.80	--	20.10	--	60	--	80	26.80	--	20.10
MCAM4O	Union Station (01)	Laurel Race Tk. (36)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MFREDI**	Frederick City (18)	Union Station (01)	60	--	95	--	55.15	34.83	--	60	--	95	--	55.15	34.83	--
FRED1I	Fredericksburg (7733)	Union Station (01)	20	--	88	--	53.92	36.76		20	--	88	--	53.92	36.76	--
FRED1O	Union Station (01)	Fredericksburg (7733)	--	60	--	86	53.92	--	37.62	--	60	--	86	53.92	--	37.62
AMTK1I**	Fredericksburg (7733)	Union Station (01)	60	--	75	--	53.92	43.14		60	--	75	--	53.92	43.14	--
AMTK1O**	Union Station (01)	Fredericksburg (7733)	60	60	36	62	53.92	89.87	52.18	60	60	36	62	53.92	89.87	52.18
AMTK2I**	Fredericksburg (7733)	Union Station (01)	--	60	--	91	53.92	--	35.55	--	60	--	91	53.92	--	35.55
AMTK2O**	Union Station (01)	Fredericksburg (7733)	--	60	--	70	53.92	--	46.22	--	60	--	70	53.92	--	46.22
MASS1I	Broad Run (7711)	Union Station (01)	20	60	75	75	34.34	27.47	27.47	20	60	75	75	34.34	27.47	27.47
MASS1O	Union Station (01)	Broad Run (7711)	--	60	--	73	34.34	--	28.22	--	60	--	73	34.34	--	28.22
MASS2O**	Union Station (01)	Broad Run (7711)	60	--	75	--	34.34	27.47	--	60	--	75	--	34.34	27.47	--
AMTK3O**	Union Station (01)	Manassas	--	60	--	52	31.82		36.72	--	60	--	52	31.82	--	36.72
Light Rail																
LRTDC	Penn. Ave	Bolling AFB	15	30	15	15	1.85	7.40	7.40	15	30	15	15	1.85	7.40	7.40
CCTPY1	Glebe Rd Ext.	Crystal City Metro	6	12	10	10	1.21	7.26	7.26	6	12	10	10	1.21	7.26	7.26
CCTLRT	Metro Grove	Shady Grove	--	--	--	--	--	--	--	6	10	40	40	13.3	19.95	19.95
LRTMTG	Bethesda(70)	Silver Spring (73)	--	--	--	--	--	--	--	6	12	12	12	3.75	18.75	18.75

*** Express**
**** Limited Stops**

Exhibit 3-16: Commuter Rail and Light Rail Network Data for 2030

			Year 2030						
Line	O-Sta.	D-Sta.	am hdwy	op hdwy	amRT (min)	opRT (min)	dist (mi)	amspd (mph)	opspd (mph)
MBRU1I	Brunswick (14)	Union Station (01)	60	--	87	--	47.02	32.43	--
MBRU1O	Union Station (01)	Brunswick (14)	--	60	--	78	47.02	--	36.20
MBRU2O	Union Station (01)	Brunswick (14)	--	--	--	--	--	--	--
MBRU2I**	Duffields (16)	Union Station (01)	60	--	99	--	58.62	35.53	--
MPEN1I	BWI Station (55)	Union Station (01)	60	60	40	38	27.03	40.55	42.68
MPEN1O	Union Station (01)	BWI Station (55)	60	60	33	35	27.03	49.15	46.34
MPEN2I	BWI Station (55)	Union Station (01)	60	--	30	--	27.03	54.06	--
MPEN2O	Union Station (01)	BWI Station (55)	30	--	26	--	27.03	62.38	--
MPEN3I *	BWI Station (55)	Union Station (01)	--	--	--	--	--	--	--
MPEN4O *	Union Station (01)	BWI Station (55)	--	--	--	--	--	--	--
MCAM1I	Dorsey (34)	Union Station (01)	60	--	55	--	26.80	29.24	--
MCAM1O	Union Station (01)	Dorsey (34)	60	--	39	--	26.80	41.23	--
MCAM2I**	Dorsey (34)	Union Station (01)	60	--	43	--	26.80	37.40	--
MCAM3I**	Dorsey (34)	Union Station (01)	--	--	--	--	--	--	--
MCAM3O**	Union Station (01)	Dorsey (34)	--	60	--	80	26.80	--	20.10
MCAM4O	Union Station (01)	Laurel Race Tk. (36)	--	--	--	--	--	--	--
MFREDI**	Frederick City (18)	Union Station (01)	60	--	95	--	55.15	34.83	--
FRED1I	Fredericksburg (7733)	Union Station (01)	20	--	88	--	53.92	36.76	--
FRED1O	Union Station (01)	Fredericksburg (7733)	--	60	--	86	53.92	--	37.62
AMTK1I**	Fredericksburg (7733)	Union Station (01)	60	--	75	--	53.92	43.14	--
AMTK1O**	Union Station (01)	Fredericksburg (7733)	60	60	36	62	53.92	89.87	52.18
AMTK2I**	Fredericksburg (7733)	Union Station (01)	--	60	--	91	53.92	--	35.55
AMTK2O**	Union Station (01)	Fredericksburg (7733)	--	60	--	70	53.92	--	46.22
MASS1I	Broad Run (7711)	Union Station (01)	20	60	75	75	34.34	27.47	27.47
MASS1O	Union Station (01)	Broad Run (7711)	--	60	--	73	34.34	--	28.22
MASS2O**	Union Station (01)	Broad Run (7711)	60	--	75	--	34.34	27.47	--
AMTK3O**	Union Station (01)	Manassas	--	60	--	52	31.82	--	36.72
Light Rail									
LRTDC	Penn. Ave	Bolling AFB	15	30	15	15	1.85	7.40	7.40
CCTPY1	Glebe Rd Ext.	Crystal City Metro	6	12	10	10	1.21	7.26	7.26
CCTLRT	Metro Grove	Shady Grove	6	10	40	40	13.3	19.95	19.95
LRTMTG	Bethesda(70)	Silver Spring (73)	6	12	12	12	3.75	18.75	18.75

*** Express**
**** Limited Stops**

Ref: c7exh3-14.xls

3.3 Transit Fare Building Overview

Finally, 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[3], 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 6 (Transit Fare Development) of the Version 2.1 D #50 model User's Guide.

The files needed to support the fare building process include a transit walk percent 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.

Fare matrices are based on WMATA tariffs in effect for 1994, 2000, and the current tariff in effect at the time of network development. The WMATA fare tariffs used for FY2006 and FY2007 are as follows: 1994 (Tariff #16, effective June 27, 1992), year 2000 (Tariff Number 19, effective June 1999), and 2006 (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 an increase in VRE fares. Exhibit 3-17 displays WMATA's Metrorail and bus fare policy for the peak and off-peak periods and control parameters for the MFARE1 and MFARE2 programs.

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, in 1994, S.E. Fairfax County was served by Fairfax Connector (bus fare zone 2, 2) and VRE commuter rail service (bus fare zone 3, 4). 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, 1) by averaging the cost of a trip from bus fare zone 2, 2 to bus fare zone 1, 1 with the cost of a trip from bus fare zone 3, 4 to bus fare zone 1, 1.

[3] *User's Guide for the MWCOG Fare Programs, Microcomputer Version* (Final). Originally prepared for the Maryland Department of Transportation by COMSIS Corporation, April 1991. Revised version prepared for the Metropolitan Washington Council of Governments, by William G. Allen, Jr., PE, June 1992.

Exhibit 3-17: WMATA Metrorail and Bus Fare Policy* and MFARE1/2 Control Parameters

Process	Time Period	Control	Name	Policy Variable	Tariff #16 6/27/1992	Tariff #19 6/20/1999	Tariff #23 6/28/2004
MFARE1	**AM**	**MFARE1**					
			UPARMS (7)	Boarding Distance	3 miles	3 miles	3 miles
			UPARMS (8)	Secondary Distance	3 miles	3 miles	3 miles
			UPARMS (1)	Boarding Fare	$1.00	$1.10	$1.35
			UPARMS (3)	Maximum Fare	$3.15	$3.25	$3.90
			UPARMS (2)	Secondary Fare	$0.19	$0.19	$0.22
			UPARMS (9)	Tertiary Fare	$0.17	$0.165	$0.195
MFARE1	**OFF-PEAK**	**MFARE1OP**					
			UPARMS (7)	Boarding Distance	7 miles	7 miles	7 miles
			UPARMS (8)	Secondary Distance	3 miles	3 miles	3 miles
			UPARMS (1)	Boarding Fare	$1.00	$1.10	$1.35
			UPARMS (3)	Maximum Fare	$2.00	$2.10	$2.35
			UPARMS (2)	Secondary Fare	$0.50	$0.50	$0.50
			UPARMS (9)	Tertiary Fare	$0.50	$0.50	$0.50
MFARE2	**AM/OFF-PEAK**	**MFARE2TP**					
			UPARMS (2)	Deflator			
			UPARMS (4)	DC Rail-Bus Discount	$0.75	$0.85	$0.90
			UPARMS (5)	MD Rail-Bus Discount	$0.00	$0.85	$0.90
			UPARMS (6)	Va/1 Rail-Bus Discount	$0.25	$0.85	$0.90
			UPARMS (7)	Va/2 Rail-Bus Discount	$0.25	$0.85	$0.90

Ref: WMATA FARE POLICYALLRJM.xls

* From "Tariff of the Washington Metropolitan Area Transit Authority for Metrorail and Metrobus operations within the Washington Metropolitan Area. Tariff 16 (effective June 27, 1992), Tariff 19 (effective June 20, 1999), and Tariff 23 (effective June 28, 2004)

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 following sections describe the development of bus fare zones and service areas for various tariff and fare scenarios. Bus fare zones/service areas and fare matrices for 1994 networks (Tariff #16) are described in Exhibits 3-18 through 3-22. Information for year 2000 networks (WMATA's Tariff #19) are shown in Exhibits 3-23 through 3-26, and service areas and fare matrices for forecast year networks (Tariff #23) are presented in Exhibits 3-27 through 3-30.

In 1994, the following modifications were made to fine tune the COG/TPB fare zone system to accurately reflect conditions with respect to VRE fares. Two additional fare zones were also established to reflect commuter rail opportunities in areas beyond Prince William County. Fauquier County is assumed to be VRE oriented, i.e. using the Broad Run station.

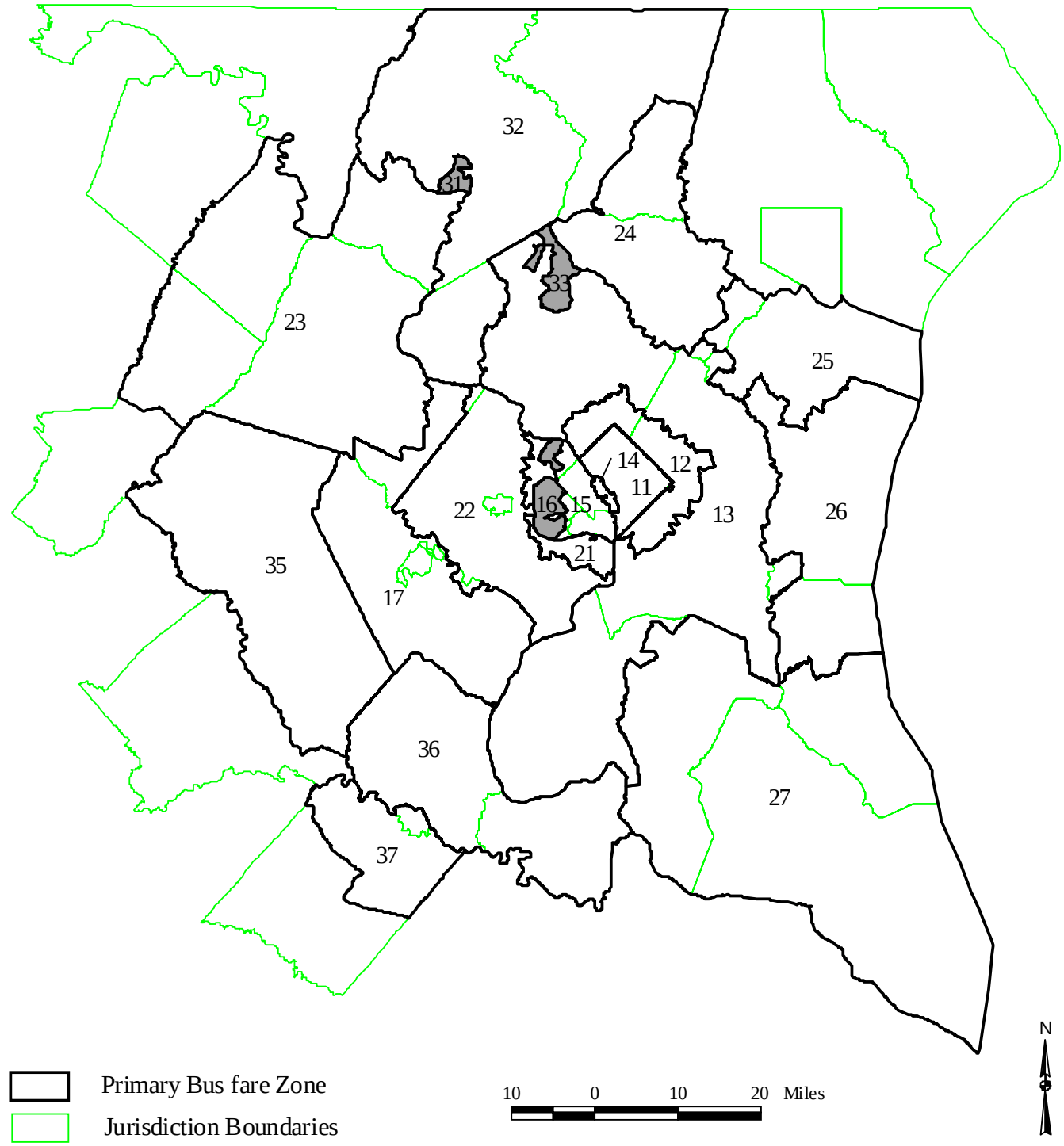
1. Zone 2, 3 (Frederick Co. / MARC) was assumed to extend to cover western Loudoun County as well as Clarke and Jefferson Counties. Much of the transit use that is generated from this area is heavily MARC oriented.
2. Zone 3, 4 fares were modified so that they reflected only the Lorton VRE Station that actually opened during late 1994 (This is a secondary fare zone).
3. Fare zone 3, 5 was redeveloped based on fares from the Quantico, Woodbridge, and Rippon VRE Stations.
4. Zone 3, 6 was used to reflect Stafford County VRE stations, Brooke and Leeland Road (serving Stafford and King George Counties).
5. Zone 3, 7 was used to reflect the Fredericksburg VRE Station (serving Spotsylvania County and the City of Fredericksburg). It is important to note that, VRE and commuter bus fares for fare zones 3, 6 and 3, 7 are averaged. These fares are relevant to trips destined to DC (1,1) and Virginia core (1,4).

Bus fare zones/service areas and fare matrices for the 1994 network (Tariff #16) are described in Exhibits 3-18 through 3-22.

Exhibit 3-18: Bus Fare Zone/Service Areas for WMATA Tariff #16

1st Fare Zone Bus Service	Approximate Service Area
Fare Zone 1, 1- WMATA / DC	DC
Fare Zone 1, 2 - WMATA / MD Zone 1	"Inner" Maryland Suburbs
Fare Zone 1, 3 - WMATA / MD Zone 2	"Outer Maryland Suburbs
Fare Zone 1, 4 - WMATA / VA Zone G	Virginia "Core"
Fare Zone 1, 5 - WMATA / VA Zone 1	"Inner" Virginia, beyond the Core
Fare Zone 1, 6 - WMATA / VA Zone 2	Virginia Suburbs, beyond Zone 1
Fare Zone 1, 7 - WMATA / VA Zone 3	Virginia Suburbs, beyond Zone 2
Fare Zone 2, 1 - FFX Connector / Zone 1	"Inner" Fairfax Co.
Fare Zone 2, 2 - FFX Connector / Zone 2	"Outer" Fairfax Co.
Fare Zone 2, 3 - MARC Rail / Brunswick	Frederick County, near MARC rail
Fare Zone 2, 4 - Howard Co. Commuter Bus	Howard Co.
Fare Zone 2, 5 - MARC Penn, Camden Lines	E. Howard Co. /N. A. Arundel Co.
Fare Zone 2, 6 - Anne Arundel Commuter Bus	Anne Arundel Co.
Fare Zone 2, 7 - Charles Co. Commuter Bus	Charles Co.
Fare Zone 3, 1 - Feeder Bus to MARC	Frederick to Pt. of Rocks Sta.
Fare Zone 3, 2 - MTA Commuter Bus	N. Mtg.Co, FrederickCo.,Carroll Co.
Fare Zone 3, 3 - MTA Commuter Bus	Upper MTG. Co.
Fare Zone 3, 4 - VRE	Fairfax Co.
Fare Zone 3, 5 - VRE Rail Zones 5&6	Prince William/Fauquier Counties
Fare Zone 3, 6 - VRE Rail Zones 7&8	Stafford/King George Counties
Fare Zone 3, 7 - VRE Rail Zone 9	City of Fredericksburg/Spotsylvania

Exhibit 3-19: Primary Bus Fare Zone Map for Tariff #16



Ref: p_s_busfrzn.wmf

WMATA's Tariff #16, effective June 27, 1992

Exhibit 3-20: Secondary Bus Fare Zone Map for Tariff #16

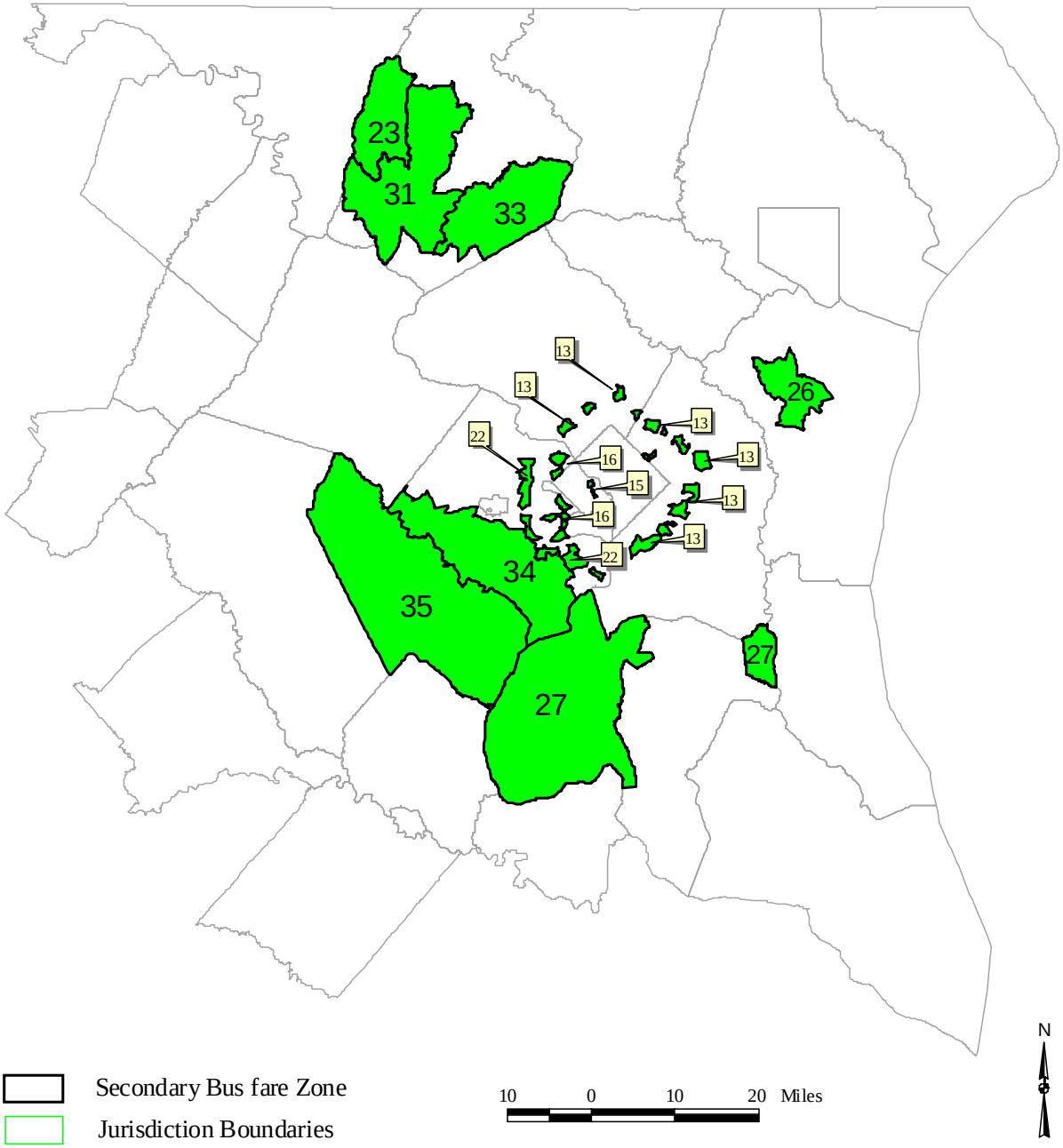


Exhibit 3-21: Regional AM Peak Bus Fare Matrix for 1994 Between MWCOG Fare Zones

Origin Bus Fare Zone	WMATA DC 11	WMATA MD/1 12	WMATA MD/2 13	WMATA VA/G 14	WMATA VA/1 15	WMATA VA/2 16	WMATA VA/3 17	FFX/1 21	FFX/2 22	MARC/ Fred. 23	How. Comm. Bus 24	AA Comm. Bus 25	AA Comm. Bus 26	Chs Comm. Bus 27	Fred. Feeder 31	Mtg Comm. Bus 32	Mtg Comm. Bus 33	VRE/ Ffx. Co. 34	VRE PW Co. 35	VRE/ Staff Co. 36	VRE Spots.Co. 37
11	100	165	190	118	153	205	240	205	240	345	270	245	288	250	373	277	275	287	322	332	339
12	165	100	100	215	190	230	255	230	255	345	435	245	453	415	373	277	185	452	487	497	504
13	190	100	100	225	265	340	375	340	375	345	460	245	100	440	373	277	85	477	512	522	529
14	118	215	225	100	135	170	205	170	205	463	388	363	406	368	491	395	310	264	299	298	304
15	153	190	265	135	100	135	170	135	170	498	423	398	441	403	526	430	350	264	299	298	304
16	205	230	340	170	135	100	135	100	135	550	475	450	493	455	578	482	425	492	527	537	544
17	240	255	375	205	170	135	100	135	100	585	510	485	528	490	613	517	460	527	562	572	579
21	205	230	340	170	135	100	135	50	50	550	475	450	493	455	578	482	425	50	158	216	240
22	240	255	375	205	170	135	100	50	50	585	510	485	528	490	613	517	460	50	158	216	240
23	345	345	345	463	498	550	585	550	585	185	615	552	633	595	85	209	370	575	610	620	627
24	270	435	460	388	423	475	510	475	510	615	130	515	558	520	643	547	373	557	592	602	609
25	245	245	245	363	398	450	485	450	485	552	515	185	533	495	675	522	520	494	529	539	546
26	288	453	100	406	441	493	528	493	528	633	558	533	288	538	661	567	563	575	610	620	627
27	250	415	440	368	403	455	490	455	490	595	520	495	538	250	623	527	525	537	572	582	589
31	373	373	373	491	526	578	613	578	613	85	643	675	661	623	85	294	558	660	695	705	712
32	277	277	277	395	430	482	517	482	517	209	547	522	565	527	294	185	462	514	549	559	566
33	275	185	85	310	350	425	460	425	460	370	373	520	563	525	558	462	85	562	597	607	614
34	287	452	477	264	264	492	527	50	50	575	557	494	575	537	660	514	562	50	158	550	597
35	322	487	512	299	299	527	562	158	158	610	592	529	610	572	695	549	597	158	134	363	409
36	332	497	522	298	298	537	572	216	216	620	602	539	620	582	705	559	607	550	363	146	146
37	339	504	529	304	304	544	579	240	240	627	609	546	627	589	712	566	614	597	409	146	146

(Expressed in 1992 cents)

Ref: TAR16AMBFMTX.XLS

WMATA fares are based on Tariff #16 effective 6/27/92.
Remaining transit provider fares are based on those in effect during 1994, deflated back to 1992

Exhibit 3-22: Regional Off-Peak Bus Fare Matrix for 1994
Between MWCOG Fare Zones

Origin	WMATA																			
Bus Fare Zone	DC 11	MD/1 12	MD/2 13	VA/G 14	VA/1 15	VA/2 16	VA/3 17	FFX/1 21	FFX/2 22	MARC/ Fred. 23	How. Comm. Bus 24	AA Comm. Bus 25	AA Comm. Bus 26	Chs Comm. Bus 27	Fred. Feeder 31	Mtg Comm. Bus 32	Mtg Comm. Bus 33	VRE/ Ffx. Co. 34	VRE PW Co. 35	VRE/ Staff Co. 36	VRE Spots.Co. 37
11	100	165	190	118	153	135	135	135	135	345	270	245	288	250	373	277	275	287	322	332	339
12	165	100	100	215	190	230	255	230	255	345	435	245	453	415	373	277	185	452	487	497	504
13	190	100	100	225	265	340	375	340	375	345	460	245	100	440	373	277	85	477	512	522	529
14	118	215	225	100	100	100	205	170	205	463	388	363	406	368	491	395	310	264	299	298	304
15	153	190	265	100	100	100	170	135	170	498	423	398	441	403	526	430	350	264	299	298	304
16	205	230	340	100	100	100	100	100	135	550	475	450	493	455	578	482	425	492	527	537	544
17	240	255	375	100	100	100	100	135	100	585	510	485	528	490	613	517	460	527	562	572	579
21	205	230	340	170	135	100	135	50	50	550	475	450	493	455	578	482	425	50	158	216	240
22	240	255	375	205	170	135	100	50	50	585	510	485	528	490	613	517	460	50	158	216	240
23	345	345	345	463	498	550	585	550	585	185	615	552	633	595	85	209	370	575	610	620	627
24	270	435	460	388	423	475	510	475	510	615	130	515	558	520	643	547	373	557	592	602	609
25	245	245	245	363	398	450	485	450	485	552	515	185	533	495	675	522	520	494	529	539	546
26	288	453	100	406	441	493	528	493	528	633	558	533	288	538	661	567	563	575	610	620	627
27	250	415	440	368	403	455	490	455	490	595	520	495	538	250	623	527	525	537	572	582	589
31	373	373	373	491	526	578	613	578	613	85	643	675	661	623	85	294	558	660	695	705	712
32	277	277	277	395	430	482	517	482	517	209	547	522	565	527	294	185	462	514	549	559	566
33	275	185	85	310	350	425	460	425	460	370	373	520	563	525	558	462	85	562	597	607	614
34	286	452	477	264	264	492	527	50	50	575	557	494	575	537	660	514	562	50	158	550	597
35	322	487	512	299	299	527	562	158	158	610	592	529	610	572	695	549	597	158	134	363	409
36	331	497	522	298	298	537	572	216	216	620	602	539	620	582	705	559	607	550	363	146	146
37	339	504	529	304	304	544	579	240	240	627	609	546	627	589	712	566	614	597	409	146	146

(Expressed in 1992 cents)
Ref: TAR16OPBFMTX.XLS

WMATA fares are based on Tariff #16 effective 6/27/92.
Remaining transit provider fares are based on those in effect during 1994, deflated back to 1992

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. 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 new tariff also eliminated the 10-cent Metrobus transfer fee, reduced fares on regular and express Metrobus routes, cut most local bus fares, made transfers from Metrorail to Metrobus cost 25 cents, and honored 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.

The Metrorail fare structure features regular fares and reduced fares by time-of-day, based on composite miles. Fares are provided in year 2000 cents (or the year that the tariff was in effect).

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 3-17 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.

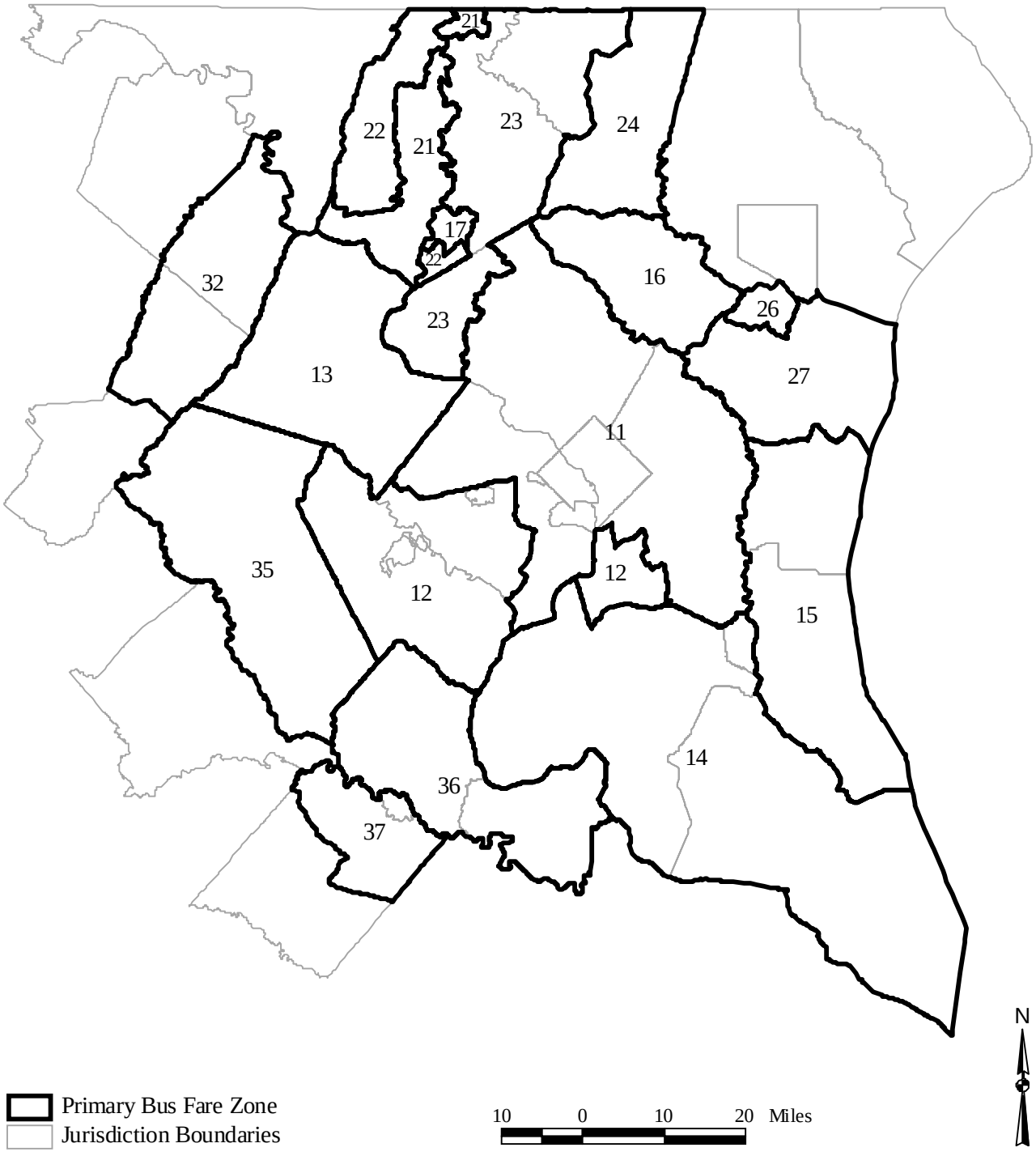
Redesigned transit service areas for tariff #19 are shown in Exhibit 3-23. Regional bus fare zone maps showing primary and secondary fare zones are displayed in Exhibit 3-24 and Exhibit 3-25, respectively. The bus fare matrix is shown in Exhibit 3-26.

Exhibit 3-23: Bus Fare Zones/Service Areas for WMATA Tariff #19

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

[4]This rail service includes MARC and VRE. Metrorail is not included, but is modeled in the RPFARE1 process.

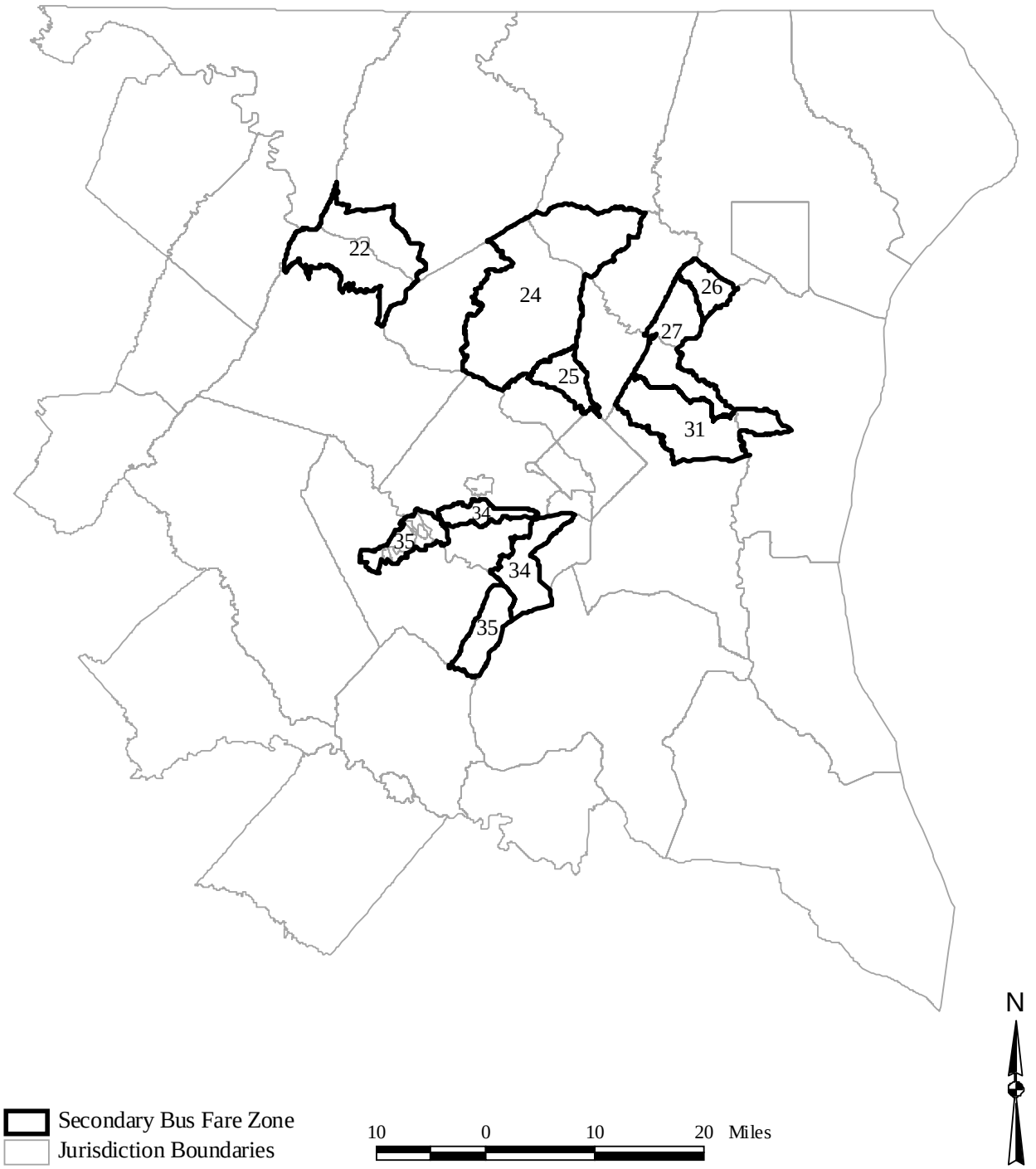
Exhibit 3-24: Primary Bus Fare Zone Map for Tariff #19



Ref: 19_pbusfarzn.wmf

WMATA's Tariff Number 19 (effective June 1999)

Exhibit 3-25: Secondary Bus Fare Zone Map for Tariff #19



Ref: 19_sbusfarzn.wmf

WMATA's Tariff Number 19 (effective June 1999)

Exhibit 3-26: Regional AM Peak and Off-Peak Bus Fare Matrix for 2000 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)	VRE Zones 3&4 (FFX &PW)	VRE Zones 5&6 (PW& Fauq Auto Conn.)	VRE Zones 7&8 (Staff&KG Auto Conn.)	VRE Zone 9 (Spots.&Fred.)
Zones	1,1	1,2	1,3	1,4	1,5	1,6	1,7	2,1	2,2	2,3	2,4	2,5	2,6	2,7	3,1	3,2	3,3	3,4	3,5	3,6	3,7
1,1	110	200	400	278	276	259	279	433	349	279	234	186	280	234	186	434	248	285	344	372	379
1,2	200	50	600	478	476	459	479	633	549	479	434	386	480	434	386	634	448	485	544	572	579
1,3	400	600	100	678	676	629	679	833	749	679	634	586	680	634	586	834	648	685	744	772	779
1,4	278	478	678	278	554	537	557	711	627	557	512	464	558	512	464	712	526	563	622	650	657
1,5	276	476	676	554	276	535	555	709	625	555	510	462	556	510	462	710	524	561	620	648	655
1,6	259	459	629	537	535	259	538	692	608	538	493	445	539	493	445	693	507	544	603	631	638
1,7	279	479	679	557	555	538	204	204	204	204	204	234	559	513	465	713	527	564	623	651	658
2,1	433	633	833	711	709	692	204	84	84	294	341	619	713	667	619	867	681	718	777	805	812
2,2	349	549	749	627	625	608	204	84	186	210	257	303	629	583	535	210	597	634	693	721	728
2,3	279	479	679	557	555	538	204	294	210	186	186	234	559	513	465	294	527	564	623	651	658
2,4	234	434	634	512	510	493	204	341	257	186	186	420	514	468	420	340	482	519	578	606	613
2,5	186	386	586	464	462	445	234	619	303	234	420	186	466	420	372	373	434	471	530	558	565
2,6	280	480	680	558	556	539	559	713	629	559	514	466	186	186	234	714	528	565	624	652	659
2,7	234	434	634	512	510	493	513	667	583	513	468	420	186	186	420	668	482	519	578	606	613
3,1	186	386	586	464	462	445	465	619	535	465	420	372	234	420	186	620	434	471	530	558	565
3,2	434	634	834	712	710	693	713	867	210	294	340	373	714	668	620	186	682	719	778	806	813
3,3	248	448	648	526	524	507	527	681	597	527	482	434	528	482	434	682	248	285	285	372	379
3,4	285	485	685	563	561	544	564	718	634	564	519	471	565	519	471	719	285	147	187	239	278
3,5	344	544	744	622	620	603	623	777	693	623	578	530	624	578	530	778	285	187	144	187	226
3,6	372	572	772	650	648	631	651	805	721	651	606	558	652	606	558	806	372	239	187	148	174
3,7	379	579	779	657	655	638	658	812	728	658	613	565	659	613	565	813	379	278	226	174	148

(Expressed in 2000 cents)
Ref: BF19MTX.XLS

WMATA fares are based on Tariff #19 effective 6/20/99.
Remaining transit provider fares are based on 2000 information.

In June of 2004, the Washington Metropolitan Area Transit Authority published a new tariff #23 for Metrorail and Metrobus operations. 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 this time, and the increases are reflected in the fare matrix. VRE fare increases in the summer of 2005 precipitated an update of the bus fare matrix for use in the conformity analysis of the 2005 CLRP and FY-2006-2011 TIP.

When calculating fares for each cell of the matrix 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. The basic peak and off-peak period fare policies addressed in the modeling procedures are shown in Exhibit 3-17.

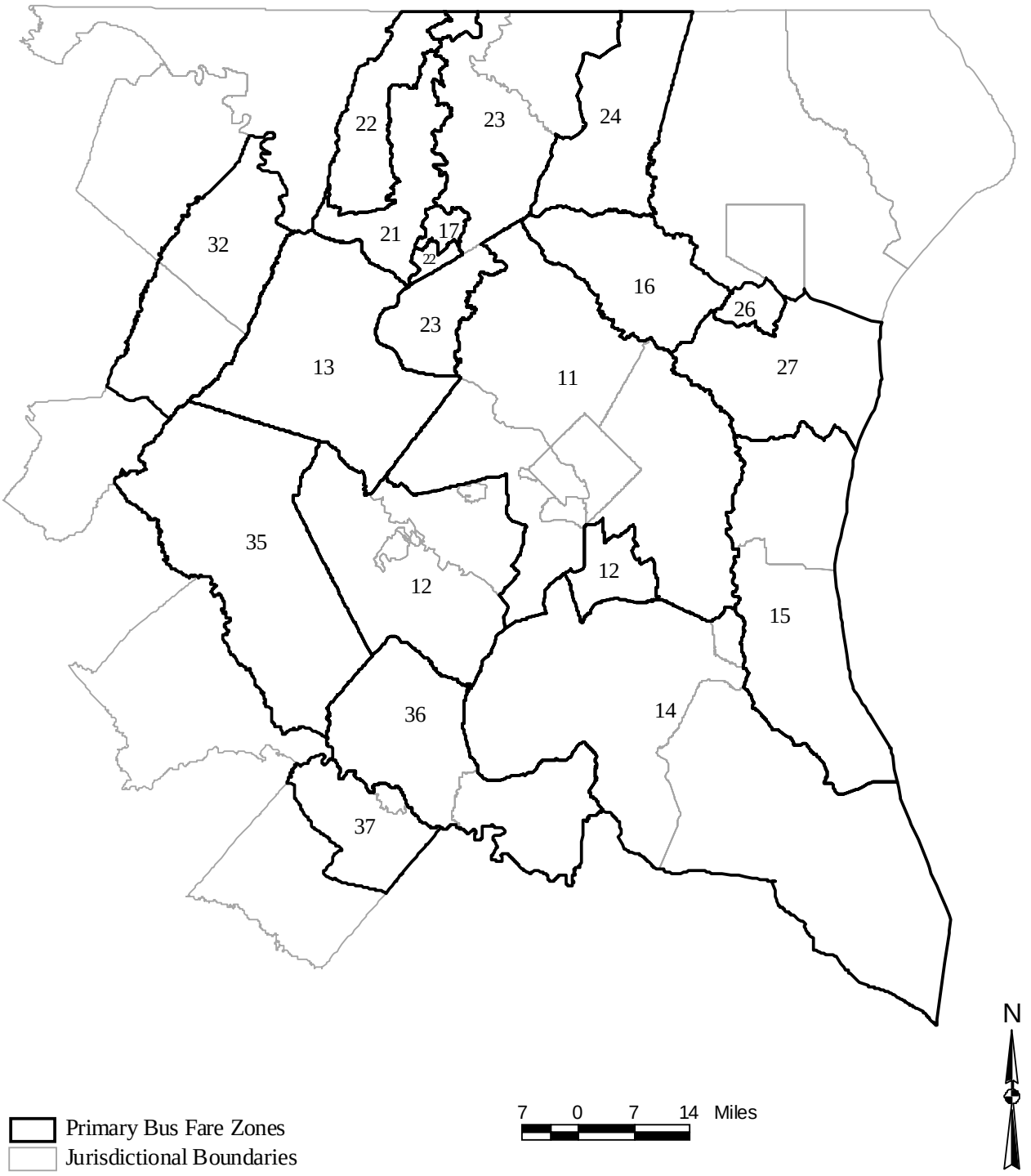
Future transit improvements in Montgomery County have been reflected in the COG fare zone system. Fare zone 1,7 now represents the addition of the Corridor Cities Transit-way and, rail and bus fares in that corridor. The bus fare matrix remains comprised of 21 fare zones that are described in Exhibit 3-27. Regional bus fare zone maps showing primary and secondary fare zones are displayed in Exhibits 3-28 and 3-29. The bus fare matrix for WMATA Tariff #23 is shown in Exhibit 3-30. Fares are provided in year 2005 cents (or the year that the tariff was in effect).

Exhibit 3-27: Bus Fare Zone/Service Areas for WMATA Tariff #23 (modified)

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

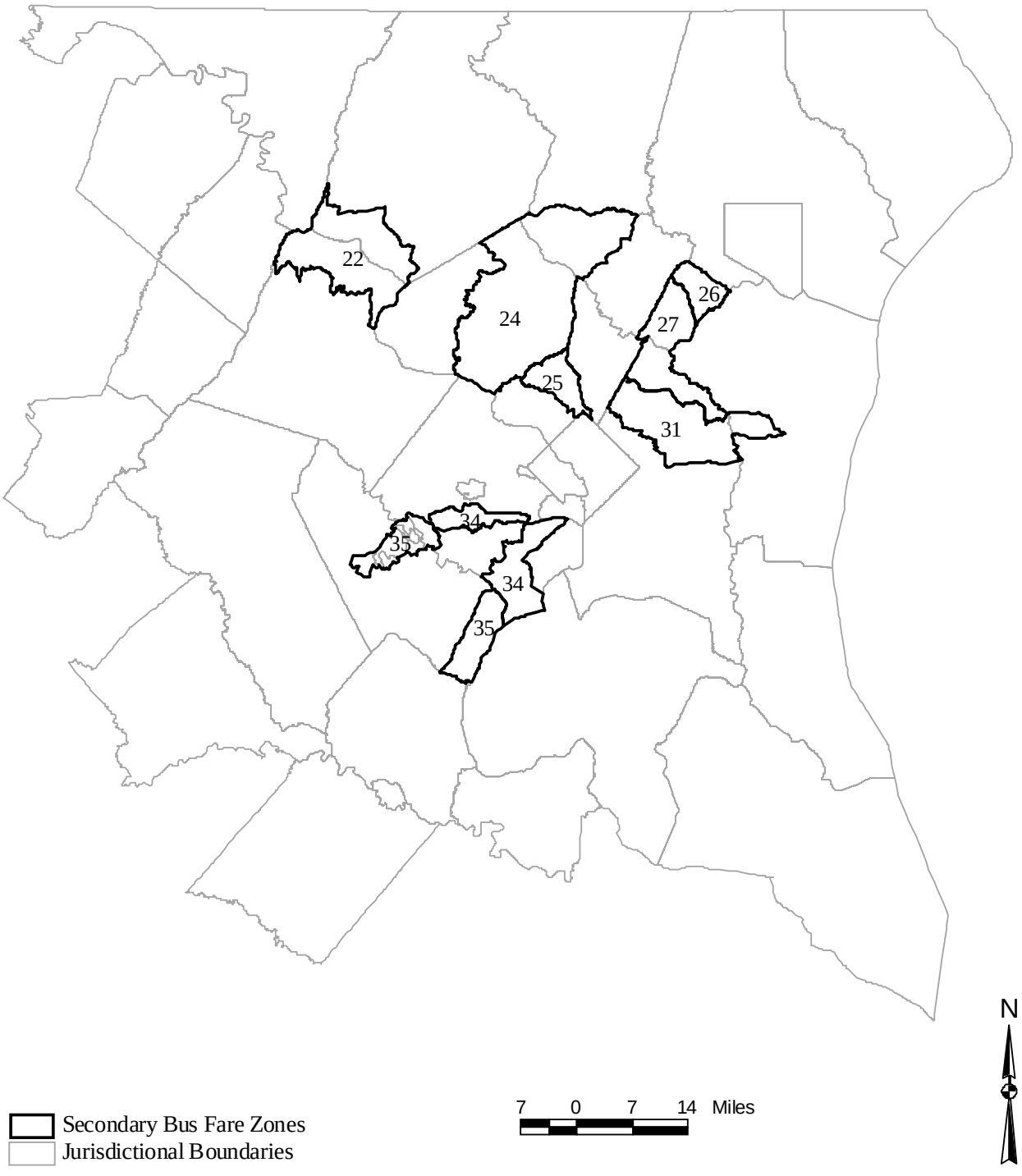
[5]This rail service includes MARC and VRE. Metrorail is not included, but is modeled in the RPFARE1 process.

Exhibit 3-28: Regional Primary Bus Fare Zone Map for Tariff #23 (modified)



WMATA's Tariff Number 23 (effective June 2004)

Exhibit 3-29: Regional Secondary Bus Fare Zone Map for Tariff #23 (modified)



WMATA's Tariff Number 23 (effective June 2004)
Ref: 19_sbusfarzn.wmf

Exhibit 3-30: Regional AM Peak and Off-Peak Bus Fare Matrix for 2005 Between MWCOG Fare Zones (Expressed in 2005 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	**1,1**	**1,2**	**1,3**	**1,4**	**1,5**	**1,6**	**1,7**	**2,1**	**2,2**	**2,3**	**2,4**	**2,5**	**2,6**	**2,7**	**3,1**	**3,2**	**3,3**	**3,4**	**3,5**	**3,6**	**3,7**
1,1	135	317	500	347	328	328	414	529	427	341	284	227	341	284	227	511	281	346	411	476	524
1,2	317	118	817	664	645	645	731	846	744	658	601	544	658	601	544	828	495	317	100	300	349
1,3	500	817	75	847	828	828	914	1029	927	841	784	727	841	784	727	1011	781	846	911	976	1024
1,4	347	664	847	100	675	675	761	876	774	688	631	574	688	631	574	858	628	693	758	823	871
1,5	328	645	828	675	357	656	740	857	755	669	612	555	669	612	555	839	609	674	739	804	852
1,6	328	645	828	675	656	299	742	857	755	669	612	555	669	612	555	839	609	674	739	804	852
1,7	414	731	914	761	740	742	130	667	557	471	130	414	755	698	641	641	695	760	825	890	938
2,1	529	846	1029	876	857	857	667	102	102	529	639	529	870	813	756	1040	810	875	940	1005	1053
2,2	427	744	927	774	755	755	557	102	400	427	427	427	768	711	654	400	708	773	838	903	951
2,3	341	658	841	688	669	669	471	529	427	341	341	341	682	625	568	341	622	687	752	817	865
2,4	284	601	784	631	612	612	130	639	427	341	284	284	625	568	511	511	565	630	695	760	808
2,5	227	544	727	574	555	555	414	529	427	341	284	227	568	511	454	511	508	573	638	703	751
2,6	341	658	841	688	669	669	755	870	768	682	625	568	341	341	341	852	622	687	752	817	865
2,7	284	601	784	631	612	612	698	813	711	625	568	511	341	284	284	795	565	630	695	760	808
3,1	227	544	727	574	555	555	641	756	654	568	511	454	341	284	227	738	508	573	638	703	751
3,2	511	828	1011	858	839	839	641	1040	400	341	511	511	852	795	738	400	732	857	922	987	1035
3,3	281	495	781	628	609	609	695	810	708	622	565	508	622	565	508	732	281	330	395	459	508
3,4	346	317	846	693	674	674	760	875	773	687	630	573	687	630	573	857	330	158	200	265	314
3,5	411	100	911	758	739	739	825	940	838	752	695	638	752	695	638	922	395	200	152	200	249
3,6	476	300	976	823	804	804	890	1005	903	817	760	703	817	760	703	987	459	265	200	152	184
3,7	524	349	1024	871	852	852	938	1053	951	865	808	751	865	808	751	1035	508	314	249	184	152

(Expressed in 2005 cents)
Ref: TAR23BFMTX.XLS

WMATA fares are based on Tariff #23 effective 6/27/04.
Remaining transit provider fares are based on 2005 information.

3.4 File Format Descriptions of the Version 2.1 D #50 Network Files

This section presents file format descriptions used in the network and fare building process. Exhibits 3-31 through 3-40 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 2006 CLRP and FY2007-2012 TIP is shown in Exhibit 3-41. Schematic flowcharts of the steps employed to develop the network files are presented in Exhibits 3-42 through 3-44. Note that the 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. The user should reference Chapter 1 of the Version 2.1 D #50 model User's Guide for more detail on subdirectory and filename specifications required in the model application.

Exhibit 3-31: 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) *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*
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 *10* 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 3-32: 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 3-33: File Format Description of Highway Network Link File (link.asc)

Columns	Format	Field Description
1-5	I5	A node
6-10	I5	B node
13-17	F5.2	Link Distance in whole miles w/explicit decimal
30-33	I4	Daily Ground Count in thousands
35-35	I1	Reverse Code (not used)
39-40	I2	Jurisdiction Code (0-23)
51-52	I2	Screenline Code (1-38) (21 and 30 not used)
54-55	I2	Link Facility Type Code (0-6)
61-64	I4	Toll Value in current year dollars
66-69	I1	Toll Group Code (1-10)
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)
107-116	A/N10	Project ID (From TIP and CLRP)

Notes:

The mode choice model requires that all costs be in 1980 dollars.
Limit Codes are 0,1=general use, 2=HOV2,3+ only, 3=HOV3+ 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).

Exhibit 3-34: Rail Station/PNR Lot File Format Description (sta.tpp.bse)

Columns	Format	Field Description
1-5	I5	Sequence Number
10	A1	Mode Code (M/Metrorail, C/Commuter Rail, B/Bus)
15	A1	Parking Available? (Y/N)
18	A1	Station Active? (Y/N)
21-44	A24	Station Name/PNR lot name
45-50	I6	Rail Station Network Centroid (2251-2500)
51-55	I5	Rail Station/PNR TAZ location (1-2191)
56-60	I5	Rail Station Node (7301-7399, 7600-7733)
61-65	I5	Parking lot node
66-70	I5	1st Bus Node
71-75	I5	2nd Bus Node
76-80	I5	3rd Bus Node
81-85	I5	4th Bus Node
91-100	I10	X Coord. of Station/PNR lot (NAD 83-based in feet)
101-110	I10	Y Coord. of Station/PNR lot (NAD 83-based in feet)
141-145	I5	Year of Station/PNR lot Opening (unused)

Exhibit 3-35: Rail Link File Format Description (rail_lnk.bse)

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

Exhibit 3-36: GIS Based Transit Walk Area File Format Description (GISWKA??.ASC)

Columns	Format	Field Description
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	Avg. 'Short' Walk Distance to Metrorail (in miles)
95-101	I7	Avg. 'Long' Walk Distance to Metrorail (in miles)
106-112	I7	Avg. 'Short' Walk Distance to Commuter Rail (in miles)
116-122	I7	Avg. 'Long' Walk Distance to Commuter Rail (in miles)
127-133	I7	Avg. 'Short' Walk Distance to Bus (in miles)
137-143	I7	Avg. 'Long' Walk Distance to Bus (in miles)
149-155	I7	Avg. 'Short' Walk Distance to ANY Transit (in miles)
161-167	I7	Avg. '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 3-37: GIS-Walk Link File Format Description (GISWKL??.ASC)

Columns	Format	Field Description
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 3-38: Bus Fare Zone Equivalency File Format Description (TAZFRZN.ASC)

Columns	Format	Field Description
Zonal data		
1-4	I4	TAZ Number (or Station No.)
5-8	I4	Bus fare zone, 1st zone, 1st digit
9-12	I4	Bus fare zone, 1st zone, 2nd digit
13-16	I4	Bus fare zone, 2nd zone, 1st digit
17-20	I4	Bus fare zone, 2nd zone, 2nd digit
45-48	I4	Special transit service fare (cents)
49-50	I2	Jurisdiction Code (0/DC, 1/MD, 2/VA Area 1 (Fairfax Co.), 3/ VA Area 2 (non-Fairfax Co.)
Station data		
29-32	I4	Station Bus Fare Code 1st zone, 1st digit
33-36	I4	Station Bus Fare Code 1st zone, 2nd digit
37-40	I4	Station Bus Fare Code 2nd zone, 1st digit
41-44	I4	Station Bus Fare Code 2nd zone, 2nd digit

Exhibit 3-39: Station Coordinate File Format Description (MFARE1.A1)

Columns	Format	Field Description
1-6	I6	Station Number (1-150)
7-12	I6	Station X Coordinate
13-18	I6	Station Y Coordinate

Exhibit 3-40: Peak and Off-Peak Bus Fare Matrix File Format Description (busfaram.asc and busfarop.asc)

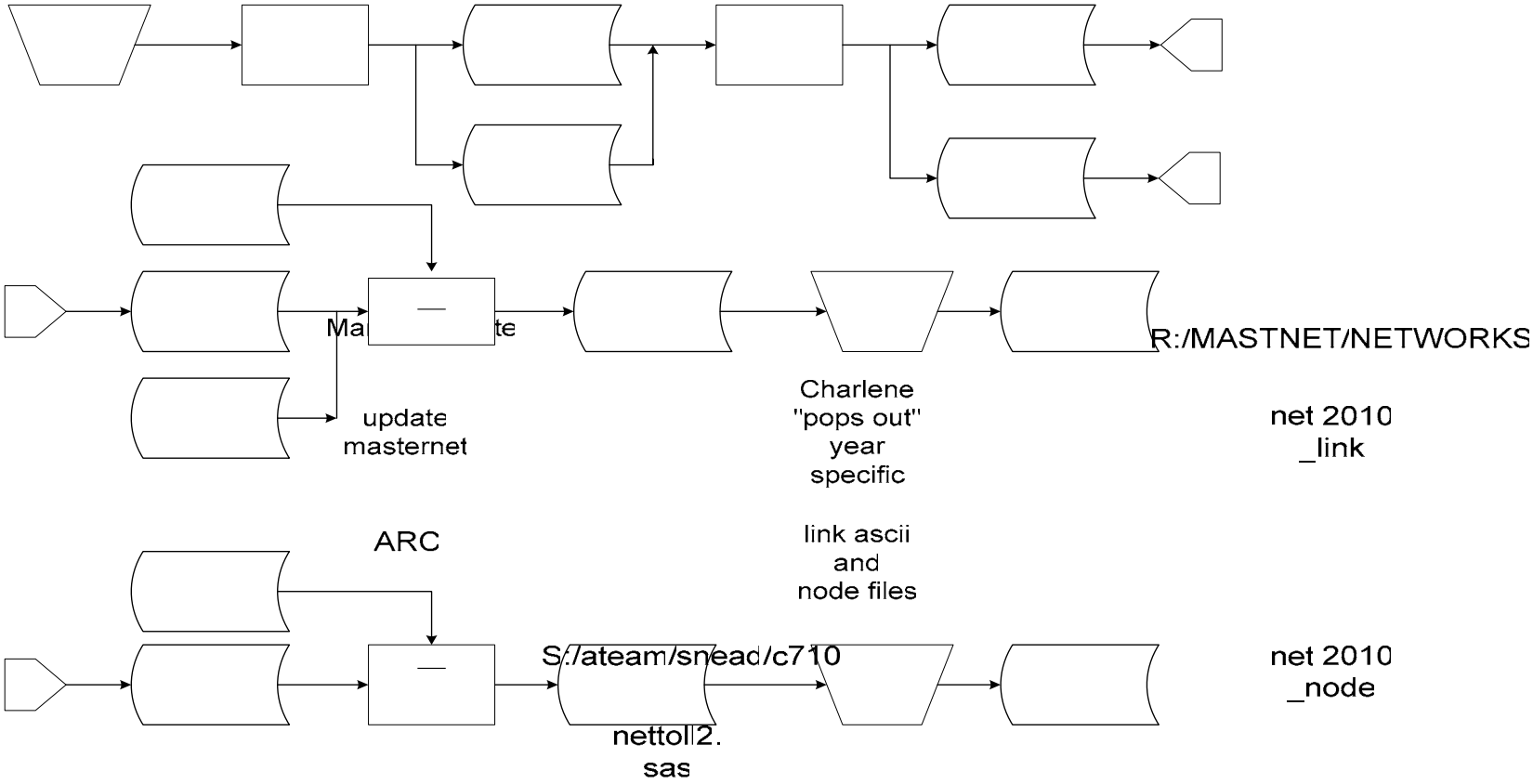
Columns	Format	Field Description
1-4	I4	Origin Bus Fare zone, 1st zone, 1st digit
5-8	I4	Origin Bus Fare zone, 1st zone, 2nd digit
9-12	I4	Destination Bus Fare zone, 1st zone, 1st digit
13-16	I4	Bus Fare from Origin Bus Fare Zone 11 to Destination zone, 11
17-20	I4	Bus Fare from Origin Bus Fare Zone 11 to Destination Zone 12
…	….	…
37-40	I4	Bus Fare from Origin Bus Fare Zone 11 to Destination Zone 17

Exhibit 3-41: Summary of Version 2.1 D #50 model/TP+ Network Filenames by Year

Highway Network / SubDirectory: CGV2_1D50	**2010**	**2020**	**2030**
Zone Net	Link.ASC	Link.ASC	Link.ASC
Zone Xys	Node.ASC	Node.ASC	Node.ASC
Transit Networks AM Peak Line Files (Mode)			
1	mode1am.tp	mode1am.tp	mode1am.tp
2	mode2am.tp	mode2am.tp	mode2am.tp
3	mode3am.tp	mode3am.tp	mode3am.tp
4	mode4am.tp	mode4am.tp	mode4am.tp
5	mode5am.tp	mode5am.tp	mode5am.tp
6	mode6am.tp	mode6am.tp	mode6am.tp
7	mode7am.tp	mode7am.tp	mode7am.tp
8	mode8am.tp	mode8am.tp	mode8am.tp
9	mode9am.tp	mode9am.tp	mode9am.tp
Off Peak Line Files (Mode)			
1	mode1op.tp	mode1op.tp	mode1op.tp
2	mode2op.tp	mode2op.tp	mode2op.tp
3	mode3op.tp	mode3op.tp	mode3op.tp
4	mode4op.tp	mode4op.tp	mode4op.tp
5	mode5op.tp	mode5op.tp	mode5op.tp
6	mode6op.tp	mode6op.tp	mode6op.tp
7	mode7op.tp	mode7op.tp	mode7op.tp
8	mode8op.tp	mode8op.tp	mode8op.tp
9	mode9op.tp	mode9op.tp	mode9op.tp
Station File	STA_TPP.BSE	STA_TPP.BSE	STA_TPP.BSE
Rail Link File	RAIL_LNK.BSE	RAIL_LNK.BSE	RAIL_LNK.BSE
FARES **Bus Fares (MFARE2)**			
TAZ/Bus Fare Equivalency	TAZFRZN.ASC.	TAZFRZN.ASC.	TAZFRZN.ASC.
Bus Fare Matrix - AM	BUSFARAM.ASC	BUSFARAM.ASC	BUSFARAM.ASC
Bus Fare Matrix - OP	BUSFAROP.ASC	BUSFAROP.ASC	BUSFAROP.ASC

Ref: EXH3-35V2.1D50.xls

Exhibit 3-42: 2006 CLRP / FY2007-2012 TIP AQC Network Development for 2010



Ref: C710INPUTS.VSD

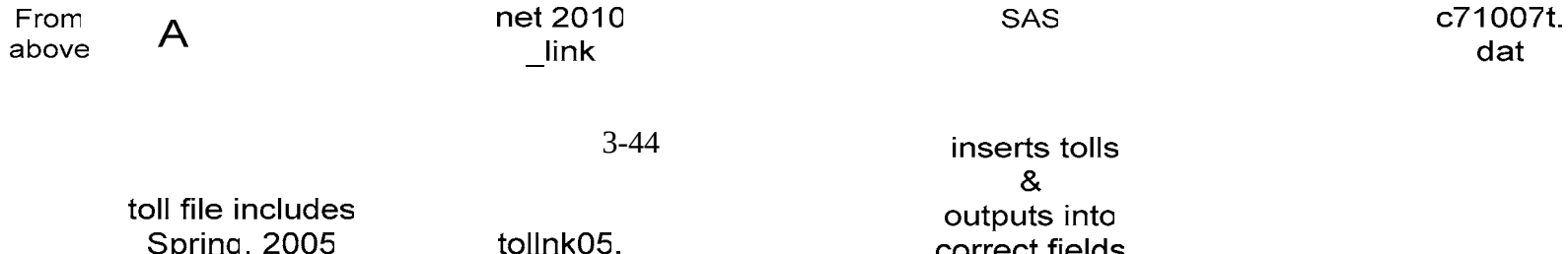
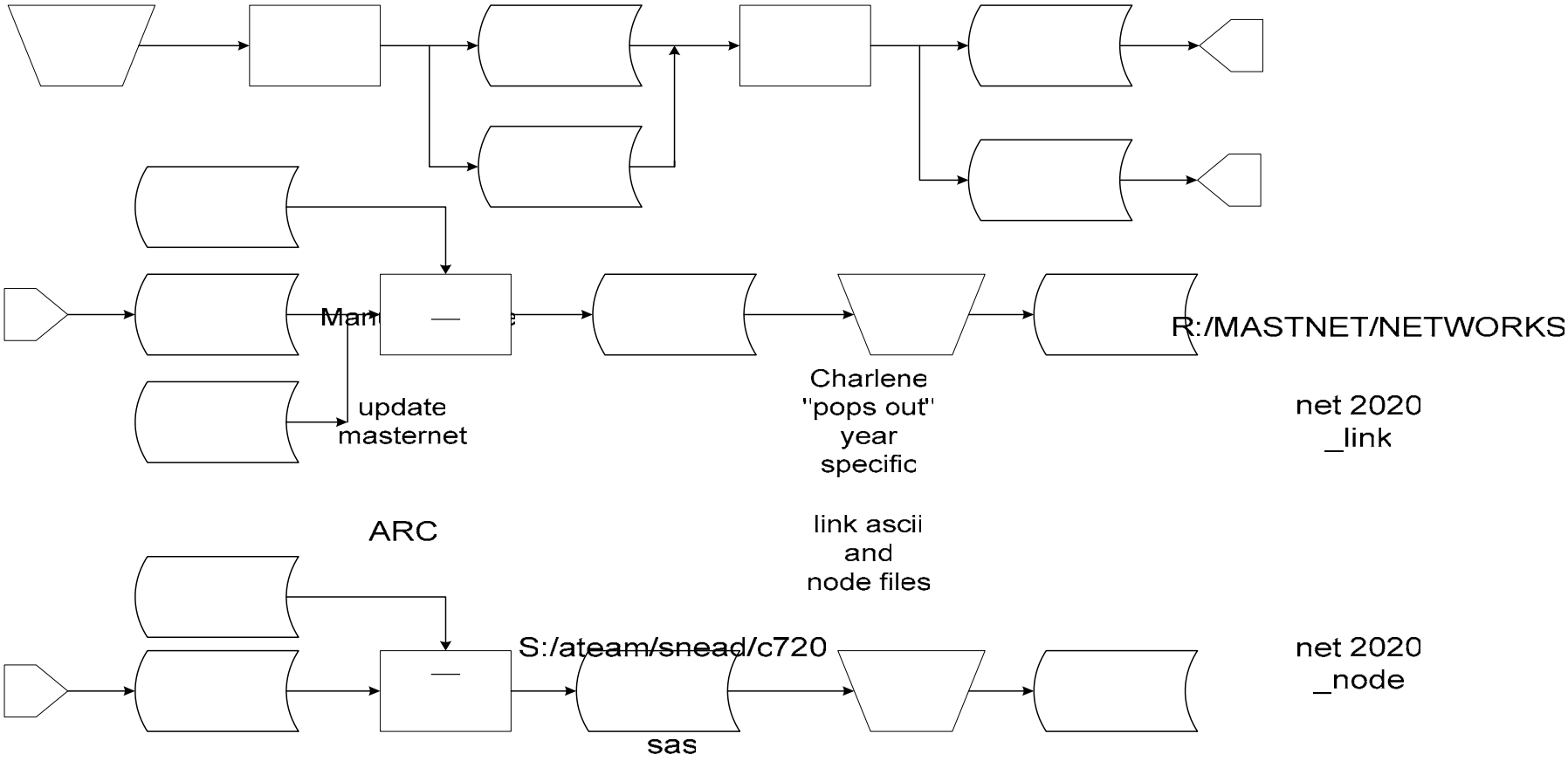
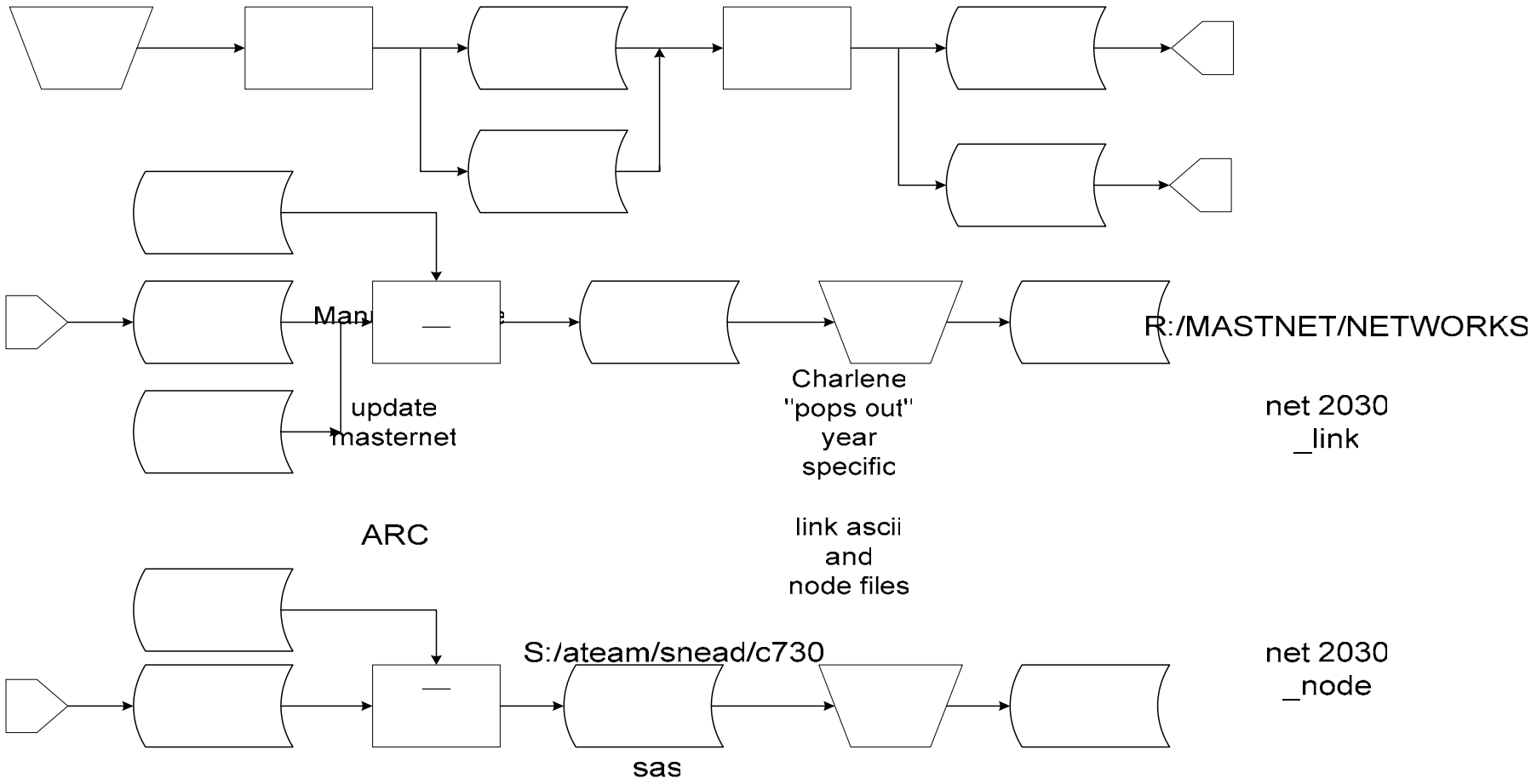


Exhibit 3-43: 2006 CLRP / FY2007-2012 TIP AQC Network Development for 2020



Ref: C720INPUTS.VSD

Exhibit 3-44: 2006 CLRP / FY2007-2012 TIP AQC Network Development for 2030



Ref: C730INPUTS.VSD

From above A net 2030 _link SAS c730 da

Appendix A: Highway / HOV Inputs for the 2006 CLRP and FY 2007-2012 TIP Air Quality Conformity Networks

Appendix A: Highway / HOV Inputs for the 2006 CLRP and FY 2007-2012 TIP Air Quality Conformity Networks

Appendix-A

2006 CLRP AND FY2007-2012 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
District of Columbia													
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		Klingle 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	8 freeway 4 local		2011	
DDOT	DI7A	Construct		11th St. Bridges (2 spans)	ramp movements to/from the northbound Anacostia Freeway for each span							2011	
Maryland													
MDOT Freeway													
MDSHA	MI2q	Construct	Approved	I-270	Interchange at Watkins Mill Road Extended		1	1	8	8+2	No	2020	Yes

Note: Shaded areas represent changes from the FY2006-2011 TIP / 2005 CLRP

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2006 CLRP AND FY2007-2012 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
MDSHA	MI2SHOV MI2S	Construct	Pending	I-270/US 15 Corridor	Shady Grove Metro	I-70	1	1	varies		No	2020	Yes
MDSHA		Reconstruct		I-270	Interchange at MD 121		1	1			No	2010	
MDSHA	MI4	Widen	Approved	I-70 - Phases 2B, 2C, 2D, 3, 4, and East St. Extension	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		1	1	8	8	No	2010	Yes
MDSHA	MI1p	Construct	Pending	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	2009	Yes
MDSHA	MI1m	Construct	Pending	I-95/I-495/Arena Drive Interchange	MD 214	MD 202	1	1	8	8+2	No	2010	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
MDSHA	MP12	Construct	Pending	Intercounty Connector	I-270	I-95 / US 1	0	1	0	6	No	2010	Yes
MDOT Primary													
MDSHA	MP10a	Reconstru	pending	US 1 (Baltimore Avenue)	College Avenue	Cherry Hill Road	2	2	4	4	No	2020	Yes
MDSHA	MP10b	Widen	pending	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	Pending	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	2030	Yes
MDSHA		Construct	Approved	MD 4 (Pennsylvania Avenue)	Interchanges at Westphalia Rd., Suitland Pkwy., Dower		2	5	4	6	No	2010	Yes
MDSHA	MP3a	Upgrade/W	Approved	MD 4	MD 223	I-95/I-495	2	5	4	6	No	2010	No
MDSHA		Construct	Approved	MD 5 (Branch Avenue)	Interchange at Earnshaw/Burch Hill Roads		2	5	4	6	No	2010	No

Note: Shaded areas represent changes from the FY2006-2011 TIP / 2005 CLRP

Appendix-A

2006 CLRP AND FY2007-2012 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
MDSHA	MP4f	Upgrade/W	Approved	MD 5 (Branch Avenue)	US 301 at T.B.	North of the Capital Beltway	2	5	4	6	No	2010	No
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	Hughesville	0	5	0	4	No	2007	No
MDSHA		Construct	pending	US 15 Catoctin Mountain Highway	MD 26 Liberty Road		2	2	4	4	No	2010	Yes
MDSHA		Study		US 15 Catoctin Mountain Highway	@ Monocacy Blvd							not coded	
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	Yes	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	Yes	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	pending	MD 75 Relocated	MD 80		0	3	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	pending	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
MDSHA		Upgrade	pending	MD 97 (Georgia Avenue)	MD 28 (Norbeck Road)		2	2	6	6	No	2010	Yes

Note: Shaded areas represent changes from the FY2006-2011 TIP / 2005 CLRP

Appendix-A

2006 CLRP AND FY2007-2012 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
MDSHA		Upgrade	Approved	MD 97 (Georgia Avenue)	Randolph Road		2	2	6	6	No	2010	Yes
MDSHA	MP14	Reconstruc	Pending	MD 202 (Largo Town Ctr. Metro Access Improvs.)	north of Brightseat Rd	South of Technology Way	2	2	6	6+2	No	2010	Yes
MDSHA	MP6d	Upgrade	Pending	MD 210 (Indian Head Highway)	MD 228	Capital Beltway	2	2	6	6	No	2020	Yes
MDSHA	MP8e	Widen	pending	US 301	North of Mount Oak Road	US 50	2	5	4/6	6+2	No	2030	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		Construct	Approved	MD 355	Montrose/Randolph Rds.	CSX RR	2	2	6	6	No	2010	Yes
MDSHA		Study		Governor Harry Nice Bridge								not coded	
MDOT Secondary													
MDSHA	MS33	Widen	N/A	MD 27	MD 355	A 305	2	2	4	6	Yes	2006	
MDSHA	MS3d	Widen	Approved	MD 28 (Darnestown Road)	Riffle Ford Road	Great Seneca Highway (MD 119)	3	3	2	4/6	Yes	2004	Yes
MDSHA	MS3e	Construct	Approved	MD 28/Rockville Twn. Ctr. Interchanges	MD 586/MD 911		3	3	2	4	No	2030	Yes
MDSHA	MS2f	Construct		MD 28 (Norbeck Road) / MD 198 (Spencerville Road)	MD 97	I-95	2	2	2/4	4/6	No	2030	Yes
MDSHA	MS32	Widen	Approved	MD 117	I-270	Seneca Creek State Park	2	2	2	4	No	2010	Yes
MDSHA	MS34	Widen		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		MD 201 (Kenilworth Ave.)	River Rd.	Pontiac St.	2	2	4	6		2010	

Note: Shaded areas represent changes from the FY2006-2011 TIP / 2005 CLRP

Appendix-A

2006 CLRP AND FY2007-2012 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
MDSHA	PGS6	Construct	Approved	MD 212 Relocated (Ammendale/Virginia Manor	US 1	I-95	3	2	2	4	Yes	2005	Yes
MDSHA	MS30	Widen/Cor	Approved	MD 414 Extended	MD 210	I-295	0	2	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
MDSHA	MS18i	Widen	Approved	MD 450 (Annapolis Road)	Whitfield Chapel Road	Seabrook Road	2	2	2	5	Yes	2005	Yes
MDSHA	MS18h	Widen	Approved	MD 450 (Annapolis Road)	MD 193	Stonybrook Drive	2	2	2	4/6	Yes	2005	Yes
MDSHA	MS20c	Construct	Approved	MD 475 (East Street Extended)	South Street	proposed Monocacy Boulevard	0	3	0	4	No	2010	Yes
MDSHA		Study	Pending	UM Connector	I-95/I-495 Interchange	University of Maryland campus	0	0	0	0	No	not coded	Yes
Montgomery County													
Mont.Co	MC11b	Construct	N/A	A-305 - MidCounty Highway Extended	Stringtown Road	MD 27 (Ridge Road)	0	3	0	4	No	2015	No
Mont.Co.	MC11c	Construct	N/A	A-305 - MidCounty Highway Extended	MD 355	Stringtown Road	0	3	0	2	No	2015	No
Mont.Co.	nrs	Construct		Burtonsville Access Rd.	MD 198	School Success Rd.	0	4	0	2		2010	Yes
Mont.Co.	nrs			Century Blvd./Crystal Rock Loop	existing Century Blvd.	Crystal Rock Drive		3		4	No	2010	No
Mont.Co.	nrs	Construct		Chapman Avenue	Randolph Road	Old Georgetown Road	0	3	0	2	No	2008	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~~	~~2010~~	~~No~~
Mont.Co.	MC7b	Construct		Goshen Rd. Fac. Planning	Warfield Road	Brink Road	0	3	0	2	no	2012	No

Note: Shaded areas represent changes from the FY2006-2011 TIP / 2005 CLRP

Appendix-A

2006 CLRP AND FY2007-2012 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
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	2010	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	2015	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	2015	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	2009	No
Mont.Co.	MC15	Construct	N/A	Montrose Parkway West	Montrose Road (Tower Oaks Blvd.)	old' Old Georgetown Road	0	2	0	4	No	2010	No
Mont.Co.	MC30	Construct		Nebel St Extended	Randolph Rd	Target Store Site	0	3	0	4		2008	Yes
Mont.Co.	MC18a	Widen	N/A	Norbeck Rd. Ext.	MD 28	MD 198	3	3	2	4	No	2020	No
Mont.Co.	nrs	Construct		Observation Drive Extended	existing terminus	MD 355 Bypass	0	3	0	2	No	2012	No
Mont.Co.	MC42	Construct		Randolph Road	Parklawn Drive	Rock Creek Park	2	2	4	5	No	2015	No
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		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	3		2008	Yes

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(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
Prince Georges County													
PG Co.	PGS3a	Widen	N/A	Addison Road	MD 214	Walker Mill Road	3	3	2	4	Yes	2012	No
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	2007	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
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)	Old Chapel Road	4	4	2	4	No	2015	No
PG Co.	PGS10	Widen	N/A	Brandywine Road	north of Piscataway 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

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2006 CLRP AND FY2007-2012 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
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
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	Indian Head Highway (MD 210)	4	4	2	4	No	2015	No
PG Co.	PGS30a	Widen	N/A	Good Luck Road	east of Kenliworth Avenue (MD 201)	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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(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
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
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.	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

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(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
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	Ardwick-Ardmore Road	0	4	0	4	No	2015	No
PG Co.	PGP2	Construct	N/A	Suitland Parkway	interchange at Rena/Forestville Roads		5	5	0	0	No	2025	No
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

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(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
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
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
Frederick County													
Fred.Co.	FS2	Construct	N/A	Monocacy Blvd	Hughes Ford Rd.	Gas House Pike	0	3	0	4	Yes	2009	No
Charles County													
Chas.Co	CHS1	Widen/ Realign	N/A	Cross County Connector (Billingsly Rd.)	Middletown Rd.	MD 210	3	3	2	4		2009	No
Anne Arundel County													
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	AA3c	Widen	N/A	MD 2	Virginia Avenue	MD 214		2	2/4	4/6		2003	
	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	

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BMC	AA5c	Widen	N/A	MD 32	BW Parkway	Howard County Line		1	4	8		2020	
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	
Carroll County													
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	
Howard County													
BMC	HW1b	Widen	N/A	I-70	US 29	US 40	1	1	4	6		2030	
BMC	HW1a	Reconstru	N/A	I-70 (partial to full interchange)	@ Marriotsville 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	

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BMC	HW10b	Widen	N/A	US 29 NB	S. of MD 175	Middle Patuxent River		5	4	6		2010	
BMC	??	Reconstruc	N/A	US 29 (full interchange)	@ Rivers Edge Road			5				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	??	Widen	N/A	MD 100	Long Gate Parkway	US 29		1	4	6		2005	
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		2009	
BMC	HW8b	Widen	N/A	MD 216	West of US 29	Sanner Road		3	2	4		2020	
BMC	HW16C	Widen	N/A	Gorman Road	Stephens Road	US 1		3	2	3		2025	
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	
Federal Lands													
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	

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Virginia													
VDOT Freeway													
VDOT	VI3b	Restripe	PCE-1	I-395 HOV (3 lanes total)	I-95	DC	1	1	2	3	No	2010	No
VDOT	VI13c	Study	PCE-1	I-395 HOV ramp connections	HOV access in Alexandria		1	1	-	-	No	not coded	No
VDOT	VI4i	Construct	EA-2	I-495 HOT (peak)	I-395	S. of VA 193 (Georgetown Pike)	1	1	8	8+4	No	2010	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	2010	No
VDOT		Construct	Pending	I-495 HOT Lanes Interchange	All movements	@ VA 123 (Chain Bridge Road)	1	1	-	-	No	2010	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	2010	No
VDOT		Construct	Pending	I-495 HOT Lanes Interchange	HOT movements to and from South Only	@ US 29	1	1	-	-	No	2010	No
VDOT		Construct	Pending	I-495 HOT Lanes Interchange	All movements	@ VA 620 (Braddock Road)	1	1	-	-	No	2010	No
VDOT		Construct	Pending	Construct ramps connecting the existing I-95 / I-395 HOV lanes on Shirley Highway to proposed HOT lanes on the Capital Beltway.	From I-95 / I-395 HOV lanes to I-495 HOT lanes		1	1	-	-	No	2010	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	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	Reconstruc	Pending	I-66 Interchange	@ US 29 (Gainesville)		1	1	-	-	No	2014	No
VDOT	VI1c	Widen	CE-4	I-66 HOV during peak	VA 234 (Prince Wm. Pkwy)	VA 234 Business (Sudley Rd.)	1	1	4	8	yes	2006	No
VDOT	VI1ca	Widen	CE-4	I-66 HOV during peak	US 29 (Gainesville)	VA 234 (Prince William Parkway)	1	1	4	8	no	2010	Yes

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Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
VDOT	VI1aa	Reconstruc	Pending	I-66 Interchange	@ I-495 (Capital Beltway)		1	1	-	-	No	2013	Yes
VDOT		Study	Pending	I-66 Location Study (inclu. Rail Alternatives)	US 15 (@ Haymarket)	I-495 (Capital Beltway)	1	1	4/6	6/8	No	not coded	No
VDOT	VI1l	Study	PCE-1	I-66 ramp	EB on-ramp from US 29 (Arlington)		1	1	-	-	no	not coded	No
VDOT		Study	PCE-1	I-66 WB (Idea-66 (West Bound Spot Improvement Study))	Rosslyn	Dulles Airport Access Rd.					no	not coded	Yes
VDOT		Study		I-395/I-95 HOT LANES (PPTA)	Virginia State Line	Massaponax					No	not coded	Yes
VDOT	VI2p	Widen	CE-1	I-95 (provide 4th lane)	Newington	VA 123	1	1	6	8	No	2009	Yes
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	VI2l	Restripe	PCE-1	I-95 HOV (3 total)	Quantico Creek	I-495	1	1	2	3	no	2010	No
VDOT	VI2i	Construct	CE-1	I-95 HOV (peak)	Stafford Co./PW Line to	Quantico Cr.	-	1	-	2	No	2015	No
VDOT	VI2d	Construct	Pending	I-95 Interchange	@ VA 7900 (Franconia-Springfield Parkway)	LOV Access to & from West/from & to North	-	1	-	-	No	2015	No
VDOT	VI2ac	Reconstruc	Pending	I-95 Interchange	@ VA 613 (Van Dorn Street)		1	1	-	-	No	2015	No
VDOT	VI2ab	Reconstruc	Pending	I-95 Interchange	@ VA 642 (Lorton Road)		1	1	-	-	No	2010	No
VDOT	VI2c	Reconstruc	approved	I-95/395/495 Interchange			1	1	-	-	Yes	2007	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	2015	No
VDOT		Reconstruc	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	-	-	yes	2005	No
VDOT	MW1	Widen	Pending	Dulles Airport Access Road	Dulles Airport	VA 123	1	1	4	6	No	2010	No

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Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
VDOT	VP21d	Widen	N/A	Dulles Greenway	Goose Creek Bridge	VA 901 (Claiborne Parkway)	1	1	4	6	No	2005	No
VDOT	VP21e	Widen	N/A	Dulles Greenway	VA7/15 Bypass	Goose Creek Bridge	1	1	4	6	No	2006	No
VDOT	VP21b	Construct	N/A	Dulles Greenway Interchanges	@ VA 653 & @ Battlefield Parkway		1	1	-	-	No	2005	No
VDOT Primary													
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	nrs	Reconstruc	Pending	US 1	@ VA 619 (Joplin Road)	USMC HERITAGE CENTER ACCESS	-	-	-	-	No	2006	Yes
VDOT	VP1f	Widen	Approved	US 1 (3la. NB - 4 la. SB)	Lorton Rd.	Telegraph Rd.	2	2	4	7	Yes	2005	no
VDOT	VP1fb	Widen	Approved	US 1 (as part of VP1f)	Armistead Rd.	Lorton Rd.	2	2	4	6	yes	2005	No
VDOT	VP1o	Widen	Approved	US 1 (Neabsco Creek Bridge)	VA 610 (Neabsco Road)	VA 638 (Neabsco Mills Road)	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	2008	No
VDOT	nrs	Reconstruc	Pending	US 1 Interchange	@ Russell Road		1	1	-	-	No	2010	No
VDOT		Study	Pending	US 1 Location Study	Stafford County Line	SCL Alexandria (I-95 Capital Beltway)	2	2	4/6	6/8	complete	not coded	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
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 Parkway	2	2	4	6	No	2009	Yes

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							from	to	from	to			
VDOT	VP2m	Widen	Pending	VA 7	Reston Parkway	Dulles Toll Rd.	2	2	4	6	No	2012	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	Reconstruc	Pending	VA 7	@ VA 606 (Baron Cameron Ave.)		-	-	-	-	No	2005	Yes
VDOT	VP2t	Construct	Pending	VA 7 interchange	@ Claiborne Pkwy./West Spine Rd.		-	1	-	-	No	2006	No
VDOT	nrs	Reconstruc	Pending	VA 7	@ VA 711 (Williams Gap Road)		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	Reconstruc	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
VDOT	nrs	Reconstruc	N/A	US 15 (James Monroe Highway)	Whites Ferry Rd.	Lucketts Road	3	3	2	2	No	2007	Yes
VDOT	nrs	Reconstruc	N/A	US 15 (James Monroe Highway)	Lucketts Road	Maryland State Line	3	3	2	2	No	2008	No
VDOT	nrs	Reconstruc	N/A	US 15 (James Monroe Highway)	Village of Lucketts	Vicinity of VA 662	3	3	2	2	No	2006	No
VDOT	nrs	Reconstruc	Pending	VA 27 Interchange	@ VA 244 (Columbia Pike)		-	-	-	-	No	2011	No
VDOT	VP6h	Widen	Pending	VA 28	Fauquier County Line	VA 215 (Vint Hill Road)	3	3	2	4	No	2020	No
VDOT	VP6ka	Widen	Pending	VA 28	VA 215 (Vint Hill Road)	Residency Road	3	3	2	4	No	2010	No
VDOT	VP6k	Widen	Pending	VA 28	VA 215 (Vint Hill Road)	VA 234 Bypass	3	2	4	6	No	2015	No
VDOT	nrs	Recons/W	Pending	VA 28	Bridge over Broad Run	Replace / Widen to ultimate width	3	3	2	6	Yes	2007	Yes

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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/Upg	N/A	VA 28 PPTA (Phase II)	I-66	VA 7	2	1	6	8	No	2010	No
VDOT	VP6ea	Widen/Upg	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	2008	No
VDOT		Reconst.		VA 28 Interchange	@ New Braddock Rd.		-	-	-	-	No	2007	Yes
VDOT	VP6u	Upgrade	N/A	VA 28 PPTA (Phase I)	US 50 Interchange	Barnsfield (SASM) Interchange	2	1	6	6	complete	2006	No
VDOT	VP6v	Construct/U	N/A	VA 28 PPTA (Phase I) Interchange	@ VA 668 (McLearen Road)	SASM Interchange to VA 668 upgrade	2	1	6	6	No	2006	No
VDOT	VP6w	Construct/U	N/A	VA 28 PPTA (Phase I) Interchange	@ Sterling Boulevard	VA 606 to VA 625 upgrade	2	1	6	6	Yes	2006	No
VDOT	VP6x	Construct	N/A	VA 28 PPTA (Phase I) Interchange	@ VA 625 (Church & Waxpool Rds.)		2	2	6	6	Yes	2006	No
VDOT	VP6y	Construct	N/A	VA 28 PPTA (Phase I) Interchange	@ Westfields Boulevard		-	-	-	-	complete	2005	No
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	2014	No
VDOT	VP7r	Widen	Pending	US 29	Virginia Oaks Drive	I-66	2	5	4	6	No	2014	No

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VDOT	VP7s	Widen	Pending	US 29 (add NB lane)	I-66	Entrance to Conway Robinson MSF	3	2	4	5	No	2014	No
VDOT	VP7ad	Widen	Pending	US 29	VA 898 (Old Centreville Road)	WCL of Fairfax	2	2	4	6	No	2011	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
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	2008	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	Reconstruc	Pending	US 50	Waples Mill Rd (intersection Improvements)	2nd EB to NB left turn lane	0	0	0	0	No	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	Reconstruc	Pending	US 50 (Arlington Blvd.)	ARC/FFX Line	Washington Blvd.	2	2	6	6	No	2015	No
VDOT	AR2f	Reconstruc	Pending	US 50 (Arlington Blvd.)	Pershing Dr.	Ft. Myer Dr.	2	2	6	6	No	2015	No
VDOT	nrs	Reconstruc	Pending	US 50 Interchange	@Jaguar Trail		2	2	-	-	No	2007	Yes
VDOT	nrs	Reconstruc	Pending	US 50 Interchange	@ VA 120 (Glebe Road)		-	-	-	-	No	2010	No

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VDOT	nrs	Reconstruc	Pending	US 50 Interchange	@ VA 27 (Washington Blvd.)		-	-	-	-	No	2010	No
VDOT	VP8o	Reconstruc	Pending	US 50 Interchange	@ Courthouse Road / 10th Street		-	-	-	-	No	2008	Yes
VDOT	nrs	Reconstruc	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	2014	No
VDOT	nrs	Reconstruc	Approved	VA 120 (Glebe Road)	@ VA 244 (Columbia Pike)		-	-	-	-	No	2004	Yes
VDOT	nrs	Reconstruc	Approved	VA 120 (Glebe Road)	@ Arlington Ridge Rd.	left turn lanes	-	-	-	-	No	2005	Yes
VDOT	nrs	Reconstruc	Pending	VA 120 (Glebe Road)	Military Rd.	DC line	2	2	2	2	No	2020	No
VDOT	nrs	Reconstruc	N/A	VA 120 (Glebe Road)	Quebec St.	2nd St.	2	2	-	-	No	2006	Yes
VDOT	nrs	Reconstruc	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	No	2013	No
VDOT	VP10ob	Widen	Pending	VA 123 (Dolley Madison Blvd.)	DTR Ramps	VA 694 (Great Falls St.)	2	2	4	6	No	2010	No
VDOT	nrs	Construct	Approved	VA 123 Interchange	@ US 1		-	-	-	-	No	2008	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
VDOT	VP10r	Widen	Pending	VA 123	Burke Center Parkway	Braddock Road	2	2	4	6	No	2020	No
VDOT	nrs	Reconstruc	Pending	VA 123	@ VA 620 (Braddock Road)		2	2	-	-	No	2005	Yes

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VDOT	VP10l	Widen	Pending	VA 123 (Occoquan River Bridge)	South Approach	VA 722 North	2	2	2	6	yes	2006	Yes
VDOT	nrs	Reconstruc	Pending	VA 193	@ Riverbend Road &	@ Nethercliff Hall Road	3	3	2	2	No	2007	Yes
VDOT	VP24a	Relocate/ Widen	Approved	VA 215	0.5 mi. west of VA 28 intersection	VA 28	3	3	2	4	No	2011	No
VDOT	nrs	Construct	Pending	VA 234 Interchange	@ US 1		-	1	-	-	No	2011	No
VDOT	VP12d	Widen/Upg	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	Yes	2007	Yes
VDOT	VP12a	Widen	Pending	VA 234 (Dumfries Road)	Eclipse Dr.	Snowfall Dr.	2	2	2	4	Yes	2006	Yes
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/upg	Approved	VA 234 (Manassas Bypass)	VA 234 S. of Manassas	I-66	5	1	4	6	No	2020	No
VDOT	VP12o	Construct	Pending	VA 234 (Manassas Bypass)	I-66	Loudoun County Line	-	2	-	4	No	2012	No
VDOT	VP13a	Widen	Pending	VA 236	Pickett Road	I-395	2	2	4	6	No	2020	No
VDOT	nrs	Reconstruc	Pending	VA 236 (intersection/spot improvements)	Pickett Road	Lake Drive	2	2	4	4	No	2008	Yes
VDOT	nrs	Reconstruc	Pending	VA 236 EB	@ VA 620 (Braddock Road)		-	-	-	-	No	2006	Yes
VDOT	nrs	Reconstruc	Pending	VA 236 WB	@ VA 620 (Braddock Road)		-	-	-	-	No	2006	Yes
VDOT	VP26a	Construct	Pending	VA 411 (Tri-County Parkway) (nee VA 28 Bypass)	VA 234 (Sudley Road) @ Godwin Drive	I-66	0	5	0	6	No	2015	No
VDOT	VP26b	Construct	Pending	VA 411 (Tri-County Parkway) (nee VA 28 Bypass)	I-66	VA 620 (Braddock Road) @ VA 613	0	2	0	4	No	2020	No
VDOT Urban													
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	No	2006	No

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VDOT	VU28d	Widen/upg	Pending	Battlefield Parkway / Lawson Rd.	Sycolin Road	Kincaid Boulevard	4	2	2	4	No	2010	Yes
VDOT	VU28da	Construct	Pending	Battlefield Parkway	Kincaid Boulevard	Route 7	0	2	0	4	No	2010	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	No	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	2014	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	2011	No
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	Study	Pending	Potomac Yard Spine Road	US Route 1	G.W. Parkway	0	3	0	4	No	not coded	No
VDOT	VU26b	Widen	Approved	Richmond Ave.	Dumfries Road	Ellicott Lane	3	3	2	4	yes	2005	No
VDOT	VU30a	Widen	Pending	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	2008	Yes
VDOT	VU40	Widen	Pending	US 29 (Lee Highway)	WCL of City of Fairfax	Chain Bridge Road	2	2	4	6	No	2012	Yes

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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	2010	No
VDOT	nrs	Widen	N/A	VA 234 (Sudley Road) 3rd NB lane	Dorsey Circle	Godwin Dr.	2	2	4	5	No	2011	No
VDOT	VU48b	Widen	Pending	Wellington Road	Godwin Drive	VA 28 (Nokesville Road)	3	3	2	4	No	2008	Yes
Arlington Secondary													
VDOT	nrs	Construct	N/A	Glebe Rd. Extended	US 1	Potomac Avenue	-	3	-	4	complete	2004	No
VDOT	nrs	Construct	N/A	Potomac Avenue	Four Mile Run	Crystal Drive	-	3	-	4	complete	2005	No
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	Reconstruc	Pending	Wilson Blvd.	N. Quincy	Washington Blvd.	2	2	4	4	No	2010	No
VDOT	AR19a	Reconstruc	Pending	Wilson Blvd.	N. Frederick	George Mason Dr.	2	2	4	4	complete	2004	Yes
Fairfax Secondary													
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	VA 608 (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	yes	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

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Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
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	2015	Yes
VDOT	VSF4i	Widen	Pending	VA 611 (Telegraph Road)	VA 635 (Hayfield Road)	VA 633 (S. Kings Hwy.)	3	3	2	4	No	2015	Yes
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	FFX5d	Construct	Pending	VA 613 (S. Van Dorn St.)	Kingstowne Blvd.	VA 611	0	3	0	4	complete	2005	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/W	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	yes	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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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	yes	2005	Yes
VDOT	VSF36	Construct	N/A	VA 645 (Clifton Road)	VA 620 (Braddock Road)	US 29 (Lee Highway)	3	3	2	4	yes	2008	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	2012	Yes
VDOT	VSF37	Widen	Pending	VA 650 (Gallows Road)	Gatehouse Road	Prescott Drive	3	3	4	6	No	2012	Yes
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	Yes	2007	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
VDOT	VSF18h	Widen	Pending	VA 657 (Centreville Road)	VA 608 (West Ox Rd)	VA 608 (Frying Pan Rd)	3	3	2	4	No	2009	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

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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	2012	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	2007	Yes
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.	2	2	6	4+2	No	2015	No
VDOT	VSF25ea	Widen	Pending	VA 7100 (Fairfax Co Pkwy HOV)	Sunrise Valley	Rugby Rd.	2	2	4	4+2	No	2015	No
VDOT	VSF25e	Widen	Pending	VA 7100 (Fairfax Co Pkwy HOV)	Rugby Rd.	US 50	2	2	4	4+2	No	2010	No
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 (Hooes Road)	VA 640 (Sydenstricker Road)	2	2	4	6	No	2015	No

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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	2009	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	3	3	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
VDOT	FFX24c	Widen	Pending	VA 8460 (Stonecroft Blvd.)	VA 661 (Old Lee Rd.)	Willard Rd.	3	3	4	6	No	2010	No
FHWA/VDOT	FED2	Widen	Pending	Old Mill Rd.	US 1	Pole Rd	4	4	2	4	No	2009	No
FHWA/VDOT	FED3	Construct	Pending	Old Mill Rd. extended	Pole Rd.	Telegraph	0	3	0	4	No	2009	No
Loudoun Secondary													
VDOT	VSL51	Construct	Pending	Atlantic Boulevard	VA 625 (Church Road)	VA 7	-	3	-	4	No	2008	No
VDOT	VSL39	Construct	N/A	Broadlands Boulevard (Ryan Bypass)	VA 659	VA 625	0	3	0	4	No	2005	No
VDOT	VSL1b	Widen/Upgrade	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	No	2010	No
VDOT		widen/ 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/Upgrade	Pending	VA 607 (Loudoun County Pkwy)	W&OD Trail	Redskin Park Drive	4	3	2	6	No	2010	No

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VDOT	VSL10bf	Widen/Upgrade	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/Upgrade	Pending	VA 607 (Loudoun County Pkwy)	Gloucester Parkway	VA 7	4	3	2	4	No	2005	No
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/Upgrade	Approved	VA 634 (Lockridge/Moran Road)	VA 606 (Old Ox Road)	Randolph Drive	4	3	2	4	No	2010	No
VDOT	VSL45	Widen/Upgrade	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/Upgrade	Pending	VA 659 (Belmont Ridge Rd.)	National Rec. & Park Ent.	Dulles Greenway	4	3	2	4	No	2010	No
VDOT	VSL4ab	Widen/Upgrade	Pending	VA 659 (Belmont Ridge Road)/VA 659 Relocated	Dulles Greenway	VA 7	4	3	2	4	No	2015	Yes
VDOT	VSL4d	Widen/Upgrade	Pending	VA 659 (Belmont RidgeRoad)	VA 659 Relocated	National Rec. & Park Ent.	4	3	2	4	No	2010	No
VDOT	VSL4e	Widen/Upgrade	N/A	VA 659 (Gum Spring Rd.)	VA 620 (Braddock Road)	US 50	4	3	2	4	No	2006	No
VDOT	VSL4f	Widen/Upgrade	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/Upgrade	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 Road)	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
VDOT	nrs	Construct	Pending	VA 868 (Davis Dr.)	VA 606 (Old Ox Road)	VA 625 (Church Road)	-	4	-	4	No	2007	Yes

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VDOT	VSL46	Construct	Pending	VA 1036 (Pacific Boulevard)	Sterling Blvd.	Gloucester Parkway	-	3	-	4	No	2010	Yes
VDOT	VSL47	Widen/Upgrade	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	No	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/Upgrade	Pending	VA 773 (Fort Evans Road)	Leesburg Town Limits	River Creek Parkway	4	3	2	4	No	2007	No
Prince William Secondary													
VDOT	VSP49b	Construct	Pending	Heathcote Boulevard	VA 676 (Catharpin Road)	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	No	2010	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	4	0	4	Yes	2006	Yes
VDOT	VSP46	Construct	Pending	VA 1566 (Sudley Manor Drive Extension)	VA 234 Bypass	Chatsworth Drive	0	4	0	4	Yes	2006	Yes
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 (NewTelegraph 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	Yes	2006	Yes

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VDOT	VSP23f	Construct	Pending	VA 3000 (Prince William Parkway)	I-95	US 1 at Longview Drive	0	2	0	4	complete	2005	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/Upgrade	Approved	VA 619 (Linton Hall Road)	US 29 (Lee Highway)	VA 675 (Glenkirk Road)	4	3	2	6	Yes	2007	Yes
VDOT	VSP2b	Widen/Upgrade	Approved	VA 619 (Linton Hall Road)	VA 675 (Glenkirk Road)	VA 621 (Devlin Road)	4	3	2	4	Yes	2007	Yes
VDOT	VSP2e	Widen/Upgrade	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/Upgrade	Approved	VA 619 (Linton Hall Road)	VA 1566 (Sudley Manor Dr.)	VA 28 (Nokesville Road)	4	3	2	4	No	2014	yes
VDOT	VSP2h	Widen	Pending	VA 619 (Joplin Rd.) add right turn lane	I-95 exit Ramp	US 1	4	4	4	5	Yes	2006	yes
VDOT	VSP3a	Widen/Upgrade	N/A	VA 621 (Balls Ford Road)	VA 234 (Sudley Road)	Bethlehem Road	4	3	2	4	No	2015	No
VDOT	VSP3b	Widen/Upgrade	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	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	No	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

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2006 CLRP AND FY2007-2012 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
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	Yes	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
FAMPO													
FAMPO	FAI1a	Construct	EA Compl.	I-95 diamond interchange	at VA 627		1	1	0	0	Yes	2005	
FAMPO		Reconst/ Constr.	EA Compl.	I-95 interchange	at VA 627						No	2030	
	FAI1E	construct		I-95 CD lanes	VA 630	VA 627	1	1	6	6+4	No	2025	
FAMPO		Recon-struct	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 Interchange	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 Frederickburg	I-95	2	2	4	6	No	2030	
FAMPO	FAP5d	Widen		US 1	I-95	Spotys. Pkwy (future) (.5 mi. s. of 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	

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(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
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	
STAFFORD COUNTY SECONDARY													
FAMPO	FAS7a	Widen	Compl.	VA 607	VA 626	VA 218	4	4	2	4	Yes	2010	
FAMPO	FAS3c	Widen		VA 610 (Garrisonville Rd.)	VA 610 (existing 4 lane sectio	VA 643	4	4	2	4	Yes	2020	
FAMPO	FAS3da	Widen		VA 610 (Garrisonville Rd.)	US 1	VA 684 (Mine Rd.)	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	Recon-struct		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	Recon-struct		VA 648 (Shelton Shop Rd.)	VA 610	VA 627	4	4	2	4	No	2015	
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	
CITY OF FREDERICKSBURG													
FAMPO	FAS16	Widen		VA 3 (William St.) (fredericksb	Mahone Dr.	US 1	3	3	4	6	No	2020	
FAMPO	nrs	Widen		Lafayette Blvd.	S. City Limits of Fredericksburg	Blue-Gray Parkway	3	3	3	4	No	2030	

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2006 CLRP AND FY2007-2012 TIP AIR QUALITY CONFORMITY INPUTS

(Highway and HOV)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Facility from	Facility to	Lanes from	Lanes to	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
FAMPO	FAS25	Widen		Princess Anne St.	US 1	Herndon St.	3	3	2	4	No	2010	
SPOTSYLVANIA COUNTY SECONDARY													
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 (Spotsylvania)	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	nrs	Widen		VA 620 (Harrison Rd)	US 1 Bypass	US 1 Business			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	
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	

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Appendix B: Transit Inputs for the 2006 CLRP and FY 2007-2012 TIP Air Quality Conformity Networks

Appendix-B

2006 CLRP AND FY2007-2012 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?
Washington Metropolitan Area Transit Authority									
WMATA				Fair Lakes Shuttle				2006	Yes
WMATA		Modify		Revised Metrorail Operating Plan				2010	
WMATA		Modify		Revised Metrorail Operating Plan				2011	
WMATA		Modify		Revised Metrorail Operating Plan				2015	
District of Columbia									
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		K St. Busway	Mt. Vernon Sq./7th St. NW	Wash.Circle / 23rd St. NW		2008	
Maryland									
MTA		Construct		Bi-County Transitway	Bethesda	Silver Spring		2015	Yes

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(Transit)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
MTA		Study		Bi-County 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	
Montgomery County									
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
Mont.Co.			Pending	Georgetown Branch Trolley/Trail	Silver Spring	Bethesda (along CSX Metro Branch ROW)	Yes	2012	No
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			2015	Yes
Mont.Co.	MCT7	Construct	N/A	Olney Transit Center	adjacent to or north of MD 108		No	2015	No
Mont.Co.				Randolph Road Bus Enhancement				2010	No
Mont.Co.		Construct		University Blvd Bus Enhancement	Kensington	Silver Spring	No	2020	No

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(Transit)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
Mont.Co.	MCT22	Construct		Veirs Mill Road Bus Enhancement	Rockville	Wheaton	No	2020	No
Prince Georges County									
PG Co.		Construct	N/A	Accokeek Fringe Parking Lot			Complete	2003	Yes
Virginia									
VDOT		Widen	Pending	US 1 (bus/right-turn lanes)	VA 235 North	SCL Alexandria (I-95 Capital Beltway)	No	2025	No
VDOT		Implement	N/A	VA 244 (Columbia Pike) Signal Prioritization	Fairfax County Line	Pentagon	Complete	2004	Yes
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.	26th St.	No	2007	Yes
Arlington Co.		Construct	Pending	Crystal City / Potomac Yard Busway (2-lane) Segment 2	26th St.	Crystal City Metro Station	No	2008	Yes
Arlington Co.		Upgrade	Pending	Crystal City / Potomac Yard Busway to BRT	Vicinity of Glebe Rd. Ext.	Crystal City Metro Station	No	2012	Yes
VDOT		Study	Pending	Potomac Yard Transit	Monroe Ave. Bridge	Crystal City	Complete	not coded	No
VDOT		Study	Pending	US 1 Corridor Light Rail	King Street Metro Station	Potomac Yard	No	not coded	No
VDOT		Study	Pending	US 1 Corridor Light Rail	Potomac Yard	Pentagon	Complete	not coded	No
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		Implement	Pending	US 1 Transit Improvements	Gunston Road	Huntington Avenue	No	2005	Yes
VDOT		Study		US 1 Transit Service Improvements	Stafford County Line	Pentagon		not coded	No

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(Transit)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
VDOT		Study	Pending	I-495 Transit Improvements	Woodrow Wilson Bridge	American Legion Bridge	No	not coded	No
VDOT		Study	PCE-1	I-66 & I-95 corridors	Location /FeasIbility Studies for Addl. PnR Lots		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	2015	No
VDOT		Study	Pending	Proposed EPG People Mover	Fort Belvoir	Franconia/Springfield	No	not coded	No
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		Construct	Pending	VA 244 (Columbia Pike) Transit Service Improvements	Baileys Crossroads	Pentagon	No	2012	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			N/A	Dulles Corridor Slip Ramps	Dulles Corridor Park & Ride Lots	Dulles Toll Road	Complete	2003	No
VDOT		Construct	Pending	Transit Center (Reston)	Reston Town Center	@Explorer Dr. & Bluemont Way	No	2004	Yes

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(Transit)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
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	2004	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	Yes	2005	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	Yes	2003	Yes
VDOT		Construct	Pending	Park-and-Ride Lot	VA 7900 (F-S Pkwy.) PnR	@ Backlick Road North	No	2006	Yes
VDOT		Reconstru	N/A	Park-and-Ride Lot Enhancements	@ Reston, Centreville, West Springfield		No	2004	Yes
VDOT		Construct	Pending	Park-and-Ride Lot	Springfield CBD	vic. I-95 & Old Keene Mill Road	No	2005	Yes
VDOT		Relocate/C	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.	No	2007	Yes
VDOT		Construct		Town of Leesburg -Harrison St & Catoctin 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	Yes	2006	
VDOT		Construct		Park-and-Ride Lot	US 50 at Stone Ridge	250 spaces	Proffered	2006	
PRTC		Bus service		Omni Service Improvements				2005	

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(Transit)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
VDRPT		Incorporate	Pending	DCRTP - BRT Elements into the Express Bus Service in	East Falls Church Metrorail Station	Route 772	Complete	2002	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	2006	Yes
VRE		Implement	Pending	Service Improvements (Reduce Headways)	Fredericksburg and Manassas lines		No	2010	No
		Implement		Beltway HOT lanes transit service			No	2010	
		Implement		Beltway HOT lanes transit service			No	2020	

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