National Capital Region Transportation Planning Board
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MEMORANDUM

March 8, 2007

To: Joan Rohlfs

From: Mike Clifford

Subject: Mobile source emissions inventories for the 8-hour ozone standard state implementation plan

Introduction

This memo transmits the final mobile source emissions inventories developed for the 8-hour ozone standard state implementation plan (SIP) for the Washington non-attainment region, and documents the technical methods applied in that process.

Each inventory is comprised of two major categories: network and off-network. These main categories are broken down by trip component. The fundamental emissions calculation in each category represents emissions as the product of a travel element and an emissions rate associated with that travel. Exhibit 1 illustrates the basic approach. For example, VMT (in miles per day) multiplied by a VOC or NOx emissions rate (in grams per mile) yields emissions (in grams, which is aggregated to tons per day). Each of the travel categories as well as subcategories is described in more detail in the following chapters. In addition emissions associated with diurnals and resting loss, transit and school bus, and auto access to transit are described in separate technical memos and are attached as Appendices E-G. Exhibit 2 is a map of the 8-hour ozone non-attainment area.

Network Components

Network Development

Since 2008 and 2009 were not included as milestone years for the air quality analysis of the 2005 CLRP and the FY2006-2011 TIP, staff sent out a separate request for projects associated with these years. All project submissions were reviewed and organized by DTP staff into transportation networks for appropriate forecast years. A list of projects along with a memo from Jane Posey provides details associated with this task (see Attachment A).

Travel Demand

The travel demand component for this work was based upon the execution of the COG/TPB's Version 2.1D#50 travel forecasting process, see COG/TPB Travel Forecasting Model, Version 2.1D#50 User's Guide (Report), November 17, 2004. Inputs to the process include Round 7.0 Cooperative Forecast land activity assumptions, and plan and program network inputs adopted by the TPB in October 19, 2005 and as modified according to the updates documented in Attachment A. Exhibits 3-A and 3-B summarize the jurisdictional household and employment data input to the modeling process; Exhibits 3-C and 3-D summarize the resulting vehicle trips and VMT outputs.

Emissions Factors

COG/DEP staff developed all emission factors associated with this project and forwarded them to DTP staff for quality assurance and for the final calculation of emissions. Factors were developed using EPA's Mobile6 emissions factor model (User's Guide to Mobile6.2, EPA September 2003). Exhibits 4 and 5 for VOC and NOx respectively, illustrate the emission factors developed and applied in this process. Inputs were examined in detail and updated as appropriate to reflect new data or procedures. For example, state specific values associated with REBUILD EFFECTS, a measure that affects NOx emissions, were introduced for the first time with this current analysis. As with previous analysis, VMT mix percentages consistent with the vehicle types in the Washington region were developed using guidance prepared by E.H.Pechan staff. Details of this and other region-specific inputs are detailed in a memo: "1990 and 2005 MOBILE Input Documentation", January 27, 2003. This document is contained in the Appendix D of the Air Quality Conformity Determination of the 2005 Constrained Long Range Plan and the FY 2006-2011 Transportation Improvement Program for the Washington Metropolitan Region, October 19, 2005.

While the majority of updates to inputs involved in emission factor development were associated with EPA's Mobile6 emissions factor model, one aspect of the updated emissions factor development process deserves special mention - the allocation of vehicle registration data by vehicle type. The allocation of vehicle type plays a vital role in developing jurisdiction-specific VMT mix percent, i.e., the amount of travel occurring in the Washington area by type of vehicle. In the past, VMT mix percents were prepared by regional DMV and MVA staff by taking raw vehicle registration data files and aggregating to eight vehicle types based on Mobile model defaults to arrive at eight vehicle types. Currently, DTP staff is using software to identify each vehicle type and allocate these types into the 28 types now required by the Mobile model. A full report detailing the steps used in the application of the Vehicle Identification Number (VIN) decoder for the production of VMT mix percents is attached as Attachment B.

The methodology for developing jurisdiction-specific VMT mix and the application of the resulting VMT mix is described in detail in the 1/27/2003 E. H. Pechan memo. It is a significant improvement over past methods in that it incorporates the best of both local and national data and trends, reflecting: (1) the use of local vehicle registration data to develop VMT characteristics for the full 28 vehicle types required by the Mobile6 model, and (2) the changes

in VMT mix occurring through time and reflected within the Mobile6 model, and (3) adjustments to reflect the overall split between light duty and heavy duty vehicles specific to the Washington region. The new process is therefore a more accurate one in estimating VMT mix for both base year and forecast year conditions and should therefore lead to better estimates for the resulting emissions factors in each case as well. Final inputs and parameters specifications are contained in Attachment C.

Network Emissions via Post-Processor

Network emissions are calculated based on modeled trips and VMT, combined with emissions factors, using COG/TPB's emissions post-processor. Attachment D is a memo entitled "Mobile Emissions Post-Processor Description and Results" written by Ronald Milone of COG/DTP staff that describes in detail the activities of the post-processor. Generally, the post-processor is comprised of a series of programs that calculate emissions by each component of a trip cycle: start, running and destination. This work was performed for each of the required analysis years. One of the recent updates mentioned in Ron Milone's memo is the automated process for computing local/off-network emissions. Although VMT associated with local roads is not part of our network system, the post-processor was updated to incorporate these calculations, as previously these emissions were part of the off-network group.

Off-Network Components

These separate calculations represent additional mobile source emissions which are computed offline, via spreadsheet methods. Separate emissions estimates are prepared for the following categories: diurnal and resting loss, school and transit buses, and auto access to transit. Each is described in more detail in the attached technical memos.

Results

Exhibit 6 reflects the aggregate results following execution of the programs. The exhibit shows network emissions by trip cycle component, and off-network emissions by category, for each analysis years (2002, 2008, and 2009) and scenario (uncontrolled, controlled). Exhibits 7 and 8 present the same data by District of Columbia, Maryland, and Virginia totals, for VOC and NOx respectively.

Following:

Exhibits 1 - 8

Attachments:

A. Jane Posey memo on projects solicitation for 2008 and 2009 conditions 1/25/2007
B. Daivamani Sivasailam memo on VIN decoder 05/10/2006
C. Sunil Kumar memo on Emissions Factor Inputs and Development

D. R. Milone (COG/TPB) memo on Emissions Post-Processor, 09/19/2006
E. Eulalie Lucas memo on Diurnal and Resting Loss Emissions
F. Jane Posey memo on Transit and School Bus Emissions
G. Jane Posey memo on Auto Access to Transit Emissions

EXHIBIT 1

Analysis Structure for On-Road Mobile Source Emissions

	Transportation Component	X	Emission Factor	=	Emissions
A. Network	1. Trip origins		Cold start rate (g/trip)		Startup
	2. VMT		Stabilized rate (g/mile)		Running
	3. Trip destinations		Hot soak (g/trip)		Hot soak
	4. Local Road VMT		Stabilized Rate (g/mile)		Running
B. Off-Network	5. Number of vehicles (gasoline fueled)		Diurnal rate (g/day)		Diurnal evaporative
	6. Number of vehicles (gasoline fueled)		Resting loss (g/day)		Resting loss
	7. Auto access to transit		Travel components (above)		Startup, running, hot soak
	8. School & transit bus VMT		(HDDV) Stabilized rate (g/mile)		Running

EXHIBIT 2
Washington, D.C. - Maryland - Virginia
8-Hour Ozone Non-Attainment Area

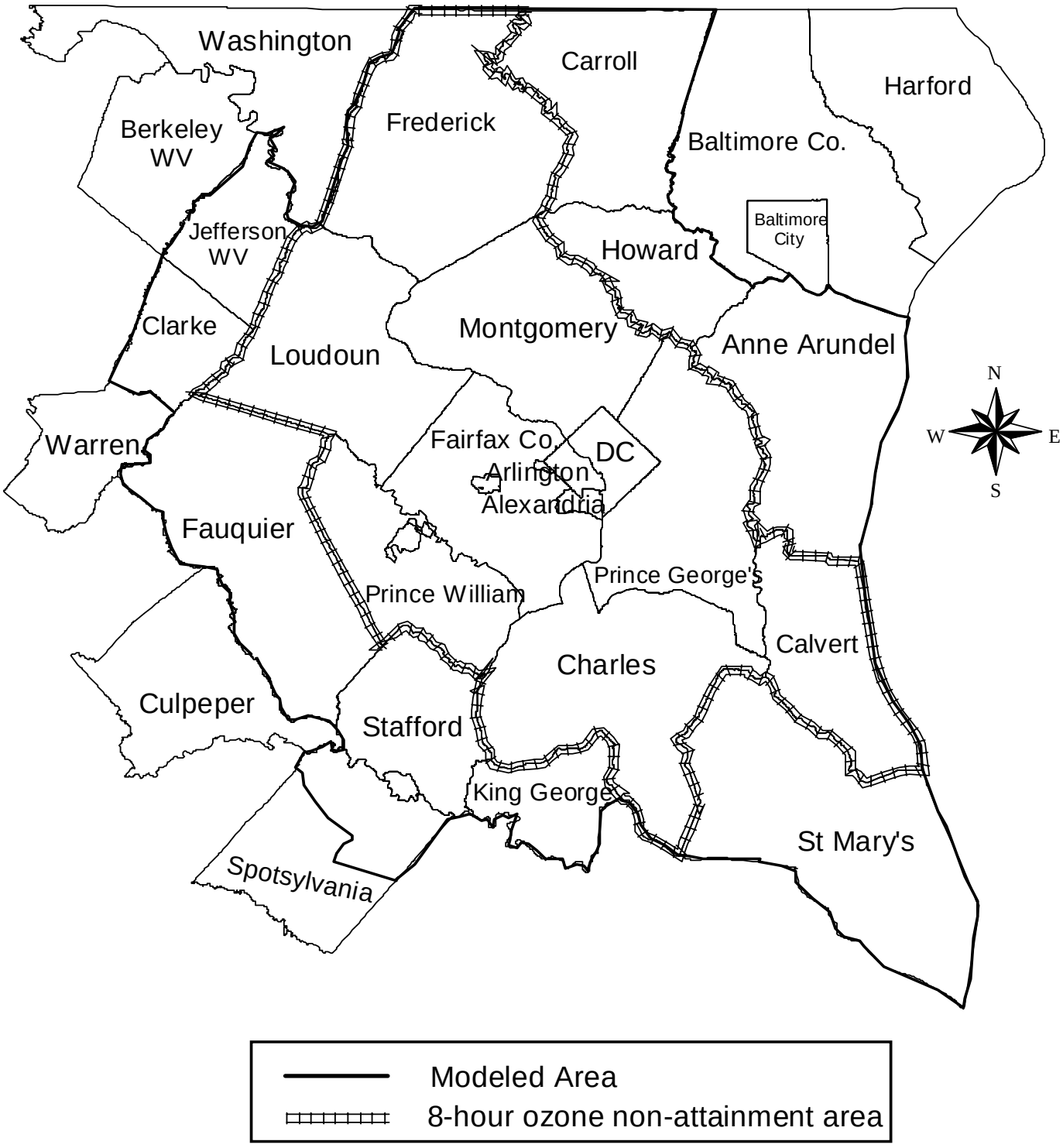

Exhibit 3-A
8-Hour Ozone Standard SIP
Household Data

Jurisdiction	2002	2008	2009
D.C.	249,809	259,981	262,648
MONTGOMERY	330,970	358,215	362,813
PR.GEORGES	299,108	319,018	321,683
ARLINGTON	89,000	96,604	98,090
ALEXANDRIA	63,662	69,104	70,037
FAIRFAX	374,148	411,888	418,950
LOUDOUN	70,953	102,614	107,637
PR. WILLIAM	119,778	149,575	154,461
FREDERICK	73,833	84,423	86,066
CHARLES	44,286	50,621	51,427
CALVERT	26,570	29,926	30,487
TOTAL	1,742,117	1,931,969	1,964,299

SOURCE:
MWCOG Round 7.0 Cooperative Forecasts

Exhibit 3-B
8-Hour Ozone Standard SIP
Employment Data

Jurisdiction	2002	2008	2009
D.C.	744,155	768,172	775,885
MONTGOMERY	481,693	524,139	533,131
PR.GEORGES	349,356	380,347	386,614
ARLINGTON	187,633	208,784	213,311
ALEXANDRIA	95,800	110,190	111,722
FAIRFAX	624,843	691,903	709,453
LOUDOUN	103,376	141,313	147,520
PR. WILLIAM	127,076	149,781	153,748
FREDERICK	106,647	134,314	138,361
CHARLES	47,700	60,313	61,602
CALVERT	25,456	31,497	32,199
TOTAL	2,893,735	3,200,753	3,263,546

SOURCE:
MWCOG Round 7.0 Cooperative Forecasts

Exhibit 3-C
8-Hour Ozone Standard SIP
Vehicle Trips by Jurisdiction

Jurisdiction	2002	2008	2009
D.C.	1,524,387	1,544,778	1,554,043
MONTGOMERY	2,931,156	3,172,264	3,208,798
PR.GEORGES	2,247,475	2,391,291	2,411,947
ARLINGTON	744,971	806,283	816,614
ALEXANDRIA	462,169	503,888	509,174
FAIRFAX	3,434,342	3,768,468	3,831,421
LOUDOUN	633,387	897,975	938,601
PR. WILLIAM	829,817	1,022,878	1,056,468
FREDERICK	617,020	724,079	739,018
CHARLES	362,839	417,946	424,775
CALVERT	193,779	225,991	230,993
TOTAL	13,981,342	15,475,841	15,721,852

Vehicle Trips from the 2005 CLRP and the FY2006-2011 TIP
Travel Demand Model: COG\TPB Version 2.1D #50
Land Activity Forecast : Round 7.0 Cooperative forecast

Attachment 3-D
8-Hour Ozone Standard SIP
VMT by Jurisdiction

JUR:	2002	2008	2009
DC	10,930,918	11,290,310	11,346,617
Mtg	22,726,837	23,819,759	24,016,722
PG	24,258,081	25,348,041	25,761,757
Cal	1,556,439	1,791,372	1,806,436
Chs	2,766,823	3,154,576	3,206,941
Frd	9,264,153	10,616,107	10,881,277
Arl	4,978,853	5,074,936	5,094,851
Alx	2,812,033	2,937,854	3,045,680
Ffx	30,224,976	31,984,450	32,467,303
Ldn	6,080,175	7,855,974	8,094,039
PW	9,146,026	10,637,527	10,876,847
Total	**124,745,314**	**134,510,906**	**136,598,470**

Vehicle Miles of Travel(VMT) from the 2005 CLRP and the FY2006-2011 TIP
Travel Demand Model: COG\TPB Version 2.1D #50
Land Activity Forecast : Round 7.0 Cooperative forecast

EXHIBIT 4
2002-2009 VOC COMPOSITE MOBILE6.2 RUNNING EMISSION RATES
FOR DISTRICT OF COLUMBIA
FREEWAY

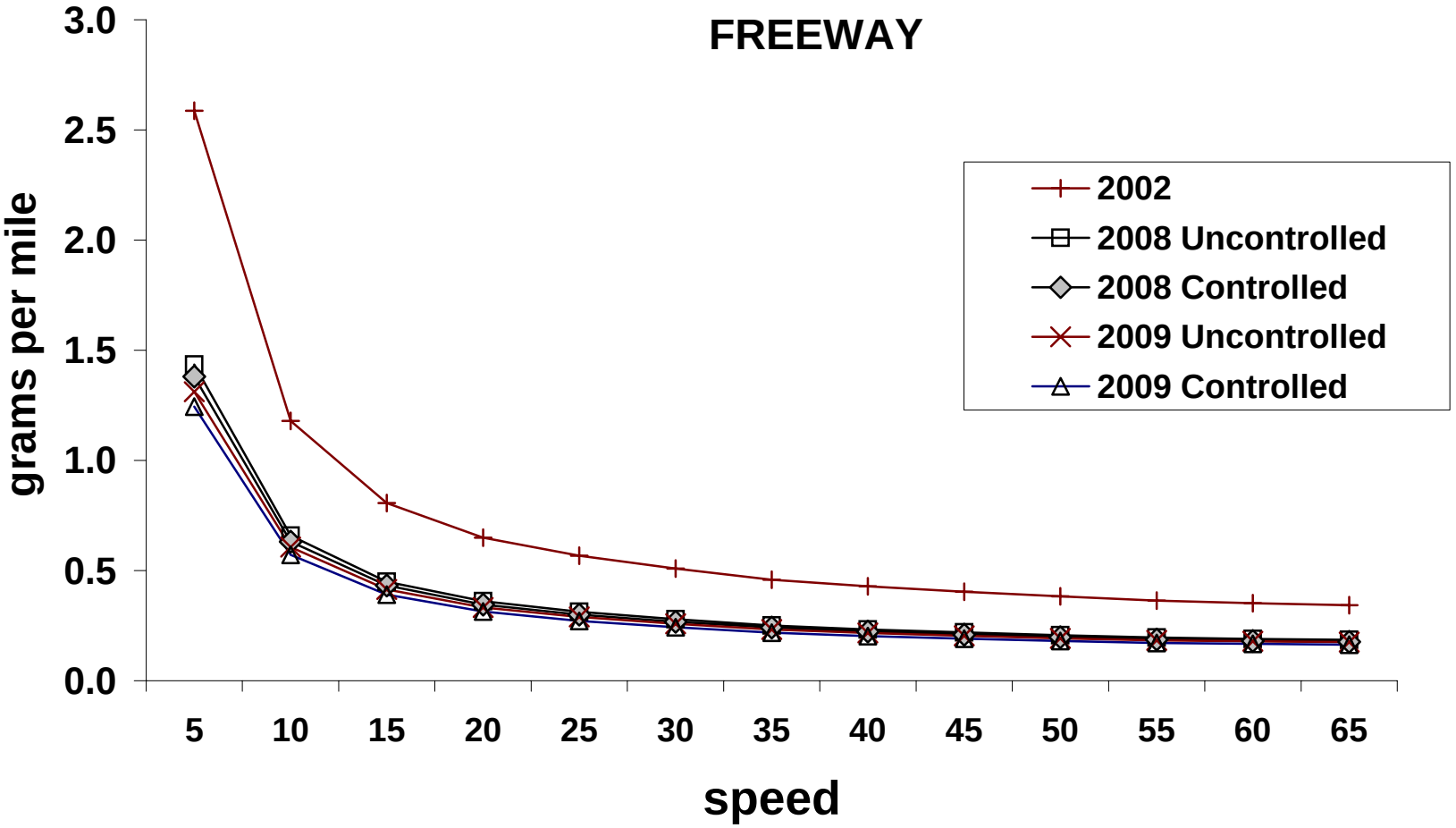

EXHIBIT 5
2002-2009 NOx COMPOSITE MOBILE6.2 RUNNING EMISSION RATES FOR DISTRICT OF COLUMBIA
FREEWAY

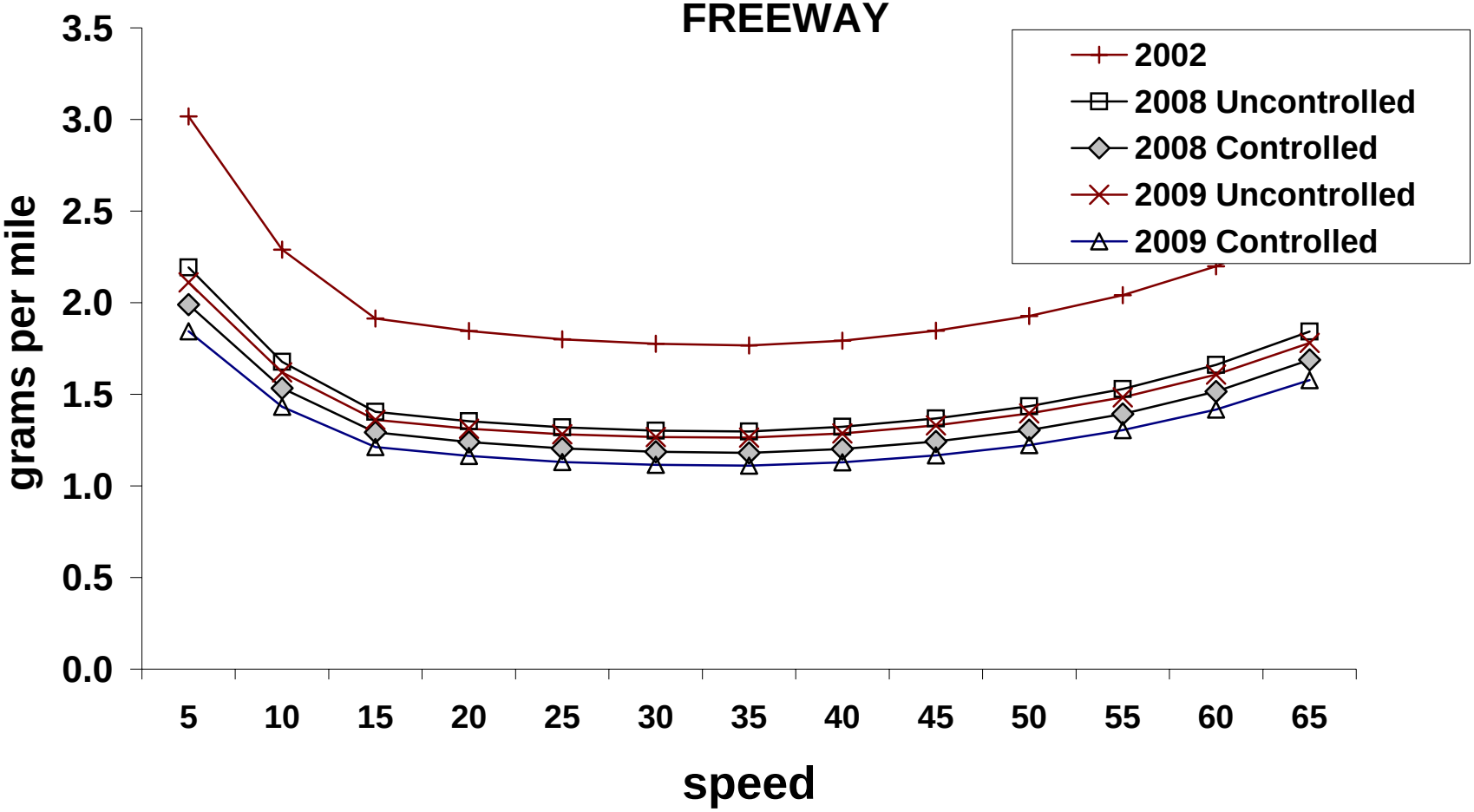

Exhibit 6

8-Hour Ozone Standard SIP

Mobile Source Emissions Inventories

(Tons/Day)

	Base 2002		2008 Uncontrolled		2008 Controlled		2009 Uncontrolled		2009 Controlled	
	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx
I Network										
Start	24.77	12.58	15.27	9.16	12.83	7.23	14.79	9.08	11.88	6.64
Running	55.26	229.04	33.36	161.12	30.71	135.55	31.59	155.50	28.62	123.21
Soak	11.26	---------	10.31	----------	10.06	----------	9.99	---------	9.71	----------
II Off-Network										
Diurnal	2.36	----------	2.04	----------	1.90	----------	2.01	----------	1.84	----------
Resting Loss	11.93	----------	9.26	----------	9.03	----------	8.91	----------	8.59	----------
Local Roads	9.33	11.16	5.49	8.61	5.11	6.99	5.16	8.47	4.75	6.38
School Buses	0.42	5.97	0.40	5.34	0.40	5.23	0.39	5.14	0.38	4.97
Transit Buses	0.38	6.43	0.22	4.64	0.22	4.42	0.23	4.89	0.23	4.52
Auto Access	1.24	1.47	0.80	1.10	0.72	0.88	0.77	1.08	0.68	0.80
Total	116.94	266.65	77.17	189.97	70.98	160.30	73.85	184.16	66.68	146.53

2008 Uncontrolled: 2002 IM, 2002 NOx Rebuild values, No Tier 2, No HDDV Rule, 2008 RDT/DSF/VMT Mix/Total VMT

2009 Uncontrolled: 2002 IM, 2002 NOx Rebuild values, No Tier 2, No HDDV Rule, 2009 RDT/DSF/VMT Mix/Total VMT

Exhibit 7
8-Hour Ozone Standard SIP
VOC Mobile Emissions Inventories
Rate of Progress and Attainment
(Tons/Day)

Jurisdiction		Uncontrolled	Controlled	Uncontrolled	Controlled
	2002 Base	2008	2008	2009	2009
District of Columbia	13.09	7.99	7.47	7.52	6.88
Maryland	56.13	36.56	33.86	34.97	31.64
Virginia	47.71	32.62	29.65	31.36	28.15
Total	116.94	77.17	70.98	73.85	66.68

Exhibit 8
8-Hour Ozone Standard SIP
NOx Mobile Emissions Inventories
Rate of Progress and Attainment
(Tons/Day)

Jurisdiction	2002 Base	Uncontrolled 2008	Controlled 2008	Uncontrolled 2009	Controlled 2009
District of Columbia	23.70	17.36	15.25	16.89	14.16
Maryland	132.27	92.51	77.85	89.74	70.94
Virginia	110.68	80.10	67.20	77.53	61.44
Total	266.65	189.97	160.30	184.16	146.53

ATTACHMENT A

ATTACHMENT A

National Capital Region Transportation Planning Board

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

MEMORANDUM

January 25, 2007

TO: Files

FROM: Jane A. Posey
Senior Transportation Engineer

SUBJECT: 2008 and 2009 Network Development for 8-Hour Ozone SIP

Because the schedule for the development of the 8-Hour Ozone SIP networks did not correspond with the development of conformity networks, staff requested that the TPB Technical Committee review the conformity project input table to assure accuracy of project completion dates. The letter requesting this review, with the conformity project input table attached, went to the Technical Committee at the November 4, 2005 meeting. Staff requested that the implementing agencies review project inputs to assure that the project completion dates were accurate in light of funding availability at that time. Staff received a few updates which were included in the 2008 and 2009 networks developed for the SIP. The letter requesting review is included as Attachment A. The updated project input table is included as Attachment B.

C:\USER\07CONF\SIP network development.doc

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Loudoun County
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Manassas Park
Prince William County

November 4, 2005

MEMORANDUM

TO: TPB Technical Committee

FROM: Jane A. Posey JP
Transportation Engineer

SUBJECT: Review of project inputs for 2009 SIP network

In order to aid in the preparation of the 8-hour ozone SIP, it is necessary to perform travel demand and emissions estimates for the forecast year 2009. Because the development of a 2009 network was not included in the recently completed air quality conformity analysis, staff decided that it would be prudent to review inputs to assure the accuracy of project completion dates. Toward that end, please review the attached draft conformity input tables (highway and transit) to assure that the project completion dates are accurate in light of funding availability, as shown in the FY2006-2011 Transportation Improvement Program, and other criteria.

Please identify any necessary updates to the tables that would affect a 2009 network, and COG staff will make the appropriate changes. Please submit your updates to me by the end of November.

If you have any questions, please feel free to contact me at (202) 962-3331 or jposey@mwcog.org. Thank you for your assistance.

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Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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													
DCDOT				Southeast/Southwest Frwy Reversible Lanes	14th Street Bridges	Pennsylvania Ave. SE							Yes
DCDOT		Construct		Foxhall Road, N.W.	W Place	Calvert Street						2003	Yes
DCDOT		Construct		Klingle Road Reconstruction	Porter Street	Woodley Road						2007	Yes
DCDOT		Construct		Minnesota Ave. NE ext.	Sheriff Rd	Meade St. N.E.						2009	Yes
Maryland													
MDOT Freeway													
MDSHA	MI2r	Reconstruc	Approved	I-270	Interchange at MD 117 including park and ride lot		1	1	8	8	Completed	2004	Yes
MDSHA	MI2n	Recon/Con	Approved	I-270 (East Spur)	Rockledge Dr. Connector and MD 187		1	1	6	6	Completed	2004	Yes
MDSHA	MI2l	Recon/Con	Approved	I-270 (West Spur)	Interchanges at Democracy Blvd and Westlake Terrace		1	1	6	6	Completed	2004	Yes
MDSHA	MI4c	Construct	Approved	I-70 (Phase IIA)	MD 85 Extended/MD 355		2	2	0	4	Completed	2005	Yes
MDSHA	VA	Widen	Approved	I-95/I-495 Woodrow Wilson Bridge	MD 210 Interchange	Virginia Line	1	1	6	12	Yes	2008	Yes
MDOT Primary													
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		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	FP1B	Construct	N/A	MD 80/MD 355 Relocated	South of Urbana	North of Urbana	0	2	0	4	Yes	2005	No
MDOT Secondary													
MDSHA	MS33	Widen	N/A	MD 27	MD 355	A 305	2	2	4	6	Yes	2006	

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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	MS3d	Widen	Approved	MD 28 (Darnestown Road)	Riffle Ford Road	Great Seneca Highway (MD 119)	3	3	2	4/6	Yes	2004	Yes
MDSHA	PGS6	Construct	Approved	MD 212 Relocated (Ammendale/Virginia Manor	US 1	I-95	3	2	2	4	Yes	2005	Yes
MDSHA	MS30	Widen/Con	Approved	MD 414 Extended	MD 210	I-295	0	2	0	4	Yes	2008	Yes
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
Montgomery County													
Mont.Co.	nrs	Construct		Burtonsville Access Rd.	MD 198	School Success Rd.	0	4	0	2		2008	Yes
Mont.Co.	MC38a	Construct		Citadel Avenue Extended	dead end of existing road south of Marinelli Road	Nicholson Lane	0	4	0	2	No	2006	Yes
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.	MC15	Construct	N/A	Montrose Parkway West	Montrose Road (Tower Oaks Blvd.)	old' Old Georgetown Road	0	2	0	4	No	2009	No
Mont.Co.	MC30	Construct		Nebel St Extended	Randolph Rd	Bou Ave/Chapman Ave	0	3	0	4		2007	Yes
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.	MC13	Construct		Woodfield Rd.(MD 124 Ext.)	1200' North of MD 108	MD 27	0	2	0	2		2007	Yes
Prince Georges County													
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.	PGS74a	Widen	N/A	Bell Station Road	Glenn Dale Road (MD 193)	Annapolis Road (MD 450)	4	4	2	4	Complete	2002	Yes
PG Co.	PGS74b	Construct	N/A	Bell Station Road	Annapolis Road (MD 450)	Church Road	0	4	0	4	Yes	2006	No
PG Co.	PGS11	Widen	N/A	Brightseat Road	Sheriff road	MD 214	4	4	2	4	Yes	2004	Yes

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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.	PGS16a	Construct	N/A	Campus Way North	Lake Arbor Way	south of Lottsford Road	0	4	0	4	No	2004	No
PG Co.	PGS18	Widen	N/A	Church Road	Oak Grove Road	Annapolis Road (MD 450)	4	4	2	4	No	2005	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.	PGS45	Widen	N/A	Mitchellville Road	Mount Oak Road	Collington Road (MD 197)	4	4	2	6	Yes	2000	No
PG Co.		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.		Construct		Regency Parkway/ Regency Lane	Regency Lane	Hil-Mar Drive	0	4	0	4		2007	Yes
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.	PGS62a	Widen	N/A	Suitland Road	Allentown Road (MD 337)	Suitland Parkway	3	3	2	4	No	2009	Yes
PG Co.	PGS64	Widen	N/A	Surratts Road	Beverly Avenue	Brandywine Road	4	4	2	4	No	2005	Yes
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.	PGS42	Widen	N/A	Woodyard Road (MD 223)	Rosaryville Road	Dower House Road	2	2	2	4	No	2007	No
Frederick County													
Fred.Co.	FS2	Construct	N/A	Monocacy Blvd	Hughes Ford Rd.	Gas House Pike	0	3	0	4	Yes	2009	No
Anne Arundel County													
BMC	nrs	Reconstruc	N/A	Jennifer Rd (ramps)	@ US 50/MD (2 Interchange)				-	5		2004	
BMC	nrs	Widen	N/A	MD 174	MD 174 (Bridge at I-97)			3	2	6		2004	

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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?
BMC	AA3c	Widen	N/A	MD 2	Virginia Avenue	MD 214		2	2/4	4/6		2003	
BMC	nrs	Construct	N/A	MD 32 (2 new interchange)	@Airfield Rd and MD 198			1	-	-		2003	
BMC	nrs	Construct	N/A	MD 32 (new interchange)	@ Canine Rd			1	-	-		2003	
BMC	nrs	Construct	N/A	MD 32 (new interchange)	@ Samford Rd			1	-	-		2003	
BMC	nrs	Construct	N/A	Medical Blvd	Jennifer Road	Bestgate Rd			0	4		2005	
BMC	nrs	Construct	N/A	National Business Park-Brock Bridge Road	Guilford Road Extended	Brock Bridge Road			0	2		2005	
BMC	nrs	Reconstruc	N/A	US 50/301 (ramp)	Northbound MD 2	Westbound US 50		1	-	-		2005	
Carroll County													
BMC	CA3A	Construct	N/A	Hampstead Bypass (MD 30)	Wolf Hill Dr	Brodbeck Rd		2	0	2		2007	
BMC	nrs	Reconstruc	N/A	MD 140 (reconstruct bridge)	MD 97 (north)	MD 27		1				2006	
BMC	nrs	Construct	N/A	Shepherd's Mill Road	MD 32	Arnold/Old Westminster Pike			0	2		2002	
Howard County													
BMC	nrs	Widen	N/A	Dorsey Run Rd	Guilford Road	Henkels Ln and ramps at MD 32 and Dorsey Run Rd		4	3	6		2004	
BMC	nrs	Construct	N/A	Dorsey Run Rd	Extension	Guilford Road		4	0	4		2005	
BMC	HW21	Widen	N/A	Guilford Road	Dorsey Run Road	US 1			2	4		2005	
BMC	nrs	Widen	N/A	Guilford Road	National Business Parkway	Dorsey Run Road			2	5		2004	
BMC	HW17a	Widen	N/A	Johns Hopkins Road	US 29	Sanner Road		4	2	4		2005	
BMC	nrs	Construct	N/A	Loop Road	MD 216/Leishear Rd	All Saints Road			0	4		2005	
BMC	nrs	Construct	N/A	Loop Road (new interchange)	@ MD 216 West							2006	

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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?
BMC	nrs	Construct	N/A	Loop Road (new interchange)	@ MD 216 East							2006	
BMC	??	Reconstruc	N/A	MD 100	US 29	Long Gate Parkway		1	-	4		2002	
BMC	??	Widen	N/A	MD 100	Long Gate Parkway	MD 104		1	4	6		2002	
BMC	??	Reconstruc	N/A	MD 100	MD 104	I-95		1	-	6		2002	
BMC	??	Reconstruc	N/A	MD 100 (new interchange)	@ Snowden River Pkwy			1				2002	
BMC	??	Reconstruc	N/A	MD 100 (new interchange)	@ MD 104			1				2002	
BMC	??	Reconstruc	N/A	MD 100 (new interchange)	@ Centre Park Drive and Executive Park Drive			1				2002	
BMC	??	Reconstruc	N/A	MD 100 (new interchange)	@ MD 103			1				2002	
BMC	HW7b	Widen	N/A	MD 175	Snowden River Parkway	Dobbin Road		3	4	6		2005	
BMC	??	Reconstruc	N/A	MD 175 (new interchange)	@ Snowden River Parkway			3				2002	
BMC	HW8c	Relocate	N/A	MD 216	West of I-95	West of US 29		3	4	6		2005	
BMC	HW14a	Reconstruc	N/A	Snowden River Parkway	Tamar Drive	MD 100		3	-	4		2002	
BMC	??	Widen	N/A	US 1	Deep Run	Business Parkway		2	4	5		2002	
BMC	nrs	Widen	N/A	US 1	Crestmount Road	South of Cherry Tree Business Park		2	4	5		2002	
BMC	HW10c	Reconstruc	N/A	US 29 (new interchange)	@ Hopkins/Gorman Road			5				2003	
BMC	??	Widen	N/A	MD 100	Long Gate Parkway	US 29		1	4	6		2005	
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	
Virginia													

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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 Freeway													
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	VI2p	Widen	CE-1	I-95 (provide 4th lane)	Newington	VA 123	1	1	6	8	No	2009	Yes
VDOT	VI2k	Widen	SEIS-2	I-95 (Wilson Bridge and approaches)	US 1	MD 210	1	1	6	12	yes	2009	Yes
VDOT	VI2c	Reconstruc	approved	I-95/395/495 Interchange			1	1	-	-	Yes	2007	Yes
VDOT	VP15g	Widen	N/A	VA 267 (Dulles Toll Road) Ramps	@ I-495 Interchange		1	1	-	-	yes	2005	No
VDOT			N/A	Dulles Corridor Slip Ramps	Dulles Corridor Park & Ride Lots	Dulles Toll Road					complete	2002	No
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	nrs	Reconstruc	Pending	US 1	@ VA 619 (Joplin Road)	USMC HERITAGE CENTER ACCESS	-	-	-	-	No	2008	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	VP2ma	Widen	Pending	VA 7	Rolling Holly Drive	Reston Parkway	2	2	4	6	No	2009	Yes
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

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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	nrs	Reconstruc	Pending	VA 9	@ VA 662 (Clarks Gap Road)		3	3	-	-	No	2006	Yes
VDOT	VP4fa	Widen	N/A	US 15 (James Madison Highway)	I-66	VA 234	2	2	2	4	No	2008	Yes
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	Recons/Wi	Pending	VA 28	Bridge over Broad Run	Replace / Widen to ultimate width	3	3	2	6	No	2007	Yes
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	Yes	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	2005	No
VDOT	VP6y	Construct	N/A	VA 28 PPTA (Phase I) Interchange	@ Westfields Boulevard		-	-	-	-	No	2005	No
VDOT	VP6z	Construct	N/A	VA 28 PPTA (Phase I) Interchange	@ VA 606 (Old Ox Rd.)		-	-	-	-	complete	2004	No
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	nrs	Reconstruc	Pending	US 50 Interchange	@Jaguar Trail		2	2	-	-	No	2007	Yes
VDOT	VP8o	Reconstruc	Pending	US 50 Interchange	@ Courthouse Road / 10th Street		-	-	-	-	No	2008	Yes
VDOT	nrs	Reconstruc	Approved	VA 120 (Glebe Road)	@ VA 244 (Columbia Pike)		-	-	-	-	No	2004	Yes

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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	nrs	Reconstruc	Approved	VA 120 (Glebe Road)	@ Arlington Ridge Rd.	left turn lanes	-	-	-	-	No	2005	Yes
VDOT	nrs	Reconstruc	N/A	VA 120 (Glebe Road)	Quebec St.	2nd St.	2	2	-	-	No	2006	Yes
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	VP10eb	Widen	Approved	VA 123 (Ox Road)	Hooes Rd.	Lee Chapel Rd.	2	2	2	4	complete	2004	No
VDOT	VP10q	Widen	Approved	VA 123 (Ox Road)	Lee Chapel Rd.	Burke Lake Rd.	2	2	2	4	complete	2004	No
VDOT	VP10ea	Widen	Pending	VA 123 (Ox Road)	VA 722 North	Hooes Rd.	2	2	2	6	Yes	2006	Yes
VDOT	nrs	Reconstruc	Pending	VA 123	@ VA 620 (Braddock Road)		2	2	-	-	No	2005	Yes
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	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	VP12ea	Widen	Approved	VA 234 (Dumfries Road)	Snowfall Dr.	Purcell Rd.	2	2	2	4	complete	2003	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 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
VDOT	VU28e	Construct	Developer	Battlefield Parkway	Route 7	Fort Evans Road	0	2	0	4	No	2005	No

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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	VU28g	Construct	N/A	Battlefield Parkway	Edwards Ferry Road	Cattail Branch	0	2	0	4	complete	2003	No
VDOT	VU13a	Widen	Approved	Catoctin Circle	South Street	King Street	4	4	2	4	complete	2002	No
VDOT	VU56	Construct	N/A	Digital Drive/West Carondelet Drive	Manassas Drive	Blackhawk Court	-	3	-	2	complete	2003	Yes
VDOT	nrs	Reconstruct		Duke St.	Fairfax County Line	Washington St.	2	2	4/6	4/6		2005	No
VDOT	VSP26	Widen	Approved	Fairview Ave.	Nagle Street	Liberia Avenue	3	3	2	4	complete	2003	No
VDOT	nrs	Construct	Pending	George Mason Blvd.	Univer. Dr @ Armstrong St.	Univ. Dr. @ Parking Entr.	0	4	0	2	No	2009	Yes
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	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	nrs	Widen	N/A	VA 234 (Sudley Road) 3rd NB lane	Dorsey Circle	Godwin Dr.	2	2	4	5	No	2006	No
VDOT	VU31	Widen	Approved	VA 7 (East Market Street)	Loudoun Street	Sycolin Road	3	3	2	4	complete	2003	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	No	2004	No
VDOT	nrs	Construct	N/A	Potomac Avenue	Four Mile Run	Crystal Drive	-	3	-	4	No	2005	No
VDOT	AR28b	Widen	N/A	N. Quincy St.	Wilson Blvd.	VA 237	3	3	2	4	No	2007	No
VDOT	AR19a	Reconstruc	Pending	Wilson Blvd.	N. Frederick	George Mason Dr.	2	2	4	4	No	2004	Yes
Fairfax Secondary													

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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	VSF2c	Widen	Pending	VA 608 (West Ox Road)	VA 6985 (Ox Trail)	VA 602 (Lawyers Road)	3	3	2	4	yes	2005	No
VDOT	VSF2a	Widen	Pending	VA 608 (West Ox Road)	VA 6558 (Penderbrook Drive)	VA 6985 (Ox Trail)	3	3	2	4	No	2008	Yes
VDOT	VSF5a	Widen	Approved	VA 613 (Beulah Street)	VA 644 (Franconia Road)	VA 7900 (Franconia-Springfield Pkwy)	3	3	2	4	Complete	2004	No
VDOT	FFX5d	Construct	Pending	VA 613 (S. Van Dorn St.)	Kingstowne Blvd.	VA 611	0	3	0	4	yes	2004	No
VDOT	VSF10g	Construct	Pending	VA 638 (Rolling Road)	connection to VA 4600 (Fullerton Road)		0	3	0	2	Complete	2003	Yes
VDOT	VSF13e	Widen	Pending	VA 642 (Lorton Road)	VA 600 (Silverbrook Road)	US 1 (Richmond Highway)	3	3	2	6	yes	2006	Yes
VDOT	VSF14b	Widen	Approved	VA 643 (Lee Chapel Road)	VA 7100 (Fairfax County Parkway)	VA 644 (Old Keene Mill Road)	3	3	2	4	Complete	2002	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	No	2005	No
VDOT	VSF18b	Widen	N/A	VA 657 (Centreville Road)	VA 8390 (Metrotech Dr.)	VA 668 (McLearen Road)	3	3	2	4	No	2007	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	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	FFX22b	Construct	Pending	VA 828 (Wiehle Ave.)	VA 7100 (Fairfax County Parkway)	VA 228 (Dranesville Road)	0	3	0	4	Complete	2002	No
VDOT	VSF25n	Construct	Approved	VA 7100 (Fairfax County Parkway)	VA 4600 (Fullerton Road)	VA 7900 (Franconia-Springfield Parkway)	0	1	0	6	No	2007	Yes
FHWA/VDOT		Convert to Centroid Connector		Woodlawn Rd., Beulah St., Kingman Rd.	Woodlawn and Beulah from US 1 to Telegraph	Kingman from Beulah to Telegraph	0	0	0	0	Complete	2005	No
FHWA/VDOT	FED2	Widen	Pending	Old Mill Rd.	US 1	Pole Rd	4	4	2	4	No	2009	Yes
FHWA/VDOT	FED3	Construct	Pending	Old Mill Rd. extended	Pole Rd.	Telegraph	0	3	0	4	No	2009	Yes
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

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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		Widen	N/A	VA 606 (Dulles Greenway Interchange)	within Greenway R/W		1	1	2	6	No	2004	No
VDOT		widen/ Constr.	N/A	VA 607 (Loudoun County Pkwy) (nee VA 28 Bypass)	VA 620 @ VA 613	Edgewater St.		3		4	No	2007	No
VDOT		Construct	N/A	VA 607 (Loudoun County Pkwy) (nee VA 28 Bypass)	Edgewater St.	US 50	-	3	-	4	Complete	2004	No
VDOT	VSL10bf	Widen/Up grade	Pending	VA 607 (Loudoun County Pkwy) (dirt road)	Redskin Park Drive	Gloucester Parkway	4	3	2	4	No	2005	No
VDOT	VSL10bd	Widen/Up grade	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	VSL4e	Widen/Up grade	N/A	VA 659 (Gum Spring Rd.)	VA 620 (Braddock Road)	US 50	4	3	2	4	No	2006	No
VDOT	VSL44	Widen/Up grade	N/A	VA 772 (Ryan Road)	VA 659 (Belmont Ridge Rd.)	Dulles Greenway @ exit #6	4	3	2	6	Yes	2004	No
VDOT	VSL40a	Widen	N/A	VA 901 (Claiborne Parkway)	VA 640 (Ashburn Farm Road)	W&OD Trail	4	3	2	4	No	2007	No
VDOT	nrs	Construct	Pending	VA 868 (Davis Dr.)	VA 606 (Old Ox Road)	VA 625 (Church Road)	-	4	-	4	No	2007	Yes
VDOT	VSL47	Widen/Up grade	N/A	River Creek Parkway	Riverside Parkway	VA 773 (Edwards Ferry Road)	4	3	2	4	No	2007	No
VDOT	VSL48	Construct	N/A	Riverside Parkway	River Creek Parkway	Ashburn Village Blvd.	-	3	-	4	No	2007	No
VDOT	VSL50	Widen/Up grade	Pending	VA 773 (Fort Evans Road)	Leesburg Town Limits	River Creek Parkway	4	3	2	4	No	2007	No
Prince William Secondary													
VDOT	VSP46b	Construct	Pending	VA 1566 (Sudley Manor Drive Extension)	VA 619 (Linton Hall Road)	VA 234 Bypass	0	4	0	4	No	2006	Yes
VDOT	VSP46	Construct	Pending	VA 1566 (Sudley Manor Drive Extension)	VA 234 Bypass	Chatsworth Drive	0	4	0	4	No	2006	Yes
VDOT	VSP25d	Construct	Pending	VA 2480 (Benita Fitzgerald Drive, Extended)	VA 610 (Cardinal Drive)	VA 2480 (Benita Fitzgerald Drive)	0	3	0	4	No	2006	Yes
VDOT	VSP23f	Construct	Pending	VA 3000 (Prince William Parkway)	I-95	US 1 at Longview Drive	0	2	0	4	Yes	2005	Yes

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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	VSP2a	Widen/Upgrade	Approved	VA 619 (Linton Hall Road)	US 29 (Lee Highway)	VA 675 (Glenkirk Road)	4	3	2	6	No	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	No	2006	Yes
VDOT	VSP2h	Widen	Pending	VA 619 (Joplin Rd.) add right turn lane	I-95 exit Ramp	US 1	4	4	4	5	No	2006	yes
VDOT	VSP40a	Construct	Pending	VA 635 (Cherry Hill VRE Access Road)	US 1	Future VRE Station site	0	4	0	2	No	2008	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	VSP15c	Widen	Pending	VA 640 (Minnieville Road)	VA 849 (Caton Hill Road)	VA 641 (Old Bridge Road)	3	3	2	4	No	2007	Yes
VDOT	VSP12a	Widen	Pending	VA 643 (Spriggs Rd.)	VA 234 (Dumfries Rd))	VA 642 (Hoadly Road)	3	3	2	4	yes	2007	Yes
VDOT	VSP9	Widen	Pending	VA 660 (Hornbaker Road)	VA 28 (Nokesville Rd.)	VA 840 (University Boulevard Extended)	3	3	2	4	complete	2005	Yes
VDOT	VSP17c	Widen	Pending	VA 674 (Wellington Rd.)	VA 619 (Relocated Linton Hall Rd)	VA 621 (Devlin Road)	3	3	2	4	No	2006	Yes
VDOT	VSP47c	Construct	Pending	VA 840 (University Blvd.)	VA 660 (Hornbaker Rd.)	VA 234 Bypass	0	3	0	4	complete	2004	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)	VA 234 Bypass	Manassas Airport	0	4	0	2	Yes	2006	Yes
FAMPO													
FAMPO	FAI1a	Construct	EA Compl.	I-95 interchange	at VA 627		1	1	0	0	No	2004	Yes
FAMPO	FAP2	realign	Compl.	VA 218 / VA 212	VA 212	VA 218	0	3	0	4	Yes	2004	Yes
FAMPO	FAS23a	Construct	Pending	VA 208 Bypass (Spotsylvania)	West of Ta River	East of Po River	0	3	0	2	ROW	2009	Yes
FAMPO	FAS23b	Construct	Pending	VA 208 Bypass (Spotsylvania)	East of Po River	West of Ni River	0	3	0	4	ROW	2007	Yes
STAFFORD COUNTY SECONDARY													

Attachment B

2008 and 2009 8-Hour Ozone SIP Network 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	FAS7a	Widen	Compl.	VA 607	VA 626	VA 218	4	4	2	4	Yes	2006	Yes
FAMPO	FAS7b	Recon-struct	Compl.	VA 607	VA 218	VA 3	4	4	2	4	Yes	2003	Yes
FAMPO	FAS3c	Widen		VA 610 (Garrisonville Rd.)	VA 610 (existing 4 lane section	VA 643	4	4	2	4	Yes	2008	Yes
FAMPO	FAS3da	Widen		VA 610 (Garrisonville Rd.)	US 1	VA 684 (Mine Rd.)	4	3	6	8	No	2008	Yes
FAMPO	FAS3d	Widen		VA 610 (Garrisonville Rd.)	VA 684 (Mine Rd.)	VA 641	4	3	4	6	No	2005	Yes
FAMPO	FAS9	Widen		VA 627	Existing VA 627	proposed I-95/VA 627 int.	4	4	2	4	No	2004	
SPOTSYLVANIA COUNTY SECONDARY													
FAMPO	FAS7a	Widen	Compl.	VA 607 (Deacon Rd)**	VA 218	VA 626	4	4	2	4	Yes	2004	Yes
FAMPO	FAS9c	Widen		VA 627 (Spotsylvania)	VA 610	VA 620	4	4	2	4	Yes	2000	Yes
FAMPO	FAS20a	Widen	Pending	VA 639 (Leavells Rd.)	VA 620	VA 208	4	4	2	4	Yes	2004	Yes
FAMPO	FAS20c	Widen		VA 639 (Bragg Rd.)	VA 618	VA 3	4	4	2	4	No	2008	Yes

Attachment B
2008 and 2009 8-Hour Ozone SIP Network
(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		Construc	Approved	SEP-Largo Extension and Parking	Addison Road	Largo	Complete	2005	Yes
WMATA		Construc	Approved	SEP-New York Avenue Station			Complete	2005	Yes
District of Columbia									
DCDOT			Pending	CSX Shepherd Branch (formerly Anacostia Rail Line)	Pennsylvania Ave., SE	South Capitol St. SW		2005	Yes
DCDOT		Reconstruct		K St. Busway	Mt. Vernon Sq./7th St. NW	Wash.Circle / 23rd St. NW		2008	
Maryland									
MTA		Construct		Silver Spring Transit Center	Phase II			2007	Yes
MTA		Construct		Southern MD Commuter Bus Initiative	Park-and-Ride lots and increase bus service	in the MD 5 corridor (La Plata)		2007	Yes
Montgomery County									
Mont.Co.	MCT24	Construc	N/A	Grovesnor Metro Parking Garage	Grosvenor Metrorail Station		Complete	2004	Yes
Mont.Co.	MCT16			NIH Naval Medical Transportation Management	Bethesda				No
Prince Georges County									
PG Co.		Construc	N/A	Accokeek Fringe Parking Lot			Complete	2003	Yes
Virginia									
~~VDOT~~		~~Construc~~	~~Pending~~	~~Park-and-Ride~~	~~I-95 Springfield Interchange Congestion Mitigation~~	~~@ Backlick South~~	~~No~~	~~2005~~	~~No~~
VDOT		Impleme	N/A	VA 244 (Columbia Pike) Signal Prioritization	Fairfax County Line	Pentagon	No	2004	Yes
Arlington Co.		Construc	Pending	Crystal City / Potomac Yard Busway (2-lane) Segment 1	Vicinity of Glebe Rd. Ext.	26th St.	No	2006	Yes
Arlington Co.		Construc	Pending	Crystal City / Potomac Yard Busway (2-lane) Segment 2	26th St.	Crystal City Metro Station	No	2008	No

Attachment B
2008 and 2009 8-Hour Ozone SIP Network
(Transit)

Agency	Project ID	Improv.	Environ. Review	Facility	From	To	Under Const. or ROW acquired?	Complt. Date or Status	In TIP?
VDOT		Impleme	Pending	US 1 Transit Improvements	Gunston Road	Huntington Avenue	No	2005	Yes
VDOT		Construc	Pending	Park-and-Ride Lot	Springfield CBD	vic. I-95 & Old Keene Mill Road	No	2005	Yes
VDOT		Relocat	Pending	Park-and-Ride Lot (Leesburg)	Relocate to vic. of Leesburg Bypass	VA 7, and / or the Dulles Greenway	No	2007	Yes
VDOT			N/A	Dulles Corridor Slip Ramps	Dulles Corridor Park & Ride Lots	Dulles Toll Road	Complete	2003	No
VDOT		Construc	Pending	Park-and-Ride Lot	VA 7900 (F-S Pkwy.) PnR	@ Gambrill Road Location	Yes	2005	Yes
VDOT		Construc	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		Construc	Pending	Park-and-Ride Lot	VA 7900 (F-S Pkwy.) PnR	@ Backlick Road North	No	2006	Yes
VDOT		Recons	N/A	Park-and-Ride Lot Enhancements	@ Reston, Centreville, West Springfield		No	2004	Yes
VDOT		Construc	Pending	Transit Center (Reston)	Reston Town Center	@Explorer Dr. & Bluemont Way	No	2004	Yes
VDOT		Construc	Pending	Transit Center (Bradlee Shopping Center)	King St. and Braddock Rd.		No	2008	Yes
VDOT		Construc	Pending	Transit Center (Seven Corners)	Seven Corners Shopping Center		No	2004	Yes
VDOT		Construc	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
PRTC		Bus service		Omni Service Improvements				2005	
VDRPT		Incorpor	Pending	DCRTP - BRT Elements into the Express Bus Service in	East Falls Church Metrorail Station	Route 772	Ongoing	2005	Yes
VRE		Construc	Pending	VRE - Cherry Hill Commuter Rail Station	Cherry Hill	Prince William County	No	2006	Yes

ATTACHMENT B

ATTACHMENT B

Memorandum

May 10, 2006
Revised: February 21, 2007

To: VIN Decoder Project Files

From: Daivamani Sivasailam
Principal Transportation Engineer

Subject: Development of vehicle age distributions and diesel vehicle percentages using vehicle identification number (VIN) decoder software - Overview

Introduction

This memorandum summarizes the methodology used, and the results obtained, in developing Mobile 6 input files of vehicle characteristics data summarized from 2005 District of Columbia, Maryland and Virginia vehicle registration data. The Mobile 6 model requires age distribution (1-25+ years) and diesel fueled vehicle percentages for 16 separate vehicle types (passenger cars, motorcycles, light trucks, and heavy trucks in ascending weight categories). The model then generates 28 vehicle types by applying the diesel percentages to the relevant vehicle types. This work continues the cycle of obtaining consistent vehicle registrations on a 3 year basis. These results will be used in the development of the mobile source emissions inventories for state implementation plan (SIP) preparation and in air quality conformity assessments.

Background

In FY 2005, Department of Transportation Planning staff embarked on a pilot test of VIN decoder software. Samples of VIN data were obtained from the District of Columbia, Maryland, and Virginia and they were decoded using software called VINPOWER developed by ESP Data Solutions. From the decoded database, age distributions and diesel vehicle percentages for sixteen vehicle types were developed. The resulting distributions were compared with (2002) distributions previously developed from DMV data by the air agencies. Staff concluded that the software could be used to develop vehicle age distributions and diesel vehicle percentages for calendar year 2005. In FY 2006 staff purchased the full version of the decoder software and internally developed the program required to run the software in a batch mode.

Application of VIN Decoder

During spring 2005, the air agencies were asked to provide registration data including VIN numbers as of July 1, 2005. DTP staff received the data in early fall and, after data were cleaned of duplicates, successfully decoded the vehicle identification using the VIN decoder software. Staff then executed several work tasks to translate the decoded data into the vehicle type, age and fuel type categories required by the Mobile 6 model. These steps are documented in the

attachments to the May 10, 2006 memorandum from Michael J. Clifford to the Transportation Planning Board. Exhibit 1 is a summary chart showing the vehicle percentages for the District of Columbia, Maryland, and Virginia under three broad classifications of passenger, light duty and heavy duty vehicles. Exhibit 2 is a summary chart of average age for the three vehicle classifications. Included in the charts are the national averages used as default in the Mobile 6 model.

Exhibit 1
Exhibit 2

Exhibit I

Vehicle Fleet Distributed by Vehicle Type for the Washington Metropolitan Area

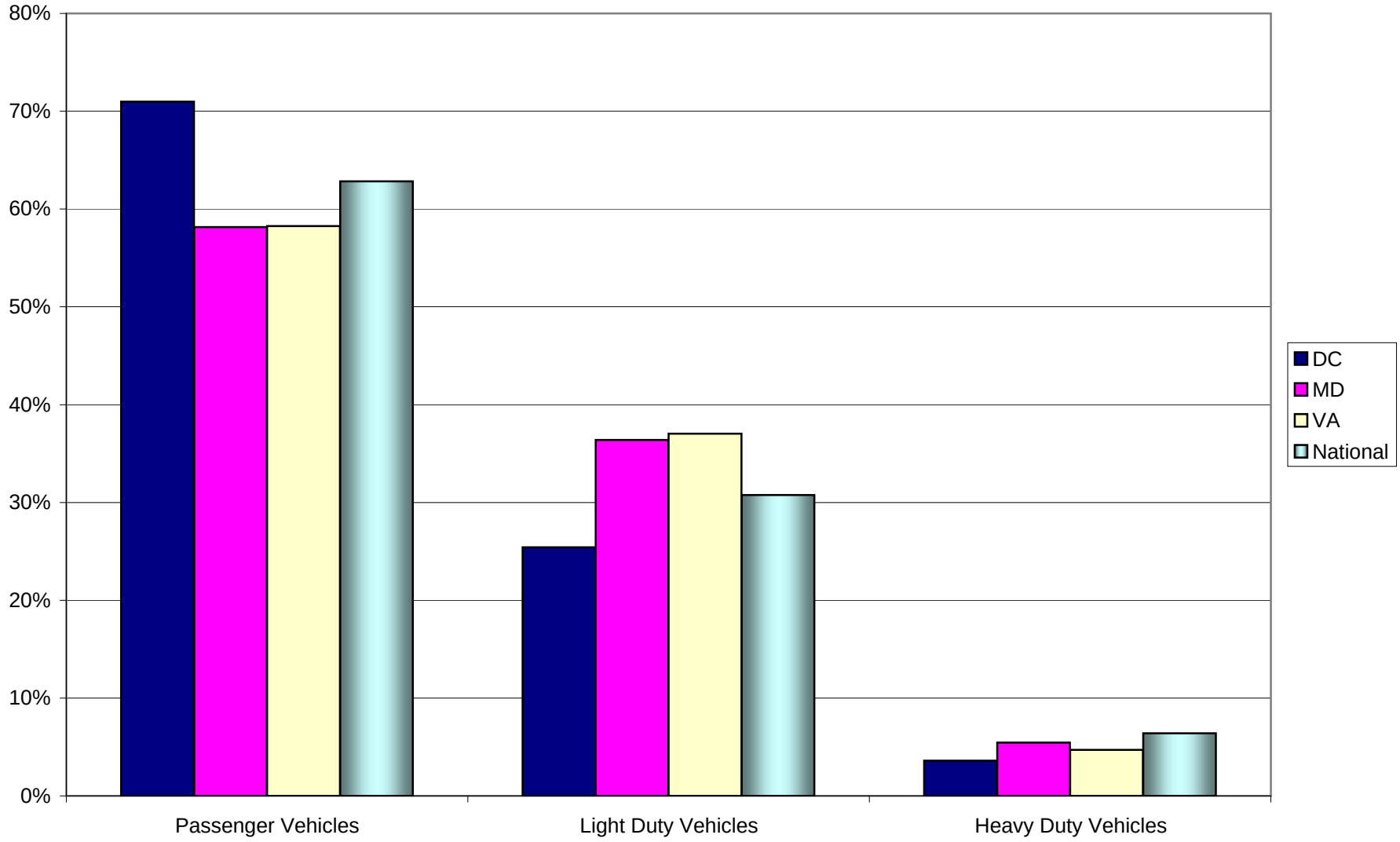
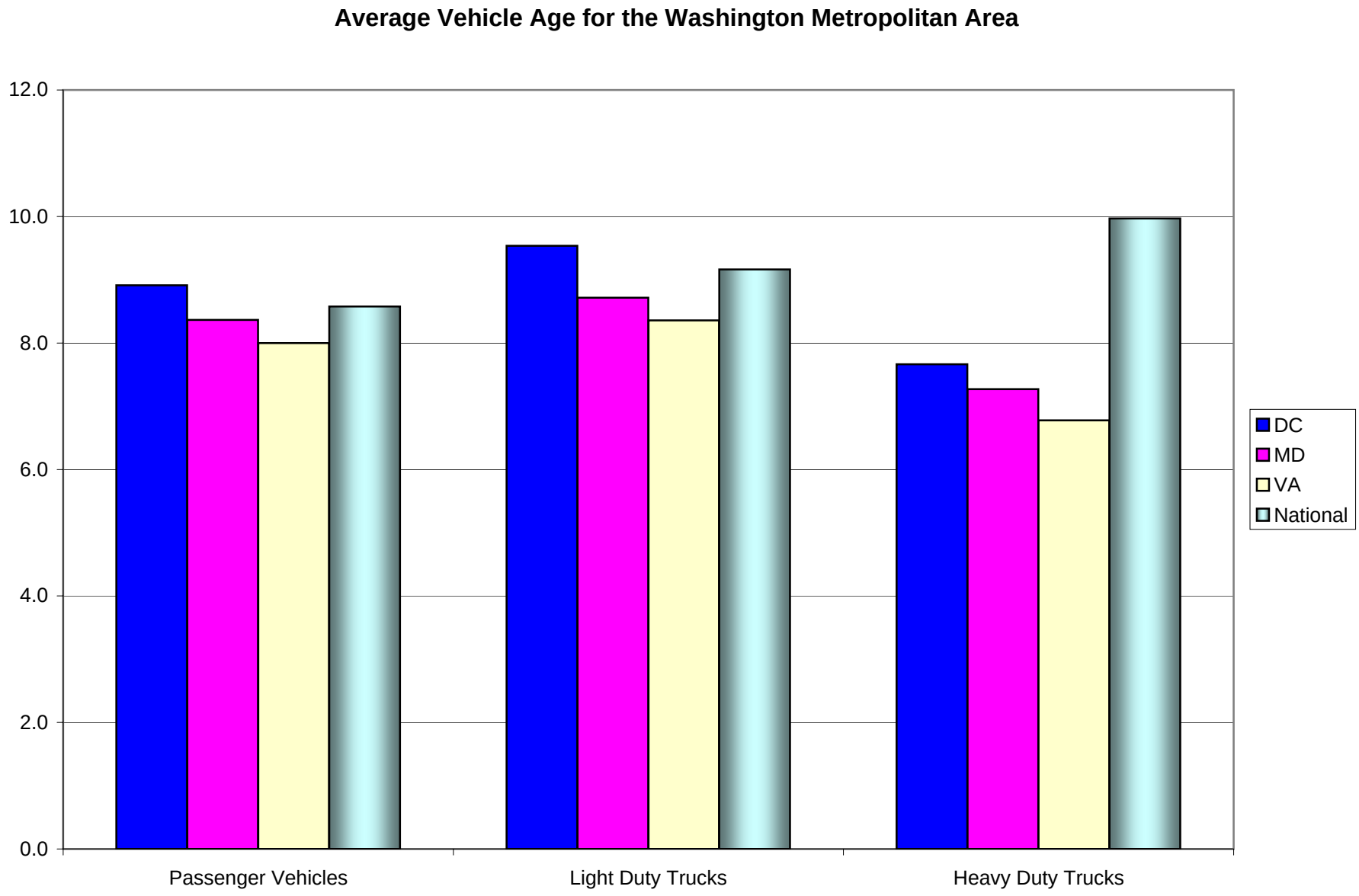


Exhibit 2


Average Vehicle Age for the Washington Metropolitan Area
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Passenger Vehicles
Light Duty Trucks
Heavy Duty Trucks
DC
MD
VA
National

ATTACHMENT C

ATTACHMENT C

Memorandum

Date: March 6, 2007

To: Michael Clifford, TPB

From: Sunil Kumar, MWAQC

Subject: MOBILE6 Input Documentation for Rate-of-Further Progress Adjusted Base Years 2002 and 2008 and Uncontrolled and Controlled Future Years 2008 and 2009 Inventories

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The purpose of this memorandum is to document the MOBILE6 inputs for developing the onroad RFP adjusted base year emission inventories for calendar years 2002 and 2008 and uncontrolled and controlled future calendar years 2008 and 2009. Uncontrolled 2008 and 2009 inventories include post-2002 growth but no post-2002 controls in them and therefore are "uncontrolled" since the base year 2002. Separate sets of input files were created to model emission factors corresponding to travel in the COG region for each of these calendar years 1) on network and local roadways, 2) during auto access to transit, and 3) by diesel transit and school buses. A number of MOBILE6 inputs used are the same as in the case of base year 2002 inventory. BY 2002 MOBILE6 inputs are described in details in Appendix B (Base Year 2002 Emissions Inventory Document) of the Washington, DC-MD-VA 8-Hour Ozone Nonattainment Area being submitted along with this SIP document.

MOBILE6 inputs documented in different RFP adjusted base years, uncontrolled and, controlled future year inventories are discussed below, along with documentation of the source of individual MOBILE6 input parameters.

1) RFP Adjusted Base Years 2002 and 2008 Inventories

- MOBILE6 Run Commands — The following run commands are used in both RFP adjusted base year MOBILE6 input files: "NO CLEAN AIR ACT", "NO TIER2", and "NO 2007 HDDV RULE".
- Registration Distributions—The registration distributions are the same as those documented for 2002 for network/local/auto access to transit and for diesel transit and school buses.
- Diesel Sales Fractions — The diesel sales fractions are the same as those documented for 2002.
- VMT Mix Fractions — The VMT Mix fractions are the same as those documented for 2002.
- Inspection and Maintenance (I/M) and Anti-Tampering Program (ATP) Inputs — The 1990 I/M and ATP programs documented in this memo are used in both RFP adjusted base case MOBILE6 input files.
- Trip Length Distribution, Speeds, VMT by Facility, and Soak Distributions—All of these parameters are the same as those documented for 2002.
- Relative Humidity, Temperatures and Evaluation Month — These are the same as

- documented for 2002.
- RVP — The RVP modeled for both RFP adjusted base year runs is 7.8 psi. This differs from the 1990 RVP of 8.2 psi to account for Phase II of the Federal RVP program which started in 1992. The RVP control program was enacted prior to the 1990 Clean Air Act Amendments, and therefore, needs to be accounted for in the adjusted base year MOBILE6 runs.
- Gasoline Sulfur – Mobile6 model automatically sets this value at 300 ppm for all model years greater than 1993 if Clean Air Act benefits are not being modeled.
- NOx Rebuild Effects - This is the same as documented for 2002.
- Calendar Year — The calendar year is set to 2002 or 2008, depending on the year to be run.

2) Uncontrolled Future Years 2008 and 2009 Inventories

- MOBILE6 Run Commands — Run commands used in the base year 2002 along with following commands: "NO TIER2", and "NO 2007 HDDV RULE" are used in uncontrolled future years 2008 and 2009 MOBILE6 input files.
- Registration Distributions—The registration distributions are the same as those documented for 2002 for network/local/auto access to transit and for diesel transit and school buses.
- Diesel Sales Fractions — The diesel sales fractions for calendar years 2008 and 2009 documented in this memo are used in base year 2002 controlled 2008 and 2009 MOBILE6 input files.
- VMT Mix Fractions — The 2008 and 2009 VMT Mix fractions documented in this memo are used in base year 2002 controlled 2008 and 2009 MOBILE6 input files. VMT mix fractions for school and transit bus analyses are the same as used in 2002.
- Inspection and Maintenance (I/M) and Anti-Tampering Program (ATP) Inputs — These are the same as documented for 2002.
- Trip Length Distribution, Speeds, VMT by Facility, and Soak Distributions—All of these parameters are the same as those documented for 2002.
- Relative Humidity, Temperatures and Evaluation Month — These are the same as documented for 2002.
- RVP — RVP values are the same as documented for 2002.
- Gasoline Sulfur – They are the same as documented for 2002.
- NOx Rebuild Effects - This is the same as documented for 2002.
- Calendar Year — The calendar year is set to 2008 or 2009, depending on the year to be run.

3) Controlled Future Years 2008 and 2009 Inventories

- MOBILE6 Run Commands — Run commands used in the base year 2002 are also used in controlled future years 2008 and 2009 MOBILE6 input files.
- Registration Distributions—The registration distributions are the same as those documented for 2002 for network/local/auto access to transit and for diesel transit and school buses.

ATTACHMENT C

- Diesel Sales Fractions — The diesel sales fractions for calendar years 2008 and 2009 documented in this memo are used in all controlled MOBILE6 input files.
- VMT Mix Fractions — The 2008 and 2009 VMT Mix fractions documented in this memo are used in all controlled MOBILE6 input files. VMT mix fractions for school and transit bus analyses are the same as used in 2002.
- Inspection and Maintenance (I/M) and Anti-Tampering Program (ATP) Inputs — The 2008 and 2009 I/M and ATP programs documented in this memo are used in all controlled MOBILE6 input files.
- Trip Length Distribution, Speeds, VMT by Facility, and Soak Distributions—All of these parameters are the same as those documented for 2002.
- Relative Humidity, Temperatures and Evaluation Month — These are the same as documented for 2002.
- RVP — RVP values are the same as documented for 2002.
- Gasoline Sulfur – 30 ppm (Mobile6 default for 2008 onwards).
- NOx Rebuild Effects – District of Columbia and Virginia used: 11% and 25% respectively (2002 values); Maryland: 90%.
- Calendar Year — The calendar year is set to 2008 or 2009, depending on the year to be run.

ATTACHMENT C

I/M Program Parameters

Details of the format for the I/M Program Parameters listed in Tables D-1 through D-7 can found in the Mobile6 model user guide.

Table D-1
1990 I/M Program Parameters for District of Columbia

> Exhaust I/M - IDLE test program #1
I/M PROGRAM : 1 1983 2050 2 T/O IDLE
I/M MODEL YEARS : 1 1968 2050
I/M VEHICLES : 1 22222 22222111 1
I/M STRINGENCY : 1 20
I/M COMPLIANCE : 1 96
I/M WAIVER RATES : 1 3 3

Table D-2
1990 I/M Program Parameters for Maryland

The I/M program below existed only in Montgomery and Prince George's in 1990.

>IM Program for 1990. Idle Test All Vehicles
*Idle for all vehicles
I/M PROGRAM : 1 1984 2050 2 T/O Idle
I/M MODEL YEARS : 1 1977 2050
I/M VEHICLES : 1 22222 22222111 1
I/M STRINGENCY : 1 23.0
I/M COMPLIANCE : 1 96.0
I/M WAIVER RATES : 1 21.0 23.0
I/M GRACE PERIOD : 1 1

Table D-3
1990 I/M Program Parameters for Virginia

The I/M program below existed only in Arlington, Fairfax, Prince William, and Alexandria in

1990.

I/M PROGRAM : 1 1983 2050 2 TRC IDLE
I/M MODEL YEARS : 1 1968 2050
I/M VEHICLES : 1 22222 11111111 1
I/M STRINGENCY : 1 35
I/M COMPLIANCE : 1 98.0
I/M WAIVER RATES : 1 3.0 3.0

Table D-4
2008 & 2009 I/M Program Parameters for District of Columbia

* District of Columbia's I/M input parameters for MOBILE6 for year 2004 and beyond:
* The actual start date of the IM240 was 1999
* The actual start date of the OBD testing was 2004
* The dates used below for IM240 and OBD testing are needed to obtain the

* appropriate I/M credit in MOBILE6.

> Exhaust I/M - LDV pre-83 MY IDLE test program #1
I/M PROGRAM : 1 1983 2050 2 T/O IDLE
I/M MODEL YEARS : 1 1972 1983
I/M VEHICLES : 1 22222 11111111 1
I/M STRINGENCY : 1 20.0
I/M COMPLIANCE : 1 96.0
I/M WAIVER RATES : 1 3.0 3.0
I/M EXEMPTION AGE : 1 25.0

> Exhaust I/M - LDV MY 84-95 IM240 test program #2 (DC IM240 Start:1999)

I/M PROGRAM : 2 1983 2050 2 T/O IM240
I/M MODEL YEARS : 2 1984 1995
I/M VEHICLES : 2 22222 11111111 1
I/M STRINGENCY : 2 20.0
I/M COMPLIANCE : 2 96.0
I/M WAIVER RATES : 2 3.0 3.0
I/M CUTPOINTS : 2 IM_ATP\DC.C02
I/M EXEMPTION AGE : 2 25.0

> Evap I/M - LDV pre-95 MY Gas Cap pressure test program #3
I/M PROGRAM : 3 1999 2050 2 T/O GC
I/M MODEL YEARS : 3 1972 1995
I/M VEHICLES : 3 22222 11111111 1
I/M COMPLIANCE : 3 96.0

I/M WAIVER RATES : 3 3.0 3.0
I/M EXEMPTION AGE : 3 25.0

> Exhaust I/M - LDV post-96 MY OBD test program #4 (DC OBD Start:Jan 2004)

I/M PROGRAM : 4 1983 2050 2 T/O OBD I/M
I/M MODEL YEARS : 4 1996 2050
I/M VEHICLES : 4 22222 11111111 1
I/M STRINGENCY : 4 20.0
I/M COMPLIANCE : 4 96.0
I/M WAIVER RATES : 4 3.0 3.0
I/M EXEMPTION AGE : 4 25.0

> Evap I/M - LDV post-96 OBD Evap test program #5 (DC OBD Start:Jan 2004)

I/M PROGRAM : 5 1999 2050 2 T/O EVAP OBD & GC
I/M MODEL YEARS : 5 1996 2050
I/M VEHICLES : 5 22222 11111111 1
I/M STRINGENCY : 5 20.0
I/M COMPLIANCE : 5 96.0
I/M WAIVER RATES : 5 3.0 3.0
I/M EXEMPTION AGE : 5 25.0

> Exhaust I/M - HDGV IDLE program #6
I/M PROGRAM : 6 1983 2050 2 T/O IDLE
I/M MODEL YEARS : 6 1972 2050
I/M VEHICLES : 6 11111 22222111 1
I/M STRINGENCY : 6 20.0
I/M COMPLIANCE : 6 96.0
I/M WAIVER RATES : 6 3.0 3.0
I/M EXEMPTION AGE : 6 25.0

Table D-5
2008 & 2009 I/M Program Parameters for Maryland

Montgomery and Prince George's

>IM Program. Idle, IM240, and OBD.
>Waiver rates based on rates observed for January - June 2004 initial tests as of April 2005.
*Idle older LDGV, LDGT
I/M PROGRAM : 1 1984 2050 2 T/O Idle
I/M MODEL YEARS : 1 1977 1983
I/M VEHICLES : 1 22222 11111111 1
I/M STRINGENCY : 1 20.0
I/M COMPLIANCE : 1 96.0
I/M WAIVER RATES : 1 12.7 12.7
I/M GRACE PERIOD : 1 2

*Idle HDGT
I/M PROGRAM : 2 1984 2050 2 T/O Idle

I/M MODEL YEARS : 2 1977 2050
I/M VEHICLES : 2 11111 22222111 1
I/M STRINGENCY : 2 20.0
I/M COMPLIANCE : 2 96.0
I/M WAIVER RATES : 2 12.7 12.7
I/M GRACE PERIOD : 2 2

*IM240
I/M PROGRAM : 3 1984 2050 2 T/O IM240
I/M MODEL YEARS : 3 1984 1995
I/M VEHICLES : 3 22222 11111111 1
I/M STRINGENCY : 3 20.0
I/M COMPLIANCE : 3 96.0
I/M WAIVER RATES : 3 12.7 12.7
I/M CUTPOINTS : 3 IM_ATP\MD.C08 (MD.C09 for 2009)

I/M GRACE PERIOD : 3 2

*OBD
I/M PROGRAM : 4 1984 2050 2 T/O OBD I/M
I/M MODEL YEARS : 4 1996 2050
I/M VEHICLES : 4 22222 11111111 1
I/M STRINGENCY : 4 20.0
I/M COMPLIANCE : 4 96.0
I/M WAIVER RATES : 4 4.9 4.9
I/M GRACE PERIOD : 4 2

*OBD Evap (Actual Start Year: July 2002)
I/M PROGRAM : 5 2002 2050 2 T/O EVAP OBD
I/M MODEL YEARS : 5 1996 2050
I/M VEHICLES : 5 22222 11111111 1
I/M COMPLIANCE : 5 96.0
I/M WAIVER RATES : 5 4.9 4.9
I/M GRACE PERIOD : 5 2

Calvert, Charles, Fredrick

>IM Program. Idle, IM240, and OBD.
>Waiver rates based on rates observed for January - June 2004 initial tests as of April 2005.

*Idle older LDGV, LDGT
I/M PROGRAM : 1 1995 2050 2 T/O Idle
I/M MODEL YEARS : 1 1977 1983
I/M VEHICLES : 1 22222 11111111 1
I/M STRINGENCY : 1 20.0
I/M COMPLIANCE : 1 96.0
I/M WAIVER RATES : 1 12.7 12.7
I/M GRACE PERIOD : 1 2

*Idle HDGT
I/M PROGRAM : 2 1995 2050 2 T/O Idle

I/M MODEL YEARS : 2 1977 2050
I/M VEHICLES : 2 11111 22222111 1
I/M STRINGENCY : 2 20.0
I/M COMPLIANCE : 2 96.0
I/M WAIVER RATES : 2 12.7 12.7
I/M GRACE PERIOD : 2 2

*IM240
I/M PROGRAM : 3 1995 2050 2 T/O IM240
I/M MODEL YEARS : 3 1984 1995
I/M VEHICLES : 3 22222 11111111 1
I/M STRINGENCY : 3 20.0
I/M COMPLIANCE : 3 96.0
I/M WAIVER RATES : 3 12.7 12.7
I/M CUTPOINTS : 3 IM_ATP\MD.C08 (MD.C09 for 2009)

I/M GRACE PERIOD : 3 2

*OBD
I/M PROGRAM : 4 1995 2050 2 T/O OBD I/M
I/M MODEL YEARS : 4 1996 2050
I/M VEHICLES : 4 22222 11111111 1
I/M STRINGENCY : 4 20.0
I/M COMPLIANCE : 4 96.0
I/M WAIVER RATES : 4 4.9 4.9
I/M GRACE PERIOD : 4 2

*OBD Evap (Actual Start Year: July 2002)
I/M PROGRAM : 5 2002 2050 2 T/O EVAP OBD
I/M MODEL YEARS : 5 1996 2050
I/M VEHICLES : 5 22222 11111111 1
I/M COMPLIANCE : 5 96.0
I/M WAIVER RATES : 5 4.9 4.9
I/M GRACE PERIOD : 5 2

Table D-6
2008 I/M Program Parameters for Virginia

Arlington, Fairfax, Prince William, Alexandria

* The start date of exhaust and evaporative OBD is 2005. The dates below are used to obtain the appropriate credits.
* I/M Effectiveness reported in Program #3 applies to all exhaust programs modeled as TRC.

> Exhaust I/M - IDLE test program #1
I/M PROGRAM : 1 1983 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 1 1968 1980
I/M VEHICLES : 1 22222 21111111 1
I/M STRINGENCY : 1 35
I/M COMPLIANCE : 1 98.0

I/M WAIVER RATES : 1 1.3 1.3

> Exhaust I/M - ASM final program #2
I/M PROGRAM : 2 1983 2050 2 TRC ASM 2525/5015 FINAL

I/M MODEL YEARS : 2 1981 1995
I/M VEHICLES : 2 22222 11111111 1
I/M STRINGENCY : 2 35
I/M COMPLIANCE : 2 98.0
I/M WAIVER RATES : 2 1.3 1.3

> Exhaust I/M - OBD test program #3
I/M PROGRAM : 3 1983 2050 2 TRC OBD I/M
I/M MODEL YEARS : 3 1996 2050
I/M VEHICLES : 3 22222 11111111 1
I/M STRINGENCY : 3 35
I/M COMPLIANCE : 3 98.0
I/M WAIVER RATES : 3 1.3 1.3
I/M EFFECTIVENESS : 0.94 0.94 0.94

> Evap I/M - Evap OBD test program #4
I/M PROGRAM : 4 1998 2050 2 TRC EVAP OBD & GC

I/M MODEL YEARS : 4 1996 2050
I/M VEHICLES : 4 22222 11111111 1
I/M COMPLIANCE : 4 98.0
I/M WAIVER RATES : 4 1.3 1.3

> Evap I/M - Gas Cap test program #5
I/M PROGRAM : 5 1998 2050 2 TRC GC
I/M MODEL YEARS : 5 1973 1995
I/M VEHICLES : 5 22222 11111111 1
I/M COMPLIANCE : 5 98.0
I/M WAIVER RATES : 5 1.3 1.3

> Exhaust I/M - IDLE test program #6
I/M PROGRAM : 6 1983 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 6 1981 2050
I/M VEHICLES : 6 11111 21111111 1
I/M STRINGENCY : 6 35
I/M COMPLIANCE : 6 98.0
I/M WAIVER RATES : 6 1.3 1.3

> Evap I/M - Gas Cap test program #7
I/M PROGRAM : 7 1998 2050 2 TRC GC
I/M MODEL YEARS : 7 1973 2050
I/M VEHICLES : 7 11111 21111111 1
I/M COMPLIANCE : 7 98.0
I/M WAIVER RATES : 7 1.3 1.3

ATTACHMENT C

Loudoun

* The start date of exhaust and evaporative OBD is 2005. The dates below are used to obtain the appropriate credits.
* I/M Effectiveness reported in Program #3 applies to all exhaust programs modeled as TRC.

> Exhaust I/M - IDLE test program #1
I/M PROGRAM : 1 1998 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 1 1968 1980
I/M VEHICLES : 1 22222 21111111 1
I/M STRINGENCY : 1 35
I/M COMPLIANCE : 1 98.0
I/M WAIVER RATES : 1 1.3 1.3

> Exhaust I/M - ASM final program #2
I/M PROGRAM : 2 1998 2050 2 TRC ASM 2525/5015 FINAL

I/M MODEL YEARS : 2 1981 1995
I/M VEHICLES : 2 22222 11111111 1
I/M STRINGENCY : 2 35
I/M COMPLIANCE : 2 98.0
I/M WAIVER RATES : 2 1.3 1.3

> Exhaust I/M - OBD test program #3
I/M PROGRAM : 3 1998 2050 2 TRC OBD I/M
I/M MODEL YEARS : 3 1996 2050
I/M VEHICLES : 3 22222 11111111 1
I/M STRINGENCY : 3 35
I/M COMPLIANCE : 3 98.0
I/M WAIVER RATES : 3 1.3 1.3
I/M EFFECTIVENESS : 0.94 0.94 0.94

> Evap I/M - Evap OBD test program #4
I/M PROGRAM : 4 1998 2050 2 TRC EVAP OBD & GC

I/M MODEL YEARS : 4 1996 2050
I/M VEHICLES : 4 22222 11111111 1
I/M COMPLIANCE : 4 98.0
I/M WAIVER RATES : 4 1.3 1.3

> Evap I/M - Gas Cap test program #5
I/M PROGRAM : 5 1998 2050 2 TRC GC
I/M MODEL YEARS : 5 1973 1995
I/M VEHICLES : 5 22222 11111111 1
I/M COMPLIANCE : 5 98.0
I/M WAIVER RATES : 5 1.3 1.3

> Exhaust I/M - IDLE test program #6
I/M PROGRAM : 6 1998 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 6 1981 2050
I/M VEHICLES : 6 11111 21111111 1
I/M STRINGENCY : 6 35
I/M COMPLIANCE : 6 98.0
I/M WAIVER RATES : 6 1.3 1.3

> Evap I/M - Gas Cap test program #7
I/M PROGRAM : 7 1998 2050 2 TRC GC
I/M MODEL YEARS : 7 1973 2050
I/M VEHICLES : 7 11111 21111111 1
I/M COMPLIANCE : 7 98.0
I/M WAIVER RATES : 7 1.3 1.3

Table D-7
2009 I/M Program Parameters for Virginia

Arlington, Fairfax, Prince William, Alexandria

* I/M Effectiveness reported in Program #3 applies to all exhaust
* programs modeled as TRC.
* First 4 years exempt.

> Exhaust I/M - IDLE test program #1
I/M PROGRAM : 1 1983 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 1 1968 1980
I/M VEHICLES : 1 22222 21111111 1
I/M STRINGENCY : 1 35
I/M COMPLIANCE : 1 98.0
I/M WAIVER RATES : 1 2.5 2.5
I/M EXEMPTION AGE : 1 24

> Exhaust I/M - ASM final program #2
I/M PROGRAM : 2 1983 2050 2 TRC ASM 2525/5015 FINAL

I/M MODEL YEARS : 2 1981 1995
I/M VEHICLES : 2 22222 11111111 1
I/M STRINGENCY : 2 35
I/M COMPLIANCE : 2 98.0
I/M WAIVER RATES : 2 2.5 2.5
I/M EXEMPTION AGE : 2 24

> Exhaust I/M - OBD test program #3

ATTACHMENT C

I/M PROGRAM : 3 1983 2050 2 TRC OBD I/M
I/M MODEL YEARS : 3 1996 2050
I/M VEHICLES : 3 22222 11111111 1
I/M STRINGENCY : 3 35
I/M COMPLIANCE : 3 98.0
I/M WAIVER RATES : 3 2.5 2.5
I/M EXEMPTION AGE : 3 24
I/M EFFECTIVENESS : 0.94 0.94 0.94
I/M GRACE PERIOD : 3 4

> Evap I/M - Evap OBD test program #4
I/M PROGRAM : 4 1998 2050 2 TRC EVAP OBD & GC

I/M MODEL YEARS : 4 1996 2050
I/M VEHICLES : 4 22222 11111111 1
I/M COMPLIANCE : 4 98.0
I/M WAIVER RATES : 4 2.5 2.5
I/M EXEMPTION AGE : 4 24
I/M GRACE PERIOD : 4 4

> Evap I/M - Gas Cap test program #5
I/M PROGRAM : 5 1998 2050 2 TRC GC
I/M MODEL YEARS : 5 1973 1995
I/M VEHICLES : 5 22222 11111111 1
I/M COMPLIANCE : 5 98.0
I/M WAIVER RATES : 5 2.5 2.5
I/M EXEMPTION AGE : 5 24

> Exhaust I/M - IDLE test program #6
I/M PROGRAM : 6 1983 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 6 1981 2050
I/M VEHICLES : 6 11111 21111111 1
I/M STRINGENCY : 6 35
I/M COMPLIANCE : 6 98.0
I/M WAIVER RATES : 6 2.5 2.5
I/M EXEMPTION AGE : 6 24
I/M GRACE PERIOD : 6 4

> Evap I/M - Gas Cap test program #7
I/M PROGRAM : 7 1998 2050 2 TRC GC
I/M MODEL YEARS : 7 1973 2050
I/M VEHICLES : 7 11111 21111111 1
I/M COMPLIANCE : 7 98.0
I/M WAIVER RATES : 7 2.5 2.5
I/M EXEMPTION AGE : 7 24
I/M GRACE PERIOD : 7 4

ATTACHMENT C

Loudoun

* I/M Effectiveness reported in Program #3 applies to all exhaust
* programs modeled as TRC.
* First 4 years exempt.

> Exhaust I/M - IDLE test program #1
I/M PROGRAM : 1 1998 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 1 1968 1980
I/M VEHICLES : 1 22222 21111111 1
I/M STRINGENCY : 1 35
I/M COMPLIANCE : 1 98.0
I/M WAIVER RATES : 1 2.5 2.5
I/M EXEMPTION AGE : 1 24

> Exhaust I/M - ASM final program #2
I/M PROGRAM : 2 1998 2050 2 TRC ASM 2525/5015 FINAL

I/M MODEL YEARS : 2 1981 1995
I/M VEHICLES : 2 22222 11111111 1
I/M STRINGENCY : 2 35
I/M COMPLIANCE : 2 98.0
I/M WAIVER RATES : 2 2.5 2.5
I/M EXEMPTION AGE : 2 24

> Exhaust I/M - OBD test program #3
I/M PROGRAM : 3 1998 2050 2 TRC OBD I/M
I/M MODEL YEARS : 3 1996 2050
I/M VEHICLES : 3 22222 11111111 1
I/M STRINGENCY : 3 35
I/M COMPLIANCE : 3 98.0
I/M WAIVER RATES : 3 2.5 2.5
I/M EXEMPTION AGE : 3 24
I/M EFFECTIVENESS : 0.94 0.94 0.94
I/M GRACE PERIOD : 3 4

> Evap I/M - Evap OBD test program #4
I/M PROGRAM : 4 1998 2050 2 TRC EVAP OBD & GC

I/M MODEL YEARS : 4 1996 2050
I/M VEHICLES : 4 22222 11111111 1
I/M COMPLIANCE : 4 98.0
I/M WAIVER RATES : 4 2.5 2.5
I/M EXEMPTION AGE : 4 24
I/M GRACE PERIOD : 4 4

ATTACHMENT C

> Evap I/M - Gas Cap test program #5
I/M PROGRAM : 5 1998 2050 2 TRC GC
I/M MODEL YEARS : 5 1973 1995
I/M VEHICLES : 5 22222 11111111 1
I/M COMPLIANCE : 5 98.0
I/M WAIVER RATES : 5 2.5 2.5
I/M EXEMPTION AGE : 5 24

> Exhaust I/M - IDLE test program #6
I/M PROGRAM : 6 1998 2050 2 TRC 2500/IDLE
I/M MODEL YEARS : 6 1981 2050
I/M VEHICLES : 6 11111 21111111 1
I/M STRINGENCY : 6 35
I/M COMPLIANCE : 6 98.0
I/M WAIVER RATES : 6 2.5 2.5
I/M EXEMPTION AGE : 6 24
I/M GRACE PERIOD : 6 4

> Evap I/M - Gas Cap test program #7
I/M PROGRAM : 7 1998 2050 2 TRC GC
I/M MODEL YEARS : 7 1973 2050
I/M VEHICLES : 7 11111 21111111 1
I/M COMPLIANCE : 7 98.0
I/M WAIVER RATES : 7 2.5 2.5
I/M EXEMPTION AGE : 7 24
I/M GRACE PERIOD : 7 4

Cut-Point Parameters

Details of the format for the cut-point parameters listed in Tables D-8 through D-10 can found in the Mobile6 model user guide.

Table D-8
Cut-Point Parameters for District of Columbia
(Valid for 2002 and beyond)

* District of Columbia IM240 cutpoints - applies to year 2002 and later

* Block 1 (LDGV, Light LDGT1(EPA LD1))
0.800 0.800 0.800 0.800 0.800 0.800 0.800 1.200 1.200 1.200
1.200 1.200 2.000 2.000 2.000 2.000 2.000 2.000 2.000 2.000
2.000 2.000 2.200 2.000 2.000
15.000 15.000 15.000 15.000 15.000 15.000 15.000 20.000 20.000 20.000
20.000 20.000 30.000 30.000 30.000 30.000 30.000 30.000 30.000 30.000
30.000 30.000 30.000 30.000 30.000
2.000 2.000 2.000 2.000 2.000 2.000 2.000 2.500 2.500 2.500
2.500 2.500 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000
3.000 3.000 3.000 3.000 3.000

* Block 2 (Heavy LDGT1, Light LDGT2 (EPA LD2&3))
1.000 1.000 1.000 1.000 1.000 1.000 1.000 2.400 2.400 2.400
2.400 2.400 3.200 3.200 3.200 3.200 3.200 3.200 3.200 3.200
3.200 3.200 3.200 3.200 3.200
20.000 20.000 20.000 20.000 20.000 20.000 20.000 60.000 60.000 60.000
60.000 60.000 80.000 80.000 80.000 80.000 80.000 80.000 80.000 80.000
80.000 80.000 80.000 80.000 80.000
2.500 2.500 2.500 2.500 2.500 2.500 2.500 3.000 3.000 3.000
3.000 3.000 3.500 3.500 3.500 7.000 7.000 7.000 7.000 7.000
7.000 7.000 7.000 7.000 7.000

* Block 3 (Heavy LDGT2(EPA LD4))
2.400 2.400 2.400 2.400 2.400 2.400 2.400 2.400 2.400 2.400
2.400 2.400 3.200 3.200 3.200 3.200 3.200 3.200 3.200 3.200
3.200 3.200 3.200 3.200 3.200
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000
60.000 60.000 80.000 80.000 80.000 80.000 80.000 80.000 80.000 80.000

80.000 80.000 80.000 80.000 80.000
4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.500 4.500 4.500
4.500 4.500 5.000 5.000 5.000 7.000 7.000 7.000 7.000 7.000
7.000 7.000 7.000 7.000 7.000

* Block 4 (HDGV)
2.400 2.400 2.400 2.400 2.400 3.000 3.000 3.000 3.000 3.000
3.000 3.000 3.200 3.200 3.200 3.200 5.000 5.000 6.000 6.000
6.000 6.000 6.000 6.000 6.000
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000
60.000 60.000 80.000 80.000 80.000 80.000 80.000 80.000 100.000 100.000
100.000 100.000 100.000 100.000 100.000
4.000 4.000 4.000 4.000 4.000 6.000 6.000 6.000 6.000 6.000
6.000 6.000 8.000 8.000 8.000 8.000 8.000 8.000 8.000 8.000
8.000 8.000 8.000 8.000 8.000

Table D-9
2008 Cut-Point Parameters for Maryland

* (SEE P. 16&17 OF EPA REPORT M6.IM.001)
> CY 08
> CUTPOINTS 75% TO FINAL for 1994 and 1995. IMPLEMENTED May 2005.
I/M CUTPOINTS
* Model Years
* 08 07 06 05 04 03 02 01 00 99
* 98 97 96 95 94 93 92 91 90 89
* 88 87 86 85 84

* Block 1 (LDGV, Light LDGT1(EPA LD1))
0.900 0.900 0.900 0.900 0.900 0.900 0.900 0.900 0.900 0.900
0.900 0.900 0.900 0.900 0.900 1.000 1.000 1.000 1.400 1.400
1.400 1.800 1.800 1.800 1.800
20.000 20.000 20.000 20.000 20.000 20.000 20.000 20.000 20.000 20.000
20.000 20.000 20.000 20.000 20.000 20.000 20.000 20.000 30.000 30.000
30.000 30.000 30.000 30.000 30.000
2.100 2.100 2.100 2.100 2.100 2.100 2.100 2.100 2.100 2.100
2.100 2.100 2.100 2.100 2.100 2.200 2.200 2.200 2.500 2.500
2.500 2.800 2.800 2.800 2.800

* Block 2 (Heavy LDGT1, Light LDGT2 (EPA LD2&3))
1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800
1.800 1.800 1.800 1.800 1.800 2.000 2.000 2.000 2.400 2.400
2.400 2.800 2.800 2.800 2.800
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 80.000 80.000
80.000 80.000 80.000 80.000 80.000

2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600
2.600 2.600 2.600 2.600 2.600 2.700 2.700 2.700 3.000 3.000
3.000 5.800 5.800 5.800 5.800

* 08 07 06 05 04 03 02 01 00 99
* 98 97 96 95 94 93 92 91 90 89
* 88 87 86 85 84

* Block 3 (Heavy LDGT2(EPA LD4))
1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800
1.800 1.800 1.800 1.800 1.800 2.000 2.000 2.000 2.400 2.400
2.400 2.900 2.900 2.900 2.900
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 80.000 80.000
80.000 80.000 80.000 80.000 80.000
3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700
3.700 3.700 3.700 3.700 3.700 4.000 4.000 4.000 4.200 4.200
4.200 6.600 6.600 6.600 6.600

* 08 07 06 05 04 03 02 01 00 99
* 98 97 96 95 94 93 92 91 90 89
* 88 87 86 85 84

* Block 4 (HDGV)(Idle Tested)
2.200 2.200 2.200 2.200 2.200 2.200 2.200 2.200 2.200 2.200
2.200 2.200 2.200 2.500 2.500 2.500 2.500 2.500 2.500 2.500
2.600 2.600 2.600 3.000 4.700
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000
80.000 80.000 80.000 80.000 80.000
4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.000
4.000 4.000 4.000 5.500 5.500 5.500 5.500 5.500 5.500 5.500
7.000 7.000 7.000 7.700 7.700

Table D-10
2009 Cut-Point Parameters for Maryland

* (SEE P. 16&17 OF EPA REPORT M6.IM.001)
> CY 09
> CUTPOINTS 75% TO FINAL for 1994 and 1995. IMPLEMENTED May 2005.
I/M CUTPOINTS
* Model Years
* 09 08 07 06 05 04 03 02 01 00
* 99 98 97 96 95 94 93 92 91 90
* 89 88 87 86 85

* Block 1 (LDGV, Light LDGT1(EPA LD1))
0.900 0.900 0.900 0.900 0.900 0.900 0.900 0.900 0.900 0.900
0.900 0.900 0.900 0.900 0.900 0.900 1.000 1.000 1.000 1.400
1.400 1.400 1.800 1.800 1.800
20.000 20.000 20.000 20.000 20.000 20.000 20.000 20.000 20.000 20.000
20.000 20.000 20.000 20.000 20.000 20.000 20.000 20.000 20.000 30.000
30.000 30.000 30.000 30.000 30.000
2.100 2.100 2.100 2.100 2.100 2.100 2.100 2.100 2.100 2.100
2.100 2.100 2.100 2.100 2.100 2.100 2.200 2.200 2.200 2.500
2.500 2.500 2.800 2.800 2.800

* Block 2 (Heavy LDGT1, Light LDGT2 (EPA LD2&3))
1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800
1.800 1.800 1.800 1.800 1.800 1.800 2.000 2.000 2.000 2.400
2.400 2.400 2.800 2.800 2.800
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 80.000
80.000 80.000 80.000 80.000 80.000
2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600
2.600 2.600 2.600 2.600 2.600 2.600 2.700 2.700 2.700 3.000
3.000 3.000 5.800 5.800 5.800

* 09 08 07 06 05 04 03 02 01 00
* 99 98 97 96 95 94 93 92 91 90
* 89 88 87 86 85

* Block 3 (Heavy LDGT2(EPA LD4))
1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800 1.800
1.800 1.800 1.800 1.800 1.800 1.800 2.000 2.000 2.000 2.400
2.400 2.400 2.900 2.900 2.900
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 80.000
80.000 80.000 80.000 80.000 80.000
3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700
3.700 3.700 3.700 3.700 3.700 3.700 4.000 4.000 4.000 4.200
4.200 4.200 6.600 6.600 6.600

* 09 08 07 06 05 04 03 02 01 00
* 99 98 97 96 95 94 93 92 91 90
* 89 88 87 86 85

* Block 4 (HDGV)(Idle Tested)
2.200 2.200 2.200 2.200 2.200 2.200 2.200 2.200 2.200 2.200
2.200 2.200 2.200 2.500 2.500 2.500 2.500 2.500 2.500 2.500
2.600 2.600 2.600 3.000 4.700

60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000
60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000 60.000
80.000 80.000 80.000 80.000 80.000
4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.000
4.000 4.000 4.000 5.500 5.500 5.500 5.500 5.500 5.500 5.500
7.000 7.000 7.000 7.700 7.700

Anti-tampering Program Parameters

Details of the format for the Anti-tampering program (ATP) listed in Tables D-11 and D-12 can found in the Mobile6 model user guide.

Table D-11
1990 Anti-tampering Program Parameters

The ATP existed only in Montgomery and Prince George's in Maryland and in Arlington, Fairfax, Prince William, and Alexandria in Virginia in 1990.

District of Columbia
ANTI-TAMP PROG :
83 68 50 22222 22222111 1 12 096. 12211112

Maryland
ANTI-TAMP PROG :
89 77 50 22222 22222111 1 12 096. 12211111

Virginia
ANTI-TAMP PROG :
89 68 50 22222 21111111 1 12 098. 22212222

Table D-12
2008 & 2009 Anti-tampering Program Parameters

District of Columbia

ATTACHMENT C

ANTI-TAMP PROG :
83 68 50 22222 22222111 1 12 096. 12211112

Maryland
ANTI-TAMP PROG :
89 77 50 22222 22222111 1 12 096. 12211112 (Montgomery & Prince George's)

ANTI-TAMP PROG :
95 77 50 22222 22222111 1 12 096. 12211112 (Calvert, Charles, Fredrick)

Virginia
ANTI-TAMP PROG :
89 68 50 22222 21111111 1 12 098. 22112222 (Arlington, Fairfax, Prince William, Alexandria)

ANTI-TAMP PROG :
98 68 50 22222 21111111 1 12 098. 22112222 (Loudoun)

Summer VMT Mix Fractions For Network, Local, and Auto-Access to Transit Analysis

Summer VMT mix fractions for network, local, and auto-access to transit analyses are being provided in Tables D-13 through D-18. VMT mix fractions are arranged in two rows in the format below for the 16 vehicle categories listed. Further details are available in the Mobile6 model user guide.

LDV LDT1 LDT2 LDT3 LDT4 HDV2B HDV3 HDV4
HDV5 HDV6 HDV7 HDV8A HDV8B HDBS HDBT MC

Table D-13
2008 Summer VMT Mix Fractions For Network Analysis

District of Columbia
0.3701 0.0867 0.3032 0.1025 0.0501 0.0285 0.0028 0.0022
0.0026 0.0066 0.0068 0.0094 0.0235 0.0000 0.0000 0.0050
Calvert
0.3779 0.0787 0.2997 0.1041 0.0523 0.0261 0.0027 0.0018
0.0023 0.0077 0.0048 0.0069 0.0300 0.0000 0.0000 0.0050
Charles
0.3774 0.0779 0.3003 0.1045 0.0525 0.0287 0.0030 0.0021

0.0024 0.0078 0.0063 0.0082 0.0239 0.0000 0.0000 0.0050

Fredrick

0.3679 0.0825 0.3061 0.1049 0.0515 0.0259 0.0026 0.0021
0.0024 0.0071 0.0055 0.0072 0.0296 0.0000 0.0000 0.0047

Montgomery

0.3665 0.0841 0.3065 0.1054 0.0506 0.0269 0.0026 0.0021
0.0024 0.0071 0.0058 0.0070 0.0283 0.0000 0.0000 0.0047

Prince George's

0.3735 0.0813 0.3016 0.1044 0.0520 0.0263 0.0026 0.0021
0.0023 0.0081 0.0058 0.0082 0.0267 0.0000 0.0000 0.0051

Arlington

0.3694 0.0843 0.3056 0.1041 0.0497 0.0291 0.0029 0.0024
0.0024 0.0078 0.0050 0.0091 0.0234 0.0000 0.0000 0.0048

Fairfax

0.3671 0.0839 0.3050 0.1054 0.0516 0.0257 0.0024 0.0020
0.0022 0.0070 0.0055 0.0075 0.0300 0.0000 0.0000 0.0047

Loudoun

0.3678 0.0822 0.3066 0.1049 0.0515 0.0259 0.0026 0.0022
0.0024 0.0071 0.0056 0.0072 0.0293 0.0000 0.0000 0.0047

Prince William

0.3722 0.0806 0.3027 0.1051 0.0522 0.0248 0.0026 0.0020
0.0023 0.0070 0.0058 0.0074 0.0303 0.0000 0.0000 0.0050

Alexandria

0.3694 0.0805 0.3076 0.1057 0.0498 0.0271 0.0025 0.0021
0.0022 0.0080 0.0047 0.0073 0.0284 0.0000 0.0000 0.0047

Table D-14
2008 Summer VMT Mix Fractions
For Local Analysis

District of Columbia

0.3961 0.0928 0.3245 0.1097 0.0537 0.0062 0.0006 0.0005
0.0006 0.0014 0.0015 0.0020 0.0050 0.0000 0.0000 0.0054

Calvert

0.4045 0.0842 0.3208 0.1114 0.0560 0.0057 0.0006 0.0004
0.0005 0.0017 0.0010 0.0015 0.0063 0.0000 0.0000 0.0054

Charles

0.4039 0.0833 0.3214 0.1119 0.0562 0.0062 0.0006 0.0005
0.0005 0.0017 0.0014 0.0018 0.0052 0.0000 0.0000 0.0054

Fredrick

0.3937 0.0883 0.3276 0.1123 0.0551 0.0056 0.0006 0.0005
0.0005 0.0016 0.0012 0.0016 0.0063 0.0000 0.0000 0.0051

Montgomery

0.3922 0.0900 0.3280 0.1127 0.0542 0.0058 0.0006 0.0005
0.0005 0.0016 0.0013 0.0015 0.0061 0.0000 0.0000 0.0050

Prince George's

0.3997 0.0870 0.3227 0.1117 0.0556 0.0057 0.0006 0.0005

0.0005 0.0018 0.0013 0.0018 0.0057 0.0000 0.0000 0.0054

Arlington

0.3953 0.0902 0.3270 0.1114 0.0532 0.0063 0.0006 0.0005
0.0005 0.0017 0.0011 0.0020 0.0051 0.0000 0.0000 0.0051

Fairfax

0.3928 0.0898 0.3264 0.1127 0.0552 0.0056 0.0005 0.0004
0.0005 0.0015 0.0012 0.0016 0.0067 0.0000 0.0000 0.0051

Loudoun

0.3936 0.0880 0.3281 0.1123 0.0551 0.0056 0.0006 0.0005
0.0005 0.0015 0.0012 0.0016 0.0063 0.0000 0.0000 0.0051

Prince William

0.3983 0.0863 0.3239 0.1125 0.0558 0.0054 0.0006 0.0004
0.0005 0.0015 0.0013 0.0016 0.0065 0.0000 0.0000 0.0054

Alexandria

0.3953 0.0862 0.3292 0.1132 0.0533 0.0059 0.0005 0.0005
0.0005 0.0017 0.0010 0.0016 0.0061 0.0000 0.0000 0.0050

Table D-15
2008 Summer VMT Mix Fractions
For Auto Access to Transit Analysis

District of Columbia

0.4033 0.0945 0.3304 0.1117 0.0546 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0055

Calvert

0.4118 0.0857 0.3266 0.1134 0.0570 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0055

Charles

0.4113 0.0848 0.3273 0.1139 0.0572 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0055

Fredrick

0.4008 0.0899 0.3336 0.1143 0.0562 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0052

Montgomery

0.3994 0.0917 0.3340 0.1148 0.0550 0.0000 0.0000 0.0000

0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0051

Prince George's

0.4070 0.0886 0.3286 0.1137 0.0566 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0055

Arlington

0.4025 0.0918 0.3329 0.1134 0.0542 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0052

Fairfax

0.4000 0.0914 0.3324 0.1148 0.0562 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0052

Loudoun

0.4008 0.0896 0.3340 0.1143 0.0561 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0052

Prince William

0.4055 0.0879 0.3298 0.1145 0.0568 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0055

Alexandria

0.4025 0.0877 0.3352 0.1152 0.0543 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0051

Table D-16
2009 Summer VMT Mix Fractions
For Network Analysis

District of Columbia

0.3565 0.0888 0.3105 0.1050 0.0514 0.0287 0.0029 0.0023
0.0026 0.0067 0.0068 0.0095 0.0233 0.0000 0.0000 0.0050

Calvert

0.3642 0.0806 0.3071 0.1066 0.0536 0.0263 0.0027 0.0018
0.0023 0.0077 0.0048 0.0070 0.0303 0.0000 0.0000 0.0050

Charles

0.3637 0.0798 0.3077 0.1071 0.0539 0.0289 0.0030 0.0021
0.0024 0.0079 0.0064 0.0083 0.0238 0.0000 0.0000 0.0050

Fredrick

0.3543 0.0845 0.3135 0.1074 0.0527 0.0261 0.0027 0.0022
0.0024 0.0072 0.0056 0.0072 0.0295 0.0000 0.0000 0.0047

Montgomery
0.3529 0.0861 0.3138 0.1078 0.0518 0.0270 0.0026 0.0021
0.0025 0.0072 0.0059 0.0071 0.0286 0.0000 0.0000 0.0046
Prince George's
0.3598 0.0833 0.3089 0.1069 0.0533 0.0264 0.0026 0.0021
0.0024 0.0082 0.0059 0.0082 0.0270 0.0000 0.0000 0.0050
Arlington
0.3557 0.0862 0.3130 0.1066 0.0509 0.0292 0.0030 0.0024
0.0024 0.0079 0.0050 0.0092 0.0238 0.0000 0.0000 0.0047
Fairfax
0.3535 0.0858 0.3124 0.1078 0.0529 0.0258 0.0025 0.0021
0.0023 0.0071 0.0056 0.0075 0.0300 0.0000 0.0000 0.0047
Loudoun
0.3542 0.0841 0.3140 0.1074 0.0527 0.0260 0.0027 0.0022
0.0024 0.0071 0.0056 0.0073 0.0296 0.0000 0.0000 0.0047
Prince William
0.3585 0.0825 0.3101 0.1076 0.0535 0.0250 0.0027 0.0020
0.0023 0.0070 0.0059 0.0075 0.0305 0.0000 0.0000 0.0049
Alexandria
0.3585 0.0825 0.3101 0.1076 0.0535 0.0250 0.0027 0.0020
0.0023 0.0070 0.0059 0.0075 0.0305 0.0000 0.0000 0.0049

Table D-17
2009 Summer VMT Mix Fractions
For Local Analysis

District of Columbia
0.3817 0.0951 0.3324 0.1124 0.0550 0.0063 0.0006 0.0005
0.0006 0.0015 0.0015 0.0021 0.0050 0.0000 0.0000 0.0053
Calvert
0.3900 0.0863 0.3288 0.1141 0.0574 0.0057 0.0006 0.0004
0.0005 0.0017 0.0010 0.0015 0.0067 0.0000 0.0000 0.0053
Charles
0.3894 0.0854 0.3295 0.1146 0.0577 0.0063 0.0007 0.0005
0.0005 0.0017 0.0014 0.0018 0.0052 0.0000 0.0000 0.0053

Fredrick
0.3793 0.0905 0.3356 0.1150 0.0565 0.0057 0.0006 0.0005
0.0005 0.0016 0.0012 0.0016 0.0064 0.0000 0.0000 0.0050
Montgomery
0.3779 0.0922 0.3360 0.1154 0.0555 0.0059 0.0006 0.0005
0.0005 0.0016 0.0013 0.0015 0.0062 0.0000 0.0000 0.0049
Prince George's
0.3852 0.0891 0.3307 0.1144 0.0570 0.0058 0.0006 0.0005
0.0005 0.0018 0.0013 0.0018 0.0060 0.0000 0.0000 0.0053
Arlington
0.3809 0.0923 0.3351 0.1141 0.0545 0.0064 0.0006 0.0005
0.0005 0.0017 0.0011 0.0020 0.0052 0.0000 0.0000 0.0051
Fairfax
0.3785 0.0919 0.3345 0.1155 0.0566 0.0056 0.0005 0.0005
0.0005 0.0015 0.0012 0.0016 0.0066 0.0000 0.0000 0.0050
Loudoun
0.3793 0.0900 0.3362 0.1150 0.0565 0.0057 0.0006 0.0005
0.0005 0.0016 0.0012 0.0016 0.0063 0.0000 0.0000 0.0050
Prince William
0.3839 0.0883 0.3320 0.1152 0.0572 0.0055 0.0006 0.0004
0.0005 0.0015 0.0013 0.0016 0.0067 0.0000 0.0000 0.0053
Alexandria
0.3839 0.0883 0.3320 0.1152 0.0572 0.0055 0.0006 0.0004
0.0005 0.0015 0.0013 0.0016 0.0067 0.0000 0.0000 0.0053

Table D-18
2009 Summer VMT Mix Fractions
For Auto Access to Transit Analysis

District of Columbia
0.3887 0.0968 0.3386 0.1145 0.0560 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0054
Calvert
0.3971 0.0879 0.3349 0.1162 0.0585 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0054

Charles
0.3966 0.0870 0.3355 0.1168 0.0587 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0054
Fredrick
0.3863 0.0922 0.3418 0.1171 0.0575 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0051
Montgomery
0.3848 0.0939 0.3422 0.1176 0.0565 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0050
Prince George's
0.3923 0.0908 0.3368 0.1165 0.0582 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0054
Arlington
0.3879 0.0940 0.3413 0.1162 0.0554 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0052
Fairfax
0.3855 0.0936 0.3406 0.1176 0.0576 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0051
Loudoun
0.3862 0.0917 0.3424 0.1171 0.0575 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0051
Prince William
0.3909 0.0899 0.3381 0.1173 0.0584 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0054
Alexandria
0.3880 0.0898 0.3435 0.1181 0.0556 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0050

Diesel Sales Fractions

The diesel sales fractions are presented by vehicle, year-specific model year, and going back 25 model years. The order in which data for the 14 vehicle classes appear is listed below. Data are arranged in blocks, one each for a particular vehicle class. Since, the Mobile6 model assumes 25 model years of vehicles operating in a given year, each block has 25 data sets. Thus, 14 blocks of data representing

ATTACHMENT C

14 vehicle classes are provided for each jurisdiction. Fuether details can be found in the Mobile6 model user guide. Since, buses were modeled separately from other vehicles, the diesel sales fractions for the school bus analysis are also provided in this section.

* LDV
* LDT1
* LDT2
* LDT3
* LDT4
* HDV2B
* HDV3
* HDV4
* HDV5
* HDV6
* HDV7
* HDV8A
* HDV8B
* HDBS

District of Columbia—2008 Diesel Sales Fractions

0.0069 0.0069 0.0069 0.0069 0.0034 0.0033 0.0041 0.0024 0.0021 0.0031

0.0023 0.0014 0.0019 0.0018 0.0004 0.0013 0.0022 0.0052 0.0011 0.0007
0.0004 0.0254 0.0145 0.0810 0.1074
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0007 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0026 0.0000 0.0095 0.0000
0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0008 0.0055 0.0042 0.0184
0.0000 0.0000 0.0000 0.0000 0.0003 0.0000 0.0000 0.0000 0.0000 0.0004
0.0011 0.0004 0.0025 0.0074 0.0025 0.0020 0.0004 0.0066 0.0054 0.0080
0.0100 0.0080 0.0169 0.0183 0.0138
0.0000 0.0000 0.0000 0.0000 0.0008 0.0000 0.0000 0.0000 0.0006 0.0005
0.0004 0.0059 0.0132 0.0143 0.0157 0.0055 0.0093 0.0162 0.0265 0.0101
0.0042 0.0565 0.0426 0.1039 0.3571
0.2842 0.2842 0.2842 0.2842 0.2877 0.2267 0.2410 0.2146 0.1964 0.2813
0.2215 0.3259 0.2871 0.2288 0.2437 0.2892 0.1783 0.2108 0.1840 0.1704
0.1768 0.3180 0.2264 0.1842 0.1705
0.6920 0.6920 0.6920 0.6920 0.5182 0.5888 0.5212 0.5059 0.5464 0.6452
0.3770 0.4036 0.5319 0.4307 0.3971 0.4370 0.4046 0.4078 0.4022 0.3784
0.3768 0.3828 0.3850 0.1802 0.2453
0.8471 0.8471 0.8471 0.8471 0.7536 0.6021 0.5442 0.4812 0.5993 0.5740
0.5889 0.5336 0.4756 0.5749 0.3595 0.6304 0.2527 0.2874 0.3319 0.3364
0.3089 0.0588 0.0000 0.0000 0.0204
0.9489 0.9489 0.9489 0.9489 0.9324 0.9206 0.8756 0.9423 0.8398 0.7490
0.6250 0.2800 0.5227 0.3896 0.5893 0.8571 0.7241 0.6667 0.6500 0.6667
0.3333 0.6400 0.6429 0.2727 0.6667
0.9620 0.9620 0.9620 0.9620 0.8197 0.8232 0.8738 0.9151 0.8593 0.8032
0.8683 0.9441 0.9469 0.9574 0.8973 0.9304 0.6270 0.7679 0.8333 0.6154
0.6341 0.6588 0.5625 0.5833 0.5769
1.0000 1.0000 1.0000 1.0000 0.9714 1.0000 1.0000 0.9940 0.9777 0.9048
0.9191 0.8552 0.9082 0.9806 0.9244 0.9722 0.9424 0.9444 0.9078 0.8663
0.9217 0.8519 0.7363 0.8144 0.8413
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9980 0.9979 1.0000
1.0000 1.0000 1.0000 0.9969 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 0.9767 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000

ATTACHMENT C
Calvert County, MD—2008 Diesel Sales Fractions

0.0068 0.0068 0.0068 0.0068 0.0036 0.0034 0.0043 0.0025 0.0022 0.0033
0.0022 0.0013 0.0020 0.0019 0.0004 0.0013 0.0023 0.0055 0.0010 0.0007
0.0004 0.0273 0.0153 0.0837 0.1125
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0028 0.0000 0.0105 0.0000
0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0010 0.0054 0.0049 0.0197
0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000 0.0004
0.0012 0.0004 0.0028 0.0079 0.0025 0.0023 0.0005 0.0034 0.0050 0.0068
0.0109 0.0089 0.0169 0.0157 0.0154
0.0000 0.0000 0.0000 0.0000 0.0009 0.0000 0.0000 0.0000 0.0007 0.0005
0.0004 0.0065 0.0146 0.0155 0.0172 0.0059 0.0102 0.0183 0.0288 0.0116
0.0047 0.0409 0.0471 0.1212 0.3846
0.2928 0.2928 0.2928 0.2928 0.2976 0.2356 0.2420 0.2112 0.2042 0.2699
0.1572 0.3314 0.3080 0.2452 0.2608 0.3049 0.1870 0.2342 0.2041 0.1640
0.1822 0.2488 0.2290 0.1937 0.1835
0.6980 0.6980 0.6980 0.6980 0.5259 0.5592 0.5244 0.5352 0.5490 0.6704
0.3799 0.4052 0.5667 0.4346 0.4041 0.5274 0.4444 0.4184 0.4094 0.3949
0.3810 0.3972 0.4031 0.1869 0.2574
0.8471 0.8471 0.8471 0.8471 0.7544 0.6182 0.5973 0.5135 0.6372 0.5885
0.4375 0.5714 0.5261 0.6081 0.3929 0.6087 0.2828 0.3258 0.3876 0.3672
0.3452 0.0147 0.0000 0.0000 0.0256
0.9574 0.9574 0.9574 0.9574 0.9273 0.9192 0.8563 0.9392 0.8368 0.7162
0.6230 0.2394 0.4878 0.3611 0.5818 0.8529 0.7308 0.6250 0.6667 0.7692
0.3571 0.6190 0.2857 0.2500 0.6667
0.9614 0.9614 0.9614 0.9614 0.8207 0.8262 0.8649 0.9118 0.8547 0.7971
0.8663 0.9486 0.9623 0.9677 0.9380 0.9379 0.6271 0.7849 0.8396 0.5889
0.6129 0.6769 0.5333 0.5294 0.6279
1.0000 1.0000 1.0000 1.0000 0.9697 1.0000 1.0000 0.9933 0.9748 0.8961
0.9147 0.8521 0.9053 0.9774 0.9192 0.9667 0.9369 0.9470 0.9271 0.8625
0.9161 0.8403 0.7412 0.8202 0.8276
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9975 0.9978 1.0000
1.0000 1.0000 1.0000 0.9968 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 0.9759 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000

Charles County, MD—2008 Diesel Sales Fractions

0.0068 0.0068 0.0068 0.0068 0.0036 0.0034 0.0043 0.0025 0.0022 0.0033
0.0022 0.0013 0.0020 0.0019 0.0004 0.0013 0.0023 0.0055 0.0010 0.0007
0.0004 0.0273 0.0153 0.0837 0.1125
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0028 0.0000 0.0105 0.0000
0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0010 0.0054 0.0049 0.0197
0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000 0.0004
0.0012 0.0004 0.0028 0.0079 0.0025 0.0023 0.0005 0.0034 0.0050 0.0068
0.0109 0.0089 0.0169 0.0157 0.0154
0.0000 0.0000 0.0000 0.0000 0.0009 0.0000 0.0000 0.0000 0.0007 0.0005
0.0004 0.0065 0.0146 0.0155 0.0172 0.0059 0.0102 0.0183 0.0288 0.0116
0.0047 0.0409 0.0471 0.1212 0.3846
0.2928 0.2928 0.2928 0.2928 0.2976 0.2356 0.2420 0.2112 0.2042 0.2699
0.1572 0.3314 0.3080 0.2452 0.2608 0.3049 0.1870 0.2342 0.2041 0.1640
0.1822 0.2488 0.2290 0.1937 0.1835
0.6980 0.6980 0.6980 0.6980 0.5259 0.5592 0.5244 0.5352 0.5490 0.6704
0.3799 0.4052 0.5667 0.4346 0.4041 0.5274 0.4444 0.4184 0.4094 0.3949
0.3810 0.3972 0.4031 0.1869 0.2574
0.8471 0.8471 0.8471 0.8471 0.7544 0.6182 0.5973 0.5135 0.6372 0.5885
0.4375 0.5714 0.5261 0.6081 0.3929 0.6087 0.2828 0.3258 0.3876 0.3672
0.3452 0.0147 0.0000 0.0000 0.0256
0.9574 0.9574 0.9574 0.9574 0.9273 0.9192 0.8563 0.9392 0.8368 0.7162
0.6230 0.2394 0.4878 0.3611 0.5818 0.8529 0.7308 0.6250 0.6667 0.7692
0.3571 0.6190 0.2857 0.2500 0.6667
0.9614 0.9614 0.9614 0.9614 0.8207 0.8262 0.8649 0.9118 0.8547 0.7971
0.8663 0.9486 0.9623 0.9677 0.9380 0.9379 0.6271 0.7849 0.8396 0.5889
0.6129 0.6769 0.5333 0.5294 0.6279
1.0000 1.0000 1.0000 1.0000 0.9697 1.0000 1.0000 0.9933 0.9748 0.8961
0.9147 0.8521 0.9053 0.9774 0.9192 0.9667 0.9369 0.9470 0.9271 0.8625
0.9161 0.8403 0.7412 0.8202 0.8276
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9975 0.9978 1.0000
1.0000 1.0000 1.0000 0.9968 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 0.9759 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000

1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000

Frederick County, MD—2008 Diesel Sales Fractions

0.0068 0.0068 0.0068 0.0068 0.0036 0.0034 0.0043 0.0025 0.0022 0.0033
0.0022 0.0013 0.0020 0.0019 0.0004 0.0013 0.0023 0.0055 0.0010 0.0007
0.0004 0.0273 0.0153 0.0837 0.1125
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0028 0.0000 0.0105 0.0000
0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0010 0.0054 0.0049 0.0197
0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000 0.0004
0.0012 0.0004 0.0028 0.0079 0.0025 0.0023 0.0005 0.0034 0.0050 0.0068
0.0109 0.0089 0.0169 0.0157 0.0154
0.0000 0.0000 0.0000 0.0000 0.0009 0.0000 0.0000 0.0000 0.0007 0.0005
0.0004 0.0065 0.0146 0.0155 0.0172 0.0059 0.0102 0.0183 0.0288 0.0116
0.0047 0.0409 0.0471 0.1212 0.3846
0.2928 0.2928 0.2928 0.2928 0.2976 0.2356 0.2420 0.2112 0.2042 0.2699
0.1572 0.3314 0.3080 0.2452 0.2608 0.3049 0.1870 0.2342 0.2041 0.1640
0.1822 0.2488 0.2290 0.1937 0.1835
0.6980 0.6980 0.6980 0.6980 0.5259 0.5592 0.5244 0.5352 0.5490 0.6704
0.3799 0.4052 0.5667 0.4346 0.4041 0.5274 0.4444 0.4184 0.4094 0.3949
0.3810 0.3972 0.4031 0.1869 0.2574
0.8471 0.8471 0.8471 0.8471 0.7544 0.6182 0.5973 0.5135 0.6372 0.5885
0.4375 0.5714 0.5261 0.6081 0.3929 0.6087 0.2828 0.3258 0.3876 0.3672
0.3452 0.0147 0.0000 0.0000 0.0256
0.9574 0.9574 0.9574 0.9574 0.9273 0.9192 0.8563 0.9392 0.8368 0.7162
0.6230 0.2394 0.4878 0.3611 0.5818 0.8529 0.7308 0.6250 0.6667 0.7692
0.3571 0.6190 0.2857 0.2500 0.6667
0.9614 0.9614 0.9614 0.9614 0.8207 0.8262 0.8649 0.9118 0.8547 0.7971
0.8663 0.9486 0.9623 0.9677 0.9380 0.9379 0.6271 0.7849 0.8396 0.5889
0.6129 0.6769 0.5333 0.5294 0.6279
1.0000 1.0000 1.0000 1.0000 0.9697 1.0000 1.0000 0.9933 0.9748 0.8961
0.9147 0.8521 0.9053 0.9774 0.9192 0.9667 0.9369 0.9470 0.9271 0.8625
0.9161 0.8403 0.7412 0.8202 0.8276
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9975 0.9978 1.0000
1.0000 1.0000 1.0000 0.9968 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 0.9759 1.0000 1.0000
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Montgomery County, MD—2008 Diesel Sales Fractions

0.0068 0.0068 0.0068 0.0068 0.0036 0.0034 0.0043 0.0025 0.0022 0.0033
0.0022 0.0013 0.0020 0.0019 0.0004 0.0013 0.0023 0.0055 0.0010 0.0007
0.0004 0.0273 0.0153 0.0837 0.1125
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0028 0.0000 0.0105 0.0000
0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0010 0.0054 0.0049 0.0197
0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000 0.0004
0.0012 0.0004 0.0028 0.0079 0.0025 0.0023 0.0005 0.0034 0.0050 0.0068
0.0109 0.0089 0.0169 0.0157 0.0154
0.0000 0.0000 0.0000 0.0000 0.0009 0.0000 0.0000 0.0000 0.0007 0.0005
0.0004 0.0065 0.0146 0.0155 0.0172 0.0059 0.0102 0.0183 0.0288 0.0116
0.0047 0.0409 0.0471 0.1212 0.3846
0.2928 0.2928 0.2928 0.2928 0.2976 0.2356 0.2420 0.2112 0.2042 0.2699
0.1572 0.3314 0.3080 0.2452 0.2608 0.3049 0.1870 0.2342 0.2041 0.1640
0.1822 0.2488 0.2290 0.1937 0.1835
0.6980 0.6980 0.6980 0.6980 0.5259 0.5592 0.5244 0.5352 0.5490 0.6704
0.3799 0.4052 0.5667 0.4346 0.4041 0.5274 0.4444 0.4184 0.4094 0.3949
0.3810 0.3972 0.4031 0.1869 0.2574
0.8471 0.8471 0.8471 0.8471 0.7544 0.6182 0.5973 0.5135 0.6372 0.5885
0.4375 0.5714 0.5261 0.6081 0.3929 0.6087 0.2828 0.3258 0.3876 0.3672
0.3452 0.0147 0.0000 0.0000 0.0256
0.9574 0.9574 0.9574 0.9574 0.9273 0.9192 0.8563 0.9392 0.8368 0.7162
0.6230 0.2394 0.4878 0.3611 0.5818 0.8529 0.7308 0.6250 0.6667 0.7692
0.3571 0.6190 0.2857 0.2500 0.6667
0.9614 0.9614 0.9614 0.9614 0.8207 0.8262 0.8649 0.9118 0.8547 0.7971
0.8663 0.9486 0.9623 0.9677 0.9380 0.9379 0.6271 0.7849 0.8396 0.5889
0.6129 0.6769 0.5333 0.5294 0.6279
1.0000 1.0000 1.0000 1.0000 0.9697 1.0000 1.0000 0.9933 0.9748 0.8961
0.9147 0.8521 0.9053 0.9774 0.9192 0.9667 0.9369 0.9470 0.9271 0.8625
0.9161 0.8403 0.7412 0.8202 0.8276
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9975 0.9978 1.0000

1.0000 1.0000 1.0000 0.9968 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 0.9759 1.0000 1.0000
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1.0000 1.0000 1.0000 1.0000 1.0000

Prince George's County, MD—2008 Diesel Sales Fractions

0.0068 0.0068 0.0068 0.0068 0.0036 0.0034 0.0043 0.0025 0.0022 0.0033
0.0022 0.0013 0.0020 0.0019 0.0004 0.0013 0.0023 0.0055 0.0010 0.0007
0.0004 0.0273 0.0153 0.0837 0.1125
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0028 0.0000 0.0105 0.0000
0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0010 0.0054 0.0049 0.0197
0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000 0.0004
0.0012 0.0004 0.0028 0.0079 0.0025 0.0023 0.0005 0.0034 0.0050 0.0068
0.0109 0.0089 0.0169 0.0157 0.0154
0.0000 0.0000 0.0000 0.0000 0.0009 0.0000 0.0000 0.0000 0.0007 0.0005
0.0004 0.0065 0.0146 0.0155 0.0172 0.0059 0.0102 0.0183 0.0288 0.0116
0.0047 0.0409 0.0471 0.1212 0.3846
0.2928 0.2928 0.2928 0.2928 0.2976 0.2356 0.2420 0.2112 0.2042 0.2699
0.1572 0.3314 0.3080 0.2452 0.2608 0.3049 0.1870 0.2342 0.2041 0.1640
0.1822 0.2488 0.2290 0.1937 0.1835
0.6980 0.6980 0.6980 0.6980 0.5259 0.5592 0.5244 0.5352 0.5490 0.6704
0.3799 0.4052 0.5667 0.4346 0.4041 0.5274 0.4444 0.4184 0.4094 0.3949
0.3810 0.3972 0.4031 0.1869 0.2574
0.8471 0.8471 0.8471 0.8471 0.7544 0.6182 0.5973 0.5135 0.6372 0.5885
0.4375 0.5714 0.5261 0.6081 0.3929 0.6087 0.2828 0.3258 0.3876 0.3672
0.3452 0.0147 0.0000 0.0000 0.0256
0.9574 0.9574 0.9574 0.9574 0.9273 0.9192 0.8563 0.9392 0.8368 0.7162
0.6230 0.2394 0.4878 0.3611 0.5818 0.8529 0.7308 0.6250 0.6667 0.7692
0.3571 0.6190 0.2857 0.2500 0.6667
0.9614 0.9614 0.9614 0.9614 0.8207 0.8262 0.8649 0.9118 0.8547 0.7971
0.8663 0.9486 0.9623 0.9677 0.9380 0.9379 0.6271 0.7849 0.8396 0.5889
0.6129 0.6769 0.5333 0.5294 0.6279
1.0000 1.0000 1.0000 1.0000 0.9697 1.0000 1.0000 0.9933 0.9748 0.8961

0.9147 0.8521 0.9053 0.9774 0.9192 0.9667 0.9369 0.9470 0.9271 0.8625
0.9161 0.8403 0.7412 0.8202 0.8276
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9975 0.9978 1.0000
1.0000 1.0000 1.0000 0.9968 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
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Alexandria, VA—2008 Diesel Sales Fractions

0.0061 0.0061 0.0061 0.0061 0.0030 0.0027 0.0035 0.0026 0.0021 0.0026
0.0023 0.0013 0.0013 0.0014 0.0003 0.0014 0.0018 0.0038 0.0014 0.0011
0.0004 0.0219 0.0110 0.0943 0.1164
0.0113 0.0113 0.0113 0.0113 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0260 0.0135
0.0005 0.0005 0.0005 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002 0.0000
0.0000 0.0016 0.0077 0.0060 0.0279
0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000 0.0009
0.0025 0.0024 0.0017 0.0063 0.0017 0.0017 0.0022 0.0085 0.0000 0.0053
0.0130 0.0146 0.0123 0.0167 0.0262
0.0000 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0000 0.0005 0.0011
0.0020 0.0033 0.0136 0.0185 0.0244 0.0077 0.0132 0.0102 0.0615 0.0166
0.0115 0.0086 0.0962 0.0938 0.3333
0.2740 0.2740 0.2740 0.2740 0.2754 0.2338 0.2220 0.2318 0.2109 0.2679
0.1337 0.2856 0.2529 0.2250 0.2596 0.2962 0.2274 0.2827 0.2096 0.1884
0.1637 0.1926 0.2264 0.2242 0.2134
0.6954 0.6954 0.6954 0.6954 0.4717 0.5553 0.5573 0.5687 0.5525 0.5621
0.4575 0.5762 0.6158 0.4281 0.4417 0.4278 0.4882 0.4231 0.3333 0.4867
0.4851 0.5549 0.4272 0.2051 0.2794
0.8500 0.8500 0.8500 0.8500 0.7937 0.7264 0.6023 0.5402 0.5722 0.5622
0.4634 0.5071 0.4831 0.5985 0.4318 0.5496 0.4561 0.2626 0.3548 0.3740
0.3186 0.0811 0.0000 0.0294 0.0000
0.8750 0.8750 0.8750 0.8750 0.8917 0.9245 0.9379 0.9054 0.8984 0.8516
0.8667 0.4750 0.4872 0.5745 0.7667 1.0000 0.7500 0.5000 0.7143 0.5000
0.2941 0.8000 0.0000 0.2500 0.0000
0.9516 0.9516 0.9516 0.9516 0.8228 0.6755 0.7821 0.9176 0.8782 0.8046

0.8524 0.8901 0.9096 0.9200 0.9300 0.9314 0.7746 0.6667 0.6386 0.7538
0.6667 0.5692 0.3867 0.4314 0.5556
1.0000 1.0000 1.0000 1.0000 1.0000 0.9865 0.9907 1.0000 0.9651 0.9325
0.9930 0.9160 0.9540 0.9766 1.0000 0.9412 0.9545 0.9863 0.9360 0.9048
0.8433 0.8151 0.6709 0.7429 0.8222
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9914 0.9964
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 0.9744
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
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Arlington County, VA—2008 Diesel Sales Fractions

0.0061 0.0061 0.0061 0.0061 0.0030 0.0027 0.0035 0.0026 0.0021 0.0026
0.0023 0.0013 0.0013 0.0014 0.0003 0.0014 0.0018 0.0038 0.0014 0.0011
0.0004 0.0219 0.0110 0.0943 0.1164
0.0113 0.0113 0.0113 0.0113 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0260 0.0135
0.0005 0.0005 0.0005 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002 0.0000
0.0000 0.0016 0.0077 0.0060 0.0279
0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000 0.0009
0.0025 0.0024 0.0017 0.0063 0.0017 0.0017 0.0022 0.0085 0.0000 0.0053
0.0130 0.0146 0.0123 0.0167 0.0262
0.0000 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0000 0.0005 0.0011
0.0020 0.0033 0.0136 0.0185 0.0244 0.0077 0.0132 0.0102 0.0615 0.0166
0.0115 0.0086 0.0962 0.0938 0.3333
0.2740 0.2740 0.2740 0.2740 0.2754 0.2338 0.2220 0.2318 0.2109 0.2679
0.1337 0.2856 0.2529 0.2250 0.2596 0.2962 0.2274 0.2827 0.2096 0.1884
0.1637 0.1926 0.2264 0.2242 0.2134
0.6954 0.6954 0.6954 0.6954 0.4717 0.5553 0.5573 0.5687 0.5525 0.5621
0.4575 0.5762 0.6158 0.4281 0.4417 0.4278 0.4882 0.4231 0.3333 0.4867
0.4851 0.5549 0.4272 0.2051 0.2794
0.8500 0.8500 0.8500 0.8500 0.7937 0.7264 0.6023 0.5402 0.5722 0.5622
0.4634 0.5071 0.4831 0.5985 0.4318 0.5496 0.4561 0.2626 0.3548 0.3740
0.3186 0.0811 0.0000 0.0294 0.0000
0.8750 0.8750 0.8750 0.8750 0.8917 0.9245 0.9379 0.9054 0.8984 0.8516

0.8667 0.4750 0.4872 0.5745 0.7667 1.0000 0.7500 0.5000 0.7143 0.5000
0.2941 0.8000 0.0000 0.2500 0.0000
0.9516 0.9516 0.9516 0.9516 0.8228 0.6755 0.7821 0.9176 0.8782 0.8046
0.8524 0.8901 0.9096 0.9200 0.9300 0.9314 0.7746 0.6667 0.6386 0.7538
0.6667 0.5692 0.3867 0.4314 0.5556
1.0000 1.0000 1.0000 1.0000 1.0000 0.9865 0.9907 1.0000 0.9651 0.9325
0.9930 0.9160 0.9540 0.9766 1.0000 0.9412 0.9545 0.9863 0.9360 0.9048
0.8433 0.8151 0.6709 0.7429 0.8222
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9914 0.9964
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 0.9744
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
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1.0000 1.0000 1.0000 1.0000 1.0000

Fairfax County, VA—2008 Diesel Sales Fractions

0.0061 0.0061 0.0061 0.0061 0.0030 0.0027 0.0035 0.0026 0.0021 0.0026
0.0023 0.0013 0.0013 0.0014 0.0003 0.0014 0.0018 0.0038 0.0014 0.0011
0.0004 0.0219 0.0110 0.0943 0.1164
0.0113 0.0113 0.0113 0.0113 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0260 0.0135
0.0005 0.0005 0.0005 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002 0.0000
0.0000 0.0016 0.0077 0.0060 0.0279
0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000 0.0009
0.0025 0.0024 0.0017 0.0063 0.0017 0.0017 0.0022 0.0085 0.0000 0.0053
0.0130 0.0146 0.0123 0.0167 0.0262
0.0000 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0000 0.0005 0.0011
0.0020 0.0033 0.0136 0.0185 0.0244 0.0077 0.0132 0.0102 0.0615 0.0166
0.0115 0.0086 0.0962 0.0938 0.3333
0.2740 0.2740 0.2740 0.2740 0.2754 0.2338 0.2220 0.2318 0.2109 0.2679
0.1337 0.2856 0.2529 0.2250 0.2596 0.2962 0.2274 0.2827 0.2096 0.1884
0.1637 0.1926 0.2264 0.2242 0.2134
0.6954 0.6954 0.6954 0.6954 0.4717 0.5553 0.5573 0.5687 0.5525 0.5621
0.4575 0.5762 0.6158 0.4281 0.4417 0.4278 0.4882 0.4231 0.3333 0.4867
0.4851 0.5549 0.4272 0.2051 0.2794
0.8500 0.8500 0.8500 0.8500 0.7937 0.7264 0.6023 0.5402 0.5722 0.5622

0.4634 0.5071 0.4831 0.5985 0.4318 0.5496 0.4561 0.2626 0.3548 0.3740
0.3186 0.0811 0.0000 0.0294 0.0000
0.8750 0.8750 0.8750 0.8750 0.8917 0.9245 0.9379 0.9054 0.8984 0.8516
0.8667 0.4750 0.4872 0.5745 0.7667 1.0000 0.7500 0.5000 0.7143 0.5000
0.2941 0.8000 0.0000 0.2500 0.0000
0.9516 0.9516 0.9516 0.9516 0.8228 0.6755 0.7821 0.9176 0.8782 0.8046
0.8524 0.8901 0.9096 0.9200 0.9300 0.9314 0.7746 0.6667 0.6386 0.7538
0.6667 0.5692 0.3867 0.4314 0.5556
1.0000 1.0000 1.0000 1.0000 1.0000 0.9865 0.9907 1.0000 0.9651 0.9325
0.9930 0.9160 0.9540 0.9766 1.0000 0.9412 0.9545 0.9863 0.9360 0.9048
0.8433 0.8151 0.6709 0.7429 0.8222
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9914 0.9964
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 0.9744
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
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1.0000 1.0000 1.0000 1.0000 1.0000

Loudoun County, VA—2008 Diesel Sales Fractions

0.0061 0.0061 0.0061 0.0061 0.0030 0.0027 0.0035 0.0026 0.0021 0.0026
0.0023 0.0013 0.0013 0.0014 0.0003 0.0014 0.0018 0.0038 0.0014 0.0011
0.0004 0.0219 0.0110 0.0943 0.1164
0.0113 0.0113 0.0113 0.0113 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0260 0.0135
0.0005 0.0005 0.0005 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002 0.0000
0.0000 0.0016 0.0077 0.0060 0.0279
0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000 0.0009
0.0025 0.0024 0.0017 0.0063 0.0017 0.0017 0.0022 0.0085 0.0000 0.0053
0.0130 0.0146 0.0123 0.0167 0.0262
0.0000 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0000 0.0005 0.0011
0.0020 0.0033 0.0136 0.0185 0.0244 0.0077 0.0132 0.0102 0.0615 0.0166
0.0115 0.0086 0.0962 0.0938 0.3333
0.2740 0.2740 0.2740 0.2740 0.2754 0.2338 0.2220 0.2318 0.2109 0.2679
0.1337 0.2856 0.2529 0.2250 0.2596 0.2962 0.2274 0.2827 0.2096 0.1884
0.1637 0.1926 0.2264 0.2242 0.2134
0.6954 0.6954 0.6954 0.6954 0.4717 0.5553 0.5573 0.5687 0.5525 0.5621

0.4575 0.5762 0.6158 0.4281 0.4417 0.4278 0.4882 0.4231 0.3333 0.4867
0.4851 0.5549 0.4272 0.2051 0.2794
0.8500 0.8500 0.8500 0.8500 0.7937 0.7264 0.6023 0.5402 0.5722 0.5622
0.4634 0.5071 0.4831 0.5985 0.4318 0.5496 0.4561 0.2626 0.3548 0.3740
0.3186 0.0811 0.0000 0.0294 0.0000
0.8750 0.8750 0.8750 0.8750 0.8917 0.9245 0.9379 0.9054 0.8984 0.8516
0.8667 0.4750 0.4872 0.5745 0.7667 1.0000 0.7500 0.5000 0.7143 0.5000
0.2941 0.8000 0.0000 0.2500 0.0000
0.9516 0.9516 0.9516 0.9516 0.8228 0.6755 0.7821 0.9176 0.8782 0.8046
0.8524 0.8901 0.9096 0.9200 0.9300 0.9314 0.7746 0.6667 0.6386 0.7538
0.6667 0.5692 0.3867 0.4314 0.5556
1.0000 1.0000 1.0000 1.0000 1.0000 0.9865 0.9907 1.0000 0.9651 0.9325
0.9930 0.9160 0.9540 0.9766 1.0000 0.9412 0.9545 0.9863 0.9360 0.9048
0.8433 0.8151 0.6709 0.7429 0.8222
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9914 0.9964
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 1.0000 0.9744
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Prince William County, VA—2008 Diesel Sales Fractions

0.0061 0.0061 0.0061 0.0061 0.0030 0.0027 0.0035 0.0026 0.0021 0.0026
0.0023 0.0013 0.0013 0.0014 0.0003 0.0014 0.0018 0.0038 0.0014 0.0011
0.0004 0.0219 0.0110 0.0943 0.1164
0.0113 0.0113 0.0113 0.0113 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0260 0.0135
0.0005 0.0005 0.0005 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002 0.0000
0.0000 0.0016 0.0077 0.0060 0.0279
0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000 0.0009
0.0025 0.0024 0.0017 0.0063 0.0017 0.0017 0.0022 0.0085 0.0000 0.0053
0.0130 0.0146 0.0123 0.0167 0.0262
0.0000 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0000 0.0005 0.0011
0.0020 0.0033 0.0136 0.0185 0.0244 0.0077 0.0132 0.0102 0.0615 0.0166
0.0115 0.0086 0.0962 0.0938 0.3333
0.2740 0.2740 0.2740 0.2740 0.2754 0.2338 0.2220 0.2318 0.2109 0.2679

0.1337 0.2856 0.2529 0.2250 0.2596 0.2962 0.2274 0.2827 0.2096 0.1884
0.1637 0.1926 0.2264 0.2242 0.2134
0.6954 0.6954 0.6954 0.6954 0.4717 0.5553 0.5573 0.5687 0.5525 0.5621
0.4575 0.5762 0.6158 0.4281 0.4417 0.4278 0.4882 0.4231 0.3333 0.4867
0.4851 0.5549 0.4272 0.2051 0.2794
0.8500 0.8500 0.8500 0.8500 0.7937 0.7264 0.6023 0.5402 0.5722 0.5622
0.4634 0.5071 0.4831 0.5985 0.4318 0.5496 0.4561 0.2626 0.3548 0.3740
0.3186 0.0811 0.0000 0.0294 0.0000
0.8750 0.8750 0.8750 0.8750 0.8917 0.9245 0.9379 0.9054 0.8984 0.8516
0.8667 0.4750 0.4872 0.5745 0.7667 1.0000 0.7500 0.5000 0.7143 0.5000
0.2941 0.8000 0.0000 0.2500 0.0000
0.9516 0.9516 0.9516 0.9516 0.8228 0.6755 0.7821 0.9176 0.8782 0.8046
0.8524 0.8901 0.9096 0.9200 0.9300 0.9314 0.7746 0.6667 0.6386 0.7538
0.6667 0.5692 0.3867 0.4314 0.5556
1.0000 1.0000 1.0000 1.0000 1.0000 0.9865 0.9907 1.0000 0.9651 0.9325
0.9930 0.9160 0.9540 0.9766 1.0000 0.9412 0.9545 0.9863 0.9360 0.9048
0.8433 0.8151 0.6709 0.7429 0.8222
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9914 0.9964
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
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District of Columbia—2009 Diesel Sales Fractions

0.0069 0.0069 0.0069 0.0069 0.0069 0.0034 0.0033 0.0041 0.0024 0.0021
0.0031 0.0023 0.0014 0.0019 0.0018 0.0004 0.0013 0.0022 0.0052 0.0011
0.0007 0.0004 0.0254 0.0145 0.0810
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0007 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0026 0.0000 0.0095
0.0009 0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0008 0.0055 0.0042
0.0000 0.0000 0.0000 0.0000 0.0000 0.0003 0.0000 0.0000 0.0000 0.0000
0.0004 0.0011 0.0004 0.0025 0.0074 0.0025 0.0020 0.0004 0.0066 0.0054
0.0080 0.0100 0.0080 0.0169 0.0183
0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000 0.0000 0.0000 0.0006
0.0005 0.0004 0.0059 0.0132 0.0143 0.0157 0.0055 0.0093 0.0162 0.0265

0.0101 0.0042 0.0565 0.0426 0.1039
0.2842 0.2842 0.2842 0.2842 0.2842 0.2877 0.2267 0.2410 0.2146 0.1964
0.2813 0.2215 0.3259 0.2871 0.2288 0.2437 0.2892 0.1783 0.2108 0.1840
0.1704 0.1768 0.3180 0.2264 0.1842
0.6920 0.6920 0.6920 0.6920 0.6920 0.5182 0.5888 0.5212 0.5059 0.5464
0.6452 0.3770 0.4036 0.5319 0.4307 0.3971 0.4370 0.4046 0.4078 0.4022
0.3784 0.3768 0.3828 0.3850 0.1802
0.8471 0.8471 0.8471 0.8471 0.8471 0.7536 0.6021 0.5442 0.4812 0.5993
0.5740 0.5889 0.5336 0.4756 0.5749 0.3595 0.6304 0.2527 0.2874 0.3319
0.3364 0.3089 0.0588 0.0000 0.0000
0.9489 0.9489 0.9489 0.9489 0.9489 0.9324 0.9206 0.8756 0.9423 0.8398
0.7490 0.6250 0.2800 0.5227 0.3896 0.5893 0.8571 0.7241 0.6667 0.6500
0.6667 0.3333 0.6400 0.6429 0.2727
0.9620 0.9620 0.9620 0.9620 0.9620 0.8197 0.8232 0.8738 0.9151 0.8593
0.8032 0.8683 0.9441 0.9469 0.9574 0.8973 0.9304 0.6270 0.7679 0.8333
0.6154 0.6341 0.6588 0.5625 0.5833
1.0000 1.0000 1.0000 1.0000 1.0000 0.9714 1.0000 1.0000 0.9940 0.9777
0.9048 0.9191 0.8552 0.9082 0.9806 0.9244 0.9722 0.9424 0.9444 0.9078
0.8663 0.9217 0.8519 0.7363 0.8144
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9980 0.9979
1.0000 1.0000 1.0000 1.0000 0.9969 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 0.9767 1.0000
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Calvert County, MD—2009 Diesel Sales Fractions

0.0068 0.0068 0.0068 0.0068 0.0068 0.0036 0.0034 0.0043 0.0025 0.0022
0.0033 0.0022 0.0013 0.0020 0.0019 0.0004 0.0013 0.0023 0.0055 0.0010
0.0007 0.0004 0.0273 0.0153 0.0837
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0028 0.0000 0.0105
0.0009 0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0010 0.0054 0.0049
0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000
0.0004 0.0012 0.0004 0.0028 0.0079 0.0025 0.0023 0.0005 0.0034 0.0050

0.0068 0.0109 0.0089 0.0169 0.0157
0.0000 0.0000 0.0000 0.0000 0.0000 0.0009 0.0000 0.0000 0.0000 0.0007
0.0005 0.0004 0.0065 0.0146 0.0155 0.0172 0.0059 0.0102 0.0183 0.0288
0.0116 0.0047 0.0409 0.0471 0.1212
0.2928 0.2928 0.2928 0.2928 0.2928 0.2976 0.2356 0.2420 0.2112 0.2042
0.2699 0.1572 0.3314 0.3080 0.2452 0.2608 0.3049 0.1870 0.2342 0.2041
0.1640 0.1822 0.2488 0.2290 0.1937
0.6980 0.6980 0.6980 0.6980 0.6980 0.5259 0.5592 0.5244 0.5352 0.5490
0.6704 0.3799 0.4052 0.5667 0.4346 0.4041 0.5274 0.4444 0.4184 0.4094
0.3949 0.3810 0.3972 0.4031 0.1869
0.8471 0.8471 0.8471 0.8471 0.8471 0.7544 0.6182 0.5973 0.5135 0.6372
0.5885 0.4375 0.5714 0.5261 0.6081 0.3929 0.6087 0.2828 0.3258 0.3876
0.3672 0.3452 0.0147 0.0000 0.0000
0.9574 0.9574 0.9574 0.9574 0.9574 0.9273 0.9192 0.8563 0.9392 0.8368
0.7162 0.6230 0.2394 0.4878 0.3611 0.5818 0.8529 0.7308 0.6250 0.6667
0.7692 0.3571 0.6190 0.2857 0.2500
0.9614 0.9614 0.9614 0.9614 0.9614 0.8207 0.8262 0.8649 0.9118 0.8547
0.7971 0.8663 0.9486 0.9623 0.9677 0.9380 0.9379 0.6271 0.7849 0.8396
0.5889 0.6129 0.6769 0.5333 0.5294
1.0000 1.0000 1.0000 1.0000 1.0000 0.9697 1.0000 1.0000 0.9933 0.9748
0.8961 0.9147 0.8521 0.9053 0.9774 0.9192 0.9667 0.9369 0.9470 0.9271
0.8625 0.9161 0.8403 0.7412 0.8202
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9975 0.9978
1.0000 1.0000 1.0000 1.0000 0.9968 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 0.9759 1.0000
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Charles County, MD—2009 Diesel Sales Fractions

0.0068 0.0068 0.0068 0.0068 0.0068 0.0036 0.0034 0.0043 0.0025 0.0022
0.0033 0.0022 0.0013 0.0020 0.0019 0.0004 0.0013 0.0023 0.0055 0.0010
0.0007 0.0004 0.0273 0.0153 0.0837
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0028 0.0000 0.0105
0.0009 0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

0.0000 0.0000 0.0010 0.0054 0.0049
0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000
0.0004 0.0012 0.0004 0.0028 0.0079 0.0025 0.0023 0.0005 0.0034 0.0050
0.0068 0.0109 0.0089 0.0169 0.0157
0.0000 0.0000 0.0000 0.0000 0.0000 0.0009 0.0000 0.0000 0.0000 0.0007
0.0005 0.0004 0.0065 0.0146 0.0155 0.0172 0.0059 0.0102 0.0183 0.0288
0.0116 0.0047 0.0409 0.0471 0.1212
0.2928 0.2928 0.2928 0.2928 0.2928 0.2976 0.2356 0.2420 0.2112 0.2042
0.2699 0.1572 0.3314 0.3080 0.2452 0.2608 0.3049 0.1870 0.2342 0.2041
0.1640 0.1822 0.2488 0.2290 0.1937
0.6980 0.6980 0.6980 0.6980 0.6980 0.5259 0.5592 0.5244 0.5352 0.5490
0.6704 0.3799 0.4052 0.5667 0.4346 0.4041 0.5274 0.4444 0.4184 0.4094
0.3949 0.3810 0.3972 0.4031 0.1869
0.8471 0.8471 0.8471 0.8471 0.8471 0.7544 0.6182 0.5973 0.5135 0.6372
0.5885 0.4375 0.5714 0.5261 0.6081 0.3929 0.6087 0.2828 0.3258 0.3876
0.3672 0.3452 0.0147 0.0000 0.0000
0.9574 0.9574 0.9574 0.9574 0.9574 0.9273 0.9192 0.8563 0.9392 0.8368
0.7162 0.6230 0.2394 0.4878 0.3611 0.5818 0.8529 0.7308 0.6250 0.6667
0.7692 0.3571 0.6190 0.2857 0.2500
0.9614 0.9614 0.9614 0.9614 0.9614 0.8207 0.8262 0.8649 0.9118 0.8547
0.7971 0.8663 0.9486 0.9623 0.9677 0.9380 0.9379 0.6271 0.7849 0.8396
0.5889 0.6129 0.6769 0.5333 0.5294
1.0000 1.0000 1.0000 1.0000 1.0000 0.9697 1.0000 1.0000 0.9933 0.9748
0.8961 0.9147 0.8521 0.9053 0.9774 0.9192 0.9667 0.9369 0.9470 0.9271
0.8625 0.9161 0.8403 0.7412 0.8202
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9975 0.9978
1.0000 1.0000 1.0000 1.0000 0.9968 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 0.9759 1.0000
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Frederick County, MD—2009 Diesel Sales Fractions

0.0068 0.0068 0.0068 0.0068 0.0068 0.0036 0.0034 0.0043 0.0025 0.0022
0.0033 0.0022 0.0013 0.0020 0.0019 0.0004 0.0013 0.0023 0.0055 0.0010
0.0007 0.0004 0.0273 0.0153 0.0837
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

0.0000 0.0000 0.0028 0.0000 0.0105
0.0009 0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0010 0.0054 0.0049
0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000
0.0004 0.0012 0.0004 0.0028 0.0079 0.0025 0.0023 0.0005 0.0034 0.0050
0.0068 0.0109 0.0089 0.0169 0.0157
0.0000 0.0000 0.0000 0.0000 0.0000 0.0009 0.0000 0.0000 0.0000 0.0007
0.0005 0.0004 0.0065 0.0146 0.0155 0.0172 0.0059 0.0102 0.0183 0.0288
0.0116 0.0047 0.0409 0.0471 0.1212
0.2928 0.2928 0.2928 0.2928 0.2928 0.2976 0.2356 0.2420 0.2112 0.2042
0.2699 0.1572 0.3314 0.3080 0.2452 0.2608 0.3049 0.1870 0.2342 0.2041
0.1640 0.1822 0.2488 0.2290 0.1937
0.6980 0.6980 0.6980 0.6980 0.6980 0.5259 0.5592 0.5244 0.5352 0.5490
0.6704 0.3799 0.4052 0.5667 0.4346 0.4041 0.5274 0.4444 0.4184 0.4094
0.3949 0.3810 0.3972 0.4031 0.1869
0.8471 0.8471 0.8471 0.8471 0.8471 0.7544 0.6182 0.5973 0.5135 0.6372
0.5885 0.4375 0.5714 0.5261 0.6081 0.3929 0.6087 0.2828 0.3258 0.3876
0.3672 0.3452 0.0147 0.0000 0.0000
0.9574 0.9574 0.9574 0.9574 0.9574 0.9273 0.9192 0.8563 0.9392 0.8368
0.7162 0.6230 0.2394 0.4878 0.3611 0.5818 0.8529 0.7308 0.6250 0.6667
0.7692 0.3571 0.6190 0.2857 0.2500
0.9614 0.9614 0.9614 0.9614 0.9614 0.8207 0.8262 0.8649 0.9118 0.8547
0.7971 0.8663 0.9486 0.9623 0.9677 0.9380 0.9379 0.6271 0.7849 0.8396
0.5889 0.6129 0.6769 0.5333 0.5294
1.0000 1.0000 1.0000 1.0000 1.0000 0.9697 1.0000 1.0000 0.9933 0.9748
0.8961 0.9147 0.8521 0.9053 0.9774 0.9192 0.9667 0.9369 0.9470 0.9271
0.8625 0.9161 0.8403 0.7412 0.8202
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9975 0.9978
1.0000 1.0000 1.0000 1.0000 0.9968 1.0000 1.0000 1.0000 1.0000 1.0000
1.0000 1.0000 1.0000 0.9759 1.0000
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Montgomery County, MD—2009 Diesel Sales Fractions

0.0068 0.0068 0.0068 0.0068 0.0068 0.0036 0.0034 0.0043 0.0025 0.0022
0.0033 0.0022 0.0013 0.0020 0.0019 0.0004 0.0013 0.0023 0.0055 0.0010

0.0007 0.0004 0.0273 0.0153 0.0837
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0028 0.0000 0.0105
0.0009 0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0010 0.0054 0.0049
0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000
0.0004 0.0012 0.0004 0.0028 0.0079 0.0025 0.0023 0.0005 0.0034 0.0050
0.0068 0.0109 0.0089 0.0169 0.0157
0.0000 0.0000 0.0000 0.0000 0.0000 0.0009 0.0000 0.0000 0.0000 0.0007
0.0005 0.0004 0.0065 0.0146 0.0155 0.0172 0.0059 0.0102 0.0183 0.0288
0.0116 0.0047 0.0409 0.0471 0.1212
0.2928 0.2928 0.2928 0.2928 0.2928 0.2976 0.2356 0.2420 0.2112 0.2042
0.2699 0.1572 0.3314 0.3080 0.2452 0.2608 0.3049 0.1870 0.2342 0.2041
0.1640 0.1822 0.2488 0.2290 0.1937
0.6980 0.6980 0.6980 0.6980 0.6980 0.5259 0.5592 0.5244 0.5352 0.5490
0.6704 0.3799 0.4052 0.5667 0.4346 0.4041 0.5274 0.4444 0.4184 0.4094
0.3949 0.3810 0.3972 0.4031 0.1869
0.8471 0.8471 0.8471 0.8471 0.8471 0.7544 0.6182 0.5973 0.5135 0.6372
0.5885 0.4375 0.5714 0.5261 0.6081 0.3929 0.6087 0.2828 0.3258 0.3876
0.3672 0.3452 0.0147 0.0000 0.0000
0.9574 0.9574 0.9574 0.9574 0.9574 0.9273 0.9192 0.8563 0.9392 0.8368
0.7162 0.6230 0.2394 0.4878 0.3611 0.5818 0.8529 0.7308 0.6250 0.6667
0.7692 0.3571 0.6190 0.2857 0.2500
0.9614 0.9614 0.9614 0.9614 0.9614 0.8207 0.8262 0.8649 0.9118 0.8547
0.7971 0.8663 0.9486 0.9623 0.9677 0.9380 0.9379 0.6271 0.7849 0.8396
0.5889 0.6129 0.6769 0.5333 0.5294
1.0000 1.0000 1.0000 1.0000 1.0000 0.9697 1.0000 1.0000 0.9933 0.9748
0.8961 0.9147 0.8521 0.9053 0.9774 0.9192 0.9667 0.9369 0.9470 0.9271
0.8625 0.9161 0.8403 0.7412 0.8202
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9975 0.9978
1.0000 1.0000 1.0000 1.0000 0.9968 1.0000 1.0000 1.0000 1.0000 1.0000
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0.0068 0.0068 0.0068 0.0068 0.0068 0.0036 0.0034 0.0043 0.0025 0.0022
0.0033 0.0022 0.0013 0.0020 0.0019 0.0004 0.0013 0.0023 0.0055 0.0010
0.0007 0.0004 0.0273 0.0153 0.0837
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0028 0.0000 0.0105
0.0009 0.0009 0.0009 0.0009 0.0009 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0010 0.0054 0.0049
0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000 0.0000
0.0004 0.0012 0.0004 0.0028 0.0079 0.0025 0.0023 0.0005 0.0034 0.0050
0.0068 0.0109 0.0089 0.0169 0.0157
0.0000 0.0000 0.0000 0.0000 0.0000 0.0009 0.0000 0.0000 0.0000 0.0007
0.0005 0.0004 0.0065 0.0146 0.0155 0.0172 0.0059 0.0102 0.0183 0.0288
0.0116 0.0047 0.0409 0.0471 0.1212
0.2928 0.2928 0.2928 0.2928 0.2928 0.2976 0.2356 0.2420 0.2112 0.2042
0.2699 0.1572 0.3314 0.3080 0.2452 0.2608 0.3049 0.1870 0.2342 0.2041
0.1640 0.1822 0.2488 0.2290 0.1937
0.6980 0.6980 0.6980 0.6980 0.6980 0.5259 0.5592 0.5244 0.5352 0.5490
0.6704 0.3799 0.4052 0.5667 0.4346 0.4041 0.5274 0.4444 0.4184 0.4094
0.3949 0.3810 0.3972 0.4031 0.1869
0.8471 0.8471 0.8471 0.8471 0.8471 0.7544 0.6182 0.5973 0.5135 0.6372
0.5885 0.4375 0.5714 0.5261 0.6081 0.3929 0.6087 0.2828 0.3258 0.3876
0.3672 0.3452 0.0147 0.0000 0.0000
0.9574 0.9574 0.9574 0.9574 0.9574 0.9273 0.9192 0.8563 0.9392 0.8368
0.7162 0.6230 0.2394 0.4878 0.3611 0.5818 0.8529 0.7308 0.6250 0.6667
0.7692 0.3571 0.6190 0.2857 0.2500
0.9614 0.9614 0.9614 0.9614 0.9614 0.8207 0.8262 0.8649 0.9118 0.8547
0.7971 0.8663 0.9486 0.9623 0.9677 0.9380 0.9379 0.6271 0.7849 0.8396
0.5889 0.6129 0.6769 0.5333 0.5294
1.0000 1.0000 1.0000 1.0000 1.0000 0.9697 1.0000 1.0000 0.9933 0.9748
0.8961 0.9147 0.8521 0.9053 0.9774 0.9192 0.9667 0.9369 0.9470 0.9271
0.8625 0.9161 0.8403 0.7412 0.8202
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9975 0.9978
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ATTACHMENT C

Alexandria, VA—2009 Diesel Sales Fractions

0.0061 0.0061 0.0061 0.0061 0.0061 0.0030 0.0027 0.0035 0.0026 0.0021
0.0026 0.0023 0.0013 0.0013 0.0014 0.0003 0.0014 0.0018 0.0038 0.0014
0.0011 0.0004 0.0219 0.0110 0.0943
0.0113 0.0113 0.0113 0.0113 0.0113 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0260
0.0005 0.0005 0.0005 0.0005 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002
0.0000 0.0000 0.0016 0.0077 0.0060
0.0000 0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000
0.0009 0.0025 0.0024 0.0017 0.0063 0.0017 0.0017 0.0022 0.0085 0.0000
0.0053 0.0130 0.0146 0.0123 0.0167
0.0000 0.0000 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0000 0.0005
0.0011 0.0020 0.0033 0.0136 0.0185 0.0244 0.0077 0.0132 0.0102 0.0615
0.0166 0.0115 0.0086 0.0962 0.0938
0.2740 0.2740 0.2740 0.2740 0.2740 0.2754 0.2338 0.2220 0.2318 0.2109
0.2679 0.1337 0.2856 0.2529 0.2250 0.2596 0.2962 0.2274 0.2827 0.2096
0.1884 0.1637 0.1926 0.2264 0.2242
0.6954 0.6954 0.6954 0.6954 0.6954 0.4717 0.5553 0.5573 0.5687 0.5525
0.5621 0.4575 0.5762 0.6158 0.4281 0.4417 0.4278 0.4882 0.4231 0.3333
0.4867 0.4851 0.5549 0.4272 0.2051
0.8500 0.8500 0.8500 0.8500 0.8500 0.7937 0.7264 0.6023 0.5402 0.5722
0.5622 0.4634 0.5071 0.4831 0.5985 0.4318 0.5496 0.4561 0.2626 0.3548
0.3740 0.3186 0.0811 0.0000 0.0294
0.8750 0.8750 0.8750 0.8750 0.8750 0.8917 0.9245 0.9379 0.9054 0.8984
0.8516 0.8667 0.4750 0.4872 0.5745 0.7667 1.0000 0.7500 0.5000 0.7143
0.5000 0.2941 0.8000 0.0000 0.2500
0.9516 0.9516 0.9516 0.9516 0.9516 0.8228 0.6755 0.7821 0.9176 0.8782
0.8046 0.8524 0.8901 0.9096 0.9200 0.9300 0.9314 0.7746 0.6667 0.6386
0.7538 0.6667 0.5692 0.3867 0.4314
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9865 0.9907 1.0000 0.9651
0.9325 0.9930 0.9160 0.9540 0.9766 1.0000 0.9412 0.9545 0.9863 0.9360
0.9048 0.8433 0.8151 0.6709 0.7429
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9914
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Arlington County, VA—2009 Diesel Sales Fractions

0.0061 0.0061 0.0061 0.0061 0.0061 0.0030 0.0027 0.0035 0.0026 0.0021
0.0026 0.0023 0.0013 0.0013 0.0014 0.0003 0.0014 0.0018 0.0038 0.0014
0.0011 0.0004 0.0219 0.0110 0.0943
0.0113 0.0113 0.0113 0.0113 0.0113 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0260
0.0005 0.0005 0.0005 0.0005 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002
0.0000 0.0000 0.0016 0.0077 0.0060
0.0000 0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000
0.0009 0.0025 0.0024 0.0017 0.0063 0.0017 0.0017 0.0022 0.0085 0.0000
0.0053 0.0130 0.0146 0.0123 0.0167
0.0000 0.0000 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0000 0.0005
0.0011 0.0020 0.0033 0.0136 0.0185 0.0244 0.0077 0.0132 0.0102 0.0615
0.0166 0.0115 0.0086 0.0962 0.0938
0.2740 0.2740 0.2740 0.2740 0.2740 0.2754 0.2338 0.2220 0.2318 0.2109
0.2679 0.1337 0.2856 0.2529 0.2250 0.2596 0.2962 0.2274 0.2827 0.2096
0.1884 0.1637 0.1926 0.2264 0.2242
0.6954 0.6954 0.6954 0.6954 0.6954 0.4717 0.5553 0.5573 0.5687 0.5525
0.5621 0.4575 0.5762 0.6158 0.4281 0.4417 0.4278 0.4882 0.4231 0.3333
0.4867 0.4851 0.5549 0.4272 0.2051
0.8500 0.8500 0.8500 0.8500 0.8500 0.7937 0.7264 0.6023 0.5402 0.5722
0.5622 0.4634 0.5071 0.4831 0.5985 0.4318 0.5496 0.4561 0.2626 0.3548
0.3740 0.3186 0.0811 0.0000 0.0294
0.8750 0.8750 0.8750 0.8750 0.8750 0.8917 0.9245 0.9379 0.9054 0.8984
0.8516 0.8667 0.4750 0.4872 0.5745 0.7667 1.0000 0.7500 0.5000 0.7143
0.5000 0.2941 0.8000 0.0000 0.2500
0.9516 0.9516 0.9516 0.9516 0.9516 0.8228 0.6755 0.7821 0.9176 0.8782
0.8046 0.8524 0.8901 0.9096 0.9200 0.9300 0.9314 0.7746 0.6667 0.6386
0.7538 0.6667 0.5692 0.3867 0.4314
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9865 0.9907 1.0000 0.9651
0.9325 0.9930 0.9160 0.9540 0.9766 1.0000 0.9412 0.9545 0.9863 0.9360
0.9048 0.8433 0.8151 0.6709 0.7429
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9914
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Fairfax County, VA—2009 Diesel Sales Fractions

0.0061 0.0061 0.0061 0.0061 0.0061 0.0030 0.0027 0.0035 0.0026 0.0021
0.0026 0.0023 0.0013 0.0013 0.0014 0.0003 0.0014 0.0018 0.0038 0.0014
0.0011 0.0004 0.0219 0.0110 0.0943
0.0113 0.0113 0.0113 0.0113 0.0113 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0260
0.0005 0.0005 0.0005 0.0005 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002
0.0000 0.0000 0.0016 0.0077 0.0060
0.0000 0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000
0.0009 0.0025 0.0024 0.0017 0.0063 0.0017 0.0017 0.0022 0.0085 0.0000
0.0053 0.0130 0.0146 0.0123 0.0167
0.0000 0.0000 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0000 0.0005
0.0011 0.0020 0.0033 0.0136 0.0185 0.0244 0.0077 0.0132 0.0102 0.0615
0.0166 0.0115 0.0086 0.0962 0.0938
0.2740 0.2740 0.2740 0.2740 0.2740 0.2754 0.2338 0.2220 0.2318 0.2109
0.2679 0.1337 0.2856 0.2529 0.2250 0.2596 0.2962 0.2274 0.2827 0.2096
0.1884 0.1637 0.1926 0.2264 0.2242
0.6954 0.6954 0.6954 0.6954 0.6954 0.4717 0.5553 0.5573 0.5687 0.5525
0.5621 0.4575 0.5762 0.6158 0.4281 0.4417 0.4278 0.4882 0.4231 0.3333
0.4867 0.4851 0.5549 0.4272 0.2051
0.8500 0.8500 0.8500 0.8500 0.8500 0.7937 0.7264 0.6023 0.5402 0.5722
0.5622 0.4634 0.5071 0.4831 0.5985 0.4318 0.5496 0.4561 0.2626 0.3548
0.3740 0.3186 0.0811 0.0000 0.0294
0.8750 0.8750 0.8750 0.8750 0.8750 0.8917 0.9245 0.9379 0.9054 0.8984
0.8516 0.8667 0.4750 0.4872 0.5745 0.7667 1.0000 0.7500 0.5000 0.7143
0.5000 0.2941 0.8000 0.0000 0.2500
0.9516 0.9516 0.9516 0.9516 0.9516 0.8228 0.6755 0.7821 0.9176 0.8782
0.8046 0.8524 0.8901 0.9096 0.9200 0.9300 0.9314 0.7746 0.6667 0.6386
0.7538 0.6667 0.5692 0.3867 0.4314
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9865 0.9907 1.0000 0.9651
0.9325 0.9930 0.9160 0.9540 0.9766 1.0000 0.9412 0.9545 0.9863 0.9360
0.9048 0.8433 0.8151 0.6709 0.7429
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9914
0.9964 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
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Loudoun County, VA—2009 Diesel Sales Fractions

0.0061 0.0061 0.0061 0.0061 0.0061 0.0030 0.0027 0.0035 0.0026 0.0021
0.0026 0.0023 0.0013 0.0013 0.0014 0.0003 0.0014 0.0018 0.0038 0.0014
0.0011 0.0004 0.0219 0.0110 0.0943
0.0113 0.0113 0.0113 0.0113 0.0113 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0260
0.0005 0.0005 0.0005 0.0005 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002
0.0000 0.0000 0.0016 0.0077 0.0060
0.0000 0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000
0.0009 0.0025 0.0024 0.0017 0.0063 0.0017 0.0017 0.0022 0.0085 0.0000
0.0053 0.0130 0.0146 0.0123 0.0167
0.0000 0.0000 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0000 0.0005
0.0011 0.0020 0.0033 0.0136 0.0185 0.0244 0.0077 0.0132 0.0102 0.0615
0.0166 0.0115 0.0086 0.0962 0.0938
0.2740 0.2740 0.2740 0.2740 0.2740 0.2754 0.2338 0.2220 0.2318 0.2109
0.2679 0.1337 0.2856 0.2529 0.2250 0.2596 0.2962 0.2274 0.2827 0.2096
0.1884 0.1637 0.1926 0.2264 0.2242
0.6954 0.6954 0.6954 0.6954 0.6954 0.4717 0.5553 0.5573 0.5687 0.5525
0.5621 0.4575 0.5762 0.6158 0.4281 0.4417 0.4278 0.4882 0.4231 0.3333
0.4867 0.4851 0.5549 0.4272 0.2051
0.8500 0.8500 0.8500 0.8500 0.8500 0.7937 0.7264 0.6023 0.5402 0.5722
0.5622 0.4634 0.5071 0.4831 0.5985 0.4318 0.5496 0.4561 0.2626 0.3548
0.3740 0.3186 0.0811 0.0000 0.0294
0.8750 0.8750 0.8750 0.8750 0.8750 0.8917 0.9245 0.9379 0.9054 0.8984
0.8516 0.8667 0.4750 0.4872 0.5745 0.7667 1.0000 0.7500 0.5000 0.7143
0.5000 0.2941 0.8000 0.0000 0.2500
0.9516 0.9516 0.9516 0.9516 0.9516 0.8228 0.6755 0.7821 0.9176 0.8782
0.8046 0.8524 0.8901 0.9096 0.9200 0.9300 0.9314 0.7746 0.6667 0.6386
0.7538 0.6667 0.5692 0.3867 0.4314
1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9865 0.9907 1.0000 0.9651
0.9325 0.9930 0.9160 0.9540 0.9766 1.0000 0.9412 0.9545 0.9863 0.9360
0.9048 0.8433 0.8151 0.6709 0.7429

1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9914
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Prince William County, VA—2009 Diesel Sales Fractions

0.0061 0.0061 0.0061 0.0061 0.0061 0.0030 0.0027 0.0035 0.0026 0.0021
0.0026 0.0023 0.0013 0.0013 0.0014 0.0003 0.0014 0.0018 0.0038 0.0014
0.0011 0.0004 0.0219 0.0110 0.0943
0.0113 0.0113 0.0113 0.0113 0.0113 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0260
0.0005 0.0005 0.0005 0.0005 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000
0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002
0.0000 0.0000 0.0016 0.0077 0.0060
0.0000 0.0000 0.0000 0.0000 0.0000 0.0006 0.0000 0.0000 0.0000 0.0000
0.0009 0.0025 0.0024 0.0017 0.0063 0.0017 0.0017 0.0022 0.0085 0.0000
0.0053 0.0130 0.0146 0.0123 0.0167
0.0000 0.0000 0.0000 0.0000 0.0000 0.0013 0.0000 0.0000 0.0000 0.0005
0.0011 0.0020 0.0033 0.0136 0.0185 0.0244 0.0077 0.0132 0.0102 0.0615
0.0166 0.0115 0.0086 0.0962 0.0938
0.2740 0.2740 0.2740 0.2740 0.2740 0.2754 0.2338 0.2220 0.2318 0.2109
0.2679 0.1337 0.2856 0.2529 0.2250 0.2596 0.2962 0.2274 0.2827 0.2096
0.1884 0.1637 0.1926 0.2264 0.2242
0.6954 0.6954 0.6954 0.6954 0.6954 0.4717 0.5553 0.5573 0.5687 0.5525
0.5621 0.4575 0.5762 0.6158 0.4281 0.4417 0.4278 0.4882 0.4231 0.3333
0.4867 0.4851 0.5549 0.4272 0.2051
0.8500 0.8500 0.8500 0.8500 0.8500 0.7937 0.7264 0.6023 0.5402 0.5722
0.5622 0.4634 0.5071 0.4831 0.5985 0.4318 0.5496 0.4561 0.2626 0.3548
0.3740 0.3186 0.0811 0.0000 0.0294
0.8750 0.8750 0.8750 0.8750 0.8750 0.8917 0.9245 0.9379 0.9054 0.8984
0.8516 0.8667 0.4750 0.4872 0.5745 0.7667 1.0000 0.7500 0.5000 0.7143
0.5000 0.2941 0.8000 0.0000 0.2500
0.9516 0.9516 0.9516 0.9516 0.9516 0.8228 0.6755 0.7821 0.9176 0.8782
0.8046 0.8524 0.8901 0.9096 0.9200 0.9300 0.9314 0.7746 0.6667 0.6386
0.7538 0.6667 0.5692 0.3867 0.4314

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0.9325 0.9930 0.9160 0.9540 0.9766 1.0000 0.9412 0.9545 0.9863 0.9360

0.9048 0.8433 0.8151 0.6709 0.7429

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School Bus—Regional Diesel Sales Fractions

(Valid for all years)

* All Other Vehicle Categories

0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000					

* HDBS

1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1.0000	1.0000	1.0000	1.0000	1.0000					

ATTACHMENT D

ATTACHMENT D

MEMORANDUM

TO: Files

FROM: Ronald Milone

DATE: September 19, 2006

SUBJECT: Mobile Emissions Post-Processor Description and Results

1.0 Introduction

This memorandum describes the mobile emissions post-processor used to support the Air Quality Conformity Determination of the 2006 CLRP and the FY2007-2012 TIP. The post-processor is a series of TP+ scripts that are used to calculate regional mobile source emissions. The emissions are developed on the basis of travel demand information produced by the regional travel demand model and emission rates produced from the EPA mandated Mobile model. The TPB's currently adopted travel model is known as the Version 2.1 D Draft #50 (September 2006). The current Mobile program is version 6.2.03 (September 2003). The post-processor computes mobile emissions in terms of volatile organic compounds (VOC/HC), carbon monoxide (CO), oxides of nitrogen (NOx), and fine particulates (PM2.5) which include NOx precursors. The post-processor computes average *daily* VOC, CO, and NOx emissions for both wintertime and summer seasons. It is also used to compute *annual* NOx precursor and PM2.5 emissions.

The post-processor computes mobile emissions attributable to *modeled* trips and VMT. It is also used to compute emissions of local, or off-network, traffic. These account for most, but not all, of mobile emissions that occur on a given day. Other off-network sources include vehicle-related (diurnal and resting loss) emissions as well as emissions relating to buses, and park-and-ride travel, which are computed using off-line procedures. These types of emission calculations are not addressed in this memorandum.

2.0 Post-Processor Overview

Mobile emissions are computed essentially by multiplying a unit of travel, as produced by the travel demand model, by an associated emission rate, as developed by the Mobile 6 model. The TPB emissions forecasts are based on computations for each stage of the trip cycle. In other words, *per trip* rates are developed to compute starting and soaking emissions, while *per mile* rates are developed to compute hot-stabilized (or running) emissions. Table 1 shows greater detail regarding the generalized emission calculation by trip cycle and pollutant. It is important to note that the emission rates are developed for specific seasons because weather conditions are important factors used in the emissions model. Since the regional travel demand model develops forecasts in terms of average annual weekday (AAWDT) conditions, seasonal factors are applied to the travel model data to be consistent with the seasonal emissions rate. Table 2 shows the conversion factors, which were developed based on local permanent count data. Seasonal

adjustments are currently applied only to network link VMT. At present, there are no such conversion factors applied to modeled vehicle trips which are used to develop starting or soak emissions.

Table 1: Summary of Mobile Emissions Calculation by Emission Type and Pollutant

Emission Type	Pollutant	Emission Rate Description	Travel Unit Description	How Emissions are Computed
Running/ On-Network	VOC CO NOx	gm/mile, by jurisdiction, facility type and speed	Vehicle miles	Emission rate * travel unit, computed at network link level, by hour of day
	PM2.5	gm/mile, by jurisdiction	vehicle miles	Emission rate * travel unit, computed at network link level
Start-Up	VOC CO NOx	gm/trip, by jurisdiction and engine condition (hot/cold)	Vehicle starts	Emission rate * travel unit, computed at TAZ level, by hour of day
Soak	VOC	gm/trip, by jurisdiction	Vehicle stops	Emission rate * travel unit, computed at TAZ level
Running / Local (Off-Network)	VOC CO NOx	gm/mile, by jurisdiction in urbanized areas; by jurisdiction and speed in rural areas	vehicle miles	Emission rate * travel unit, computed at jurisdiction level, stratified by urban and rural areas; rural areas are further stratified by speed ranges
	PM2.5	gm/mile, by jurisdiction	vehicle miles	Emission rate * travel unit, Computed at jurisdiction level

Table 2: Conversion Factors for Converting AAWDT to Seasonal Travel

Analysis Period	Pollutants Analyzed	Duration of Seasonal Period	Conversion Factor Applied to AAWDT	Result of Conversion
Summer / Ozone Season	VOC NOx	May to September	1.05	Seasonal AAWDT
Wintertime Season	CO	December to February	0.97	Seasonal AAWDT
Annual Total (sum of 3 seasons)	PM2.5 NOx precursor	January to April	0.92	Seasonal ADT
		May to September	0.99	Seasonal ADT
		October to December	0.93	Seasonal ADT

Table 2 also indicates the key pollutants of interest in the Washington, D.C. region vary by season. VOC and NOx emissions are most severe during the summer season while CO emissions are highest during the winter. PM 2.5 and NOx precursor emissions are developed as annualized figures based on the sum of three separate seasonal computations.

3.0 Mobile 6 Rates

Table 1 indicates that the emission rates are developed on a jurisdictional basis. This is done because many parameters used the Mobile 6 model vary by location, for example, inspection and maintenance programs, vehicle fleet mix, etc. Emission rates are currently prepared for 16 individual jurisdictions which are listed in Table 3. These include jurisdictions both in and around the non-attainment area. The table indicates that the 16 sets of modeled emission rates

are ultimately applied to reflect 27 jurisdictions (or external stations) using 'nearest-neighbor' assumptions.

Table 3: Jurisdictional Emission Areas

Emission Area System Number	Jurisdiction / External Area	MSA Member Yes/No	Mobile Rates Modeled/Borrowed
1	Washington, DC	Yes	Modeled
2	Montgomery County	Yes	Modeled
3	Prince George's County	Yes	Modeled
4	Howard County	No	Borrowed (Prince George's Co.)
5	Anne Arundel County	No	Borrowed (Prince George's Co.)
6	Carroll County	No	Borrowed (Prince George's Co.)
7	Baltimore Area Externals	No	Borrowed (Prince George's Co.)
8	Calvert County	Yes	Modeled
9	Charles County	Yes	Modeled
10	Frederick County	Yes	Modeled
11	Frederick Co. Externals	No	Borrowed (Frederick Co.)
12	Arlington	Yes	Modeled
13	Fairfax County	Yes	Modeled
14	Loudoun County	Yes	Modeled
15	Prince William County	Yes	Modeled
16	Stafford County	Yes	Modeled
17	City of Alexandria	Yes	Modeled
18	St. Mary's County	No	Modeled
19	Washington Co. Externals	No	Modeled
20	Clarke County	No	Modeled
21	Fauquier County	No	Borrowed (Clarke Co.)
22	Jefferson Co, WVA	No	Borrowed (Clarke Co.)
23	Western External Area	No	Borrowed (Clarke Co.)
24	Spotsylvania County	No	Modeled
25	King George County	No	Borrowed (Spotsylvania Co.)
26	City of Fredericksburg	No	Borrowed (Spotsylvania Co.)
27	Southern External Area	No	Borrowed (Spotsylvania Co.)

Table 1 also indicates that, beyond jurisdictional considerations, the running emission rates are further specified by facility and speed, and starting emissions are further segmented by 'hot' and 'cold' engine conditions. In all, 179 Mobile model executions are prepared for each jurisdiction, for given season. These executions are currently run in batch. The sequence of scenarios generated by the batch of Mobile 6 executions is shown on Table 4. Each scenario represents a unique condition pertaining to the vehicle operating mode, facility type, and speed. Because annualized emissions are desired for the PM2.5 pollutant, the generation of Mobile rates procedures is expanded to reflect multiple seasons. Annualized NOx and PM2.5 emissions are currently developed on the basis of three seasonal periods. The associated Mobile 6 scenarios that are batched together for three seasons are listed shown on Table 5. Three utility programs have been developed to read the Mobile 6 output rate listings and create emission rate files that are readable by the TP+ scripts. These programs are named:

1) M6RATES.EXE (single season / VOC, CO, NOx rates)
2) M6RATES_3S_HCN.EXE (three-season VOC, CO, NOx rates)

3) M6RATES_3S_PM.EXE (three-season PM 2.5 rates)

Table 4: Sequence of Mobile Scenarios Generated for a Single Season

MOBILE6 'Scenarios'	Operating Mode	Facility Type	Speed Specifications
1- 65	Stabilized	Arterial	1 to 65 mph in 1 mph increments
66-130	Stabilized	Freeway, Non-Ramp	1 to 65 mph in 1 mph increments
131	Stabilized	Freeway Ramp	Single speed / 35.0 mph
132	Cold	Local	Single speed / 12.9 mph
133	Hot	Local	Single speed / 12.9 mph
134	Stabilized	Local	Single speed / 12.9 mph
135-179	Stabilized	Arterial(w/ Rural VMT Mix)	1 to 45 mph in 1 mph increments

Table 5: Sequence of Mobile Scenarios Generated for Three Seasons

MOBILE6 'Scenarios'	Season	Op. Mode	Facility Type	Speed Specifications
1- 65	Jan-Apr	Stabilized	Arterial	1 to 65 mph in 1 mph increments
66-130		Stabilized	Freeway, Non-Ramp	1 to 65 mph in 1 mph increments
131		Stabilized	Freeway Ramp	Single speed / 35.0 mph
132		Cold	Local	Single speed / 12.9 mph
133		Hot	Local	Single speed / 12.9 mph
134		Stabilized	Local	Single speed / 12.9 mph
135-179		Stabilized	Arterial(w/ Rural VMT Mix)	1 to 45 mph in 1 mph increments
180- 244	May-Sep	Stabilized	Arterial	1 to 65 mph in 1 mph increments
245-309		Stabilized	Freeway, Non-Ramp	1 to 65 mph in 1 mph increments
310		Stabilized	Freeway Ramp	Single speed / 35.0 mph
311		Cold	Local	Single speed / 12.9 mph
312		Hot	Local	Single speed / 12.9 mph
313		Stabilized	Local	Single speed / 12.9 mph
314-358		Stabilized	Arterial(w/ Rural VMT Mix)	1 to 45 mph in 1 mph increments
359-423	Oct-Dec	Stabilized	Arterial	1 to 65 mph in 1 mph increments
424-488		Stabilized	Freeway, Non-Ramp	1 to 65 mph in 1 mph increments
489		Stabilized	Freeway Ramp	Single speed / 35.0 mph
490		Cold	Local	Single speed / 12.9 mph
491		Hot	Local	Single speed / 12.9 mph
492		Stabilized	Local	Single speed / 12.9 mph
493-537		Stabilized	Arterial(w/ Rural VMT Mix)	1 to 45 mph in 1 mph increments

The final emission rate files used in single-season post-processor runs and three-season post-processor runs are shown on Tables 5 and 6 respectively. The tables indicate the filename convention used for a given post-processor run. The first characters of the file name are user specified, but the end-characters of the name are standardized. Table 5 indicates that 96 rate files are used in a single-season run, while 320 rate files are used in three season post-processor runs.

ATTACHMENT D

Table 6: Listing of Emission Rate Filenames Prepared for the Post-Processor / Single-Season Post-Processor

Jurisdiction	Running Arterial Rates *VOC, CO, Nx Rates by speed*	Running Freeway Rates *VOC, CO, Nx Rates by speed*	Running Freeway Ramp Rates *VOC, CO, Nx Rates @ 35 mph*	Starting (Hot/Cold) Rates *Hot VOC, CO, Nox / Cold VOC, CO, Nox Rates*	Running Local Rates *VOC, CO, Nox Rates @ 12.9 mph*	Running Local -Rural Arterial Rates *VOC, CO, Nx Rates by speed*
Alexandria	<prefix>AL.r_a	<prefix>AL.r_f	<prefix>AL.ram	<prefix>AL.stt	<prefix>AL.lcl	<prefix>AL.r_r
Arlington	<prefix>AR.r_a	<prefix>AR.r_f	<prefix>AR.ram	<prefix>AR.stt	<prefix>AR.lcl	<prefix>AR.r_r
Calvert	<prefix>CA.r_a	<prefix>CA.r_f	<prefix>CA.ram	<prefix>CA.stt	<prefix>CA.lcl	<prefix>CA.r_r
Charles	<prefix>CH.r_a	<prefix>CH.r_f	<prefix>CH.ram	<prefix>CH.stt	<prefix>CH.lcl	<prefix>CH.r_r
Calvert	<prefix>CL.r_a	<prefix>CL.r_f	<prefix>CL.ram	<prefix>CL.stt	<prefix>CL.lcl	<prefix>CL.r_r
DC	<prefix>DC.r_a	<prefix>DC.r_f	<prefix>DC.ram	<prefix>DC.stt	<prefix>DC.lcl	<prefix>DC.r_r
Frederick	<prefix>FR.r_a	<prefix>FR.r_f	<prefix>FR.ram	<prefix>FR.stt	<prefix>FR.lcl	<prefix>FR.r_r
Fairfax	<prefix>FX.r_a	<prefix>FX.r_f	<prefix>FX.ram	<prefix>FX.stt	<prefix>FX.lcl	<prefix>FX.r_r
Loudoun	<prefix>LD.r_a	<prefix>LD.r_f	<prefix>LD.ram	<prefix>LD.stt	<prefix>LD.lcl	<prefix>LD.r_r
Montgomery	<prefix>MC.r_a	<prefix>MC.r_f	<prefix>MC.ram	<prefix>MC.stt	<prefix>MC.lcl	<prefix>MC.r_r
Pr. George's	<prefix>PG.r_a	<prefix>PG.r_f	<prefix>PG.ram	<prefix>PG.stt	<prefix>PG.lcl	<prefix>PG.r_r
Pr. William	<prefix>PW.r_a	<prefix>PW.r_f	<prefix>PW.ram	<prefix>PW.stt	<prefix>PW.lcl	<prefix>PW.r_r
St. Mary's	<prefix>SM.r_a	<prefix>SM.r_f	<prefix>SM.ram	<prefix>SM.stt	<prefix>SM.lcl	<prefix>SM.r_r
Sprotsylvania	<prefix>SP.r_a	<prefix>SP.r_f	<prefix>SP.ram	<prefix>SP.stt	<prefix>SP.lcl	<prefix>SP.r_r
Stafford	<prefix>ST.r_a	<prefix>ST.r_f	<prefix>ST.ram	<prefix>ST.stt	<prefix>ST.lcl	<prefix>ST.r_r
Washington Co	<prefix>WE.r_a	<prefix>WE.r_f	<prefix>WE.ram	<prefix>WE.stt	<prefix>WE.lcl	<prefix>WE.r_r

Table 7: Listing of Emission Rate Filenames Prepared for the Post-Processor / Three – Season Post-Processor

Pollutant	Jurisdiction	Running Arterial Rates *Seasonal Rates by speed*	Running Freeway Rates *Seasonal Rates by speed*	Running Freeway Ramp Rates *Seasonal Rates @ 35 mph speed*	Starting (Hot/Cold) Rates *Seasonal Hot/Cold Rates*	Running Local Rates *Seasonal Rates @ 12.9 mph speed*	Running Local -Rural Arterial Rates *Seasonal Rates by speed*
	Alexandria	<prefix>COAL.arC	<prefix>COAL.frC	<prefix>COAL.rmC	<prefix>COAL.stC	<prefix>COAL.lcC	<prefix>COAL.rrC
CO	Arlington	<prefix>COAR.arC	<prefix>COAR.frC	<prefix>COAR.rmC	<prefix>COAR.stC	<prefix>COAR.lcC	<prefix>COAR.rrC
	Calvert	<prefix>COCA.arC	<prefix>COCA.frC	<prefix>COCA.rmC	<prefix>COCA.stC	<prefix>COCA.lcC	<prefix>COCA.rrC
	Charles	<prefix>COCH.arC	<prefix>COCH.frC	<prefix>COCH.rmC	<prefix>COCH.stC	<prefix>COCH.lcC	<prefix>COCH.rrC
	Calvert	<prefix>COCL.arC	<prefix>COCL.frC	<prefix>COCL.rmC	<prefix>COCL.stC	<prefix>COCL.lcC	<prefix>COCL.rrC
	DC	<prefix>CODC.arC	<prefix>CODC.frC	<prefix>CODC.rmC	<prefix>CODC.stC	<prefix>CODC.lcC	<prefix>CODC.rrC
	Frederick	<prefix>COFR.arC	<prefix>COFR.frC	<prefix>COFR.rmC	<prefix>COFR.stC	<prefix>COFR.lcC	<prefix>COFR.rrC
	Fairfax	<prefix>COFX.arC	<prefix>COFX.frC	<prefix>COFX.rmC	<prefix>COFX.stC	<prefix>COFX.lcC	<prefix>COFX.rrC
	Loudoun	<prefix>COLD.arC	<prefix>COLD.frC	<prefix>COLD.rmC	<prefix>COLD.stC	<prefix>COLD.lcC	<prefix>COLD.rrC
	Montgomery	<prefix>COMC.arC	<prefix>COMC.frC	<prefix>COMC.rmC	<prefix>COMC.stC	<prefix>COMC.lcC	<prefix>COMC.rrC
	Pr. George's	<prefix>COPG.arC	<prefix>COPG.frC	<prefix>COPG.rmC	<prefix>COPG.stC	<prefix>COPG.lcC	<prefix>COPG.rrC
	Pr. William	<prefix>COPW.arC	<prefix>COPW.frC	<prefix>COPW.rmC	<prefix>COPW.stC	<prefix>COPW.lcC	<prefix>COPW.rrC
	St. Mary's	<prefix>COSM.arC	<prefix>COSM.frC	<prefix>COSM.rmC	<prefix>COSM.stC	<prefix>COSM.lcC	<prefix>COSM.rrC
	Sprotsylvania	<prefix>COSP.arC	<prefix>COSP.frC	<prefix>COSP.rmC	<prefix>COSP.stC	<prefix>COSP.lcC	<prefix>COSP.rrC
	Stafford	<prefix>COST.arC	<prefix>COST.frC	<prefix>COST.rmC	<prefix>COST.stC	<prefix>COST.lcC	<prefix>COST.rrC
	Washington Co	<prefix>COWE.arC	<prefix>COWE.frC	<prefix>COWE.rmC	<prefix>COWE.stC	<prefix>COWE.lcC	<prefix>COWE.rrC
VOC	Alexandria	<prefix>HCAL.arH	<prefix>HCAL.frH	<prefix>HCAL.rmH	<prefix>HCAL.stH	<prefix>HCAL.lcH	<prefix>HCAL.rrH
	Arlington	<prefix>HCAR.arH	<prefix>HCAR.frH	<prefix>HCAR.rmH	<prefix>HCAR.stH	<prefix>HCAR.lcH	<prefix>HCAR.rrH
	Calvert	<prefix>HCCA.arH	<prefix>HCCA.frH	<prefix>HCCA.rmH	<prefix>HCCA.stH	<prefix>HCCA.lcH	<prefix>HCCA.rrH
	Charles	<prefix>HCCH.arH	<prefix>HCCH.frH	<prefix>HCCH.rmH	<prefix>HCCH.stH	<prefix>HCCH.lcH	<prefix>HCCH.rrH
	Calvert	<prefix>HCCL.arH	<prefix>HCCL.frH	<prefix>HCCL.rmH	<prefix>HCCL.stH	<prefix>HCCL.lcH	<prefix>HCCL.rrH
	DC	<prefix>HCDC.arH	<prefix>HCDC.frH	<prefix>HCDC.rmH	<prefix>HCDC.stH	<prefix>HCDC.lcH	<prefix>HCDC.rrH
	Frederick	<prefix>HCFR.arH	<prefix>HCFR.frH	<prefix>HCFR.rmH	<prefix>HCFR.stH	<prefix>HCFR.lcH	<prefix>HCFR.rrH
	Fairfax	<prefix>HCFX.arH	<prefix>HCFX.frH	<prefix>HCFX.rmH	<prefix>HCFX.stH	<prefix>HCFX.lcH	<prefix>HCFX.rrH
	Loudoun	<prefix>HCLD.arH	<prefix>HCLD.frH	<prefix>HCLD.rmH	<prefix>HCLD.stH	<prefix>HCLD.lcH	<prefix>HCLD.rrH
	Montgomery	<prefix>HCMC.arH	<prefix>HCMC.frH	<prefix>HCMC.rmH	<prefix>HCMC.stH	<prefix>HCMC.lcH	<prefix>HCMC.rrH
	Pr. George's	<prefix>HCPG.arH	<prefix>HCPG.frH	<prefix>HCPG.rmH	<prefix>HCPG.stH	<prefix>HCPG.lcH	<prefix>HCPG.rrH
	Pr. William	<prefix>HCPW.arH	<prefix>HCPW.frH	<prefix>HCPW.rmH	<prefix>HCPW.stH	<prefix>HCPW.lcH	<prefix>HCPW.rrH
	St. Mary's	<prefix>HCSM.arH	<prefix>HCSM.frH	<prefix>HCSM.rmH	<prefix>HCSM.stH	<prefix>HCSM.lcH	<prefix>HCSM.rrH
	Sprotsylvania	<prefix>HCSP.arH	<prefix>HCSP.frH	<prefix>HCSP.rmH	<prefix>HCSP.stH	<prefix>HCSP.lcH	<prefix>HCSP.rrH
	Stafford	<prefix>HCST.arH	<prefix>HCST.frH	<prefix>HCST.rmH	<prefix>HCST.stH	<prefix>HCST.lcH	<prefix>HCST.rrH
	Washington Co	<prefix>HCWE.arH	<prefix>HCWE.frH	<prefix>HCWE.rmH	<prefix>HCWE.stH	<prefix>HCWE.lcH	<prefix>HCWE.rrH
NOx	Alexandria	<prefix>NXAL.arN	<prefix>NXAL.frN	<prefix>NXAL.rmN	<prefix>NXAL.stN	<prefix>NXAL.lcN	<prefix>NXAL.rrN
	Arlington	<prefix>NXAR.arN	<prefix>NXAR.frN	<prefix>NXAR.rmN	<prefix>NXAR.stN	<prefix>NXAR.lcN	<prefix>NXAR.rrN
	Calvert	<prefix>NXCA.arN	<prefix>NXCA.frN	<prefix>NXCA.rmN	<prefix>NXCA.stN	<prefix>NXCA.lcN	<prefix>NXCA.rrN
	Charles	<prefix>NXCH.arN	<prefix>NXCH.frN	<prefix>NXCH.rmN	<prefix>NXCH.stN	<prefix>NXCH.lcN	<prefix>NXCH.rrN
	Calvert	<prefix>NXCL.arN	<prefix>NXCL.frN	<prefix>NXCL.rmN	<prefix>NXCL.stN	<prefix>NXCL.lcN	<prefix>NXCL.rrN
	DC	<prefix>NXDC.arN	<prefix>NXDC.frN	<prefix>NXDC.rmN	<prefix>NXDC.stN	<prefix>NXDC.lcN	<prefix>NXDC.rrN
	Frederick	<prefix>NXFR.arN	<prefix>NXFR.frN	<prefix>NXFR.rmN	<prefix>NXFR.stN	<prefix>NXFR.lcN	<prefix>NXFR.rrN
	Fairfax	<prefix>NXFX.arN	<prefix>NXFX.frN	<prefix>NXFX.rmN	<prefix>NXFX.stN	<prefix>NXFX.lcN	<prefix>NXFX.rrN
	Loudoun	<prefix>NXLD.arN	<prefix>NXLD.frN	<prefix>NXLD.rmN	<prefix>NXLD.stN	<prefix>NXLD.lcN	<prefix>NXLD.rrN
	Montgomery	<prefix>NXMC.arN	<prefix>NXMC.frN	<prefix>NXMC.rmN	<prefix>NXMC.stN	<prefix>NXMC.lcN	<prefix>NXMC.rrN
	Pr. George's	<prefix>NXPG.arN	<prefix>NXPG.frN	<prefix>NXPG.rmN	<prefix>NXPG.stN	<prefix>NXPG.lcN	<prefix>NXPG.rrN
	Pr. William	<prefix>NXPW.arN	<prefix>NXPW.frN	<prefix>NXPW.rmN	<prefix>NXPW.stN	<prefix>NXPW.lcN	<prefix>NXPW.rrN
	St. Mary's	<prefix>NXSM.arN	<prefix>NXSM.frN	<prefix>NXSM.rmN	<prefix>NXSM.stN	<prefix>NXSM.lcN	<prefix>NXSM.rrN
	Sprotsylvania	<prefix>NXSP.arN	<prefix>NXSP.frN	<prefix>NXSP.rmN	<prefix>NXSP.stN	<prefix>NXSP.lcN	<prefix>NXSP.rrN
	Stafford	<prefix>NXST.arN	<prefix>NXST.frN	<prefix>NXST.rmN	<prefix>NXST.stN	<prefix>NXST.lcN	<prefix>NXST.rrN
	Washington Co	<prefix>NXWE.arN	<prefix>NXWE.frN	<prefix>NXWE.rmN	<prefix>NXWE.stN	<prefix>NXWE.lcN	<prefix>NXWE.rrN

Pollutant	Jurisdiction	*Seasonal PM 2.5 Network and Local Rates*
PM 2.5	Alexandria	<prefix>pmAL.N_L
	Arlington	<prefix>pmAR.N_L
Seasonal Network /	Calvert	<prefix>pmCA.N_L
Seasonal Local	Charles	<prefix>pmCH.N_L
	Calvert	<prefix>pmCL.N_L
	DC	<prefix>pmDC.N_L
	Frederick	<prefix>pmFR.N_L
	Fairfax	<prefix>pmFX.N_L
	Loudoun	<prefix>pmLD.N_L
	Montgomery	<prefix>pmMC.N_L
	Pr. George's	<prefix>pmPG.N_L
	Pr. William	<prefix>pmPW.N_L
	St. Mary's	<prefix>pmSM.N_L
	Sprotsylvania	<prefix>pmSP.N_L
	Stafford	<prefix>pmST.N_L
	Washington Co	<prefix>pmWE.N_L

Pollutant	Jurisdiction	*Seasonal Soak Rates*
	Alexandria	<prefix>HCAL.SDR
Soak, Diurnal,	Arlington	<prefix>HCAR.SDR
Resting Loss	Calvert	<prefix>HCCA.SDR
Rates	Charles	<prefix>HCCH.SDR
	Calvert	<prefix>HCCL.SDR
Seasonal Soak,	DC	<prefix>HCDC.SDR
Seasonal Diurnal,	Frederick	<prefix>HCFR.SDR
Seasonal Rest Loss	Fairfax	<prefix>HCFX.SDR
	Loudoun	<prefix>HCLD.SDR
	Montgomery	<prefix>HCMC.SDR
	Pr. George's	<prefix>HCPG.SDR
	Pr. William	<prefix>HCPW.SDR
	St. Mary's	<prefix>HCSM.SDR
	Sprotsylvania	<prefix>HCSP.SDR
	Stafford	<prefix>HCST.SDR
	Washington Co	<prefix>HCWE.SDR

4.0 Post–Processor Computations

The post-processor computes three classes of mobile emissions: Trip-end emissions, comprised of starting and soaking types, running emissions, and local emissions. The computation procedures are described below, in turn.

4.1 Trip-End Emissions

Starting emissions are developed by applying per-trip emission rates to modeled vehicle trips at the zone level, on an hour-by-hour basis. Starting pollutant rates are associated with VOC, CO, and NOx emissions, and are expressed in terms of *cold* and *hot transient* types. Cold starts relate to those auto trips with fully cooled engines (i.e., engines that have been turned off for at least one hour prior to the trip starting time). Alternatively, hot transient starts are those auto trips with warm engines (i.e., engines that have been turned off less than one hour prior to the trip start time). An hourly allocation of trip origins is necessary for the starting emission calculation since the proportion of cold and hot starts is dependent upon the time of day. The assumed hourly distribution of AM, PM, and Off-peak vehicle trips is shown on Table 8. The distribution shown was derived from the 1994 Household Travel Survey (HTS). The assumed hourly distribution for cold and hot transient starts is shown on Table 9. This table was also derived from the 1994 HTS.

Soaking emissions are associated with the evaporative VOC/HC emissions that result when the engine is turned off. The soak emissions consist of a single emission rate that is applied to trip destinations. There is no temporal component to the soaking emission computation.

It was stated earlier that emission rates are developed on a county-by-county basis. An averaged emission rate is used in the post-processor, as opposed to a single county-specific rate, because the vehicle starts in any given jurisdiction are realistically made by residents of that jurisdiction as well as by residents of many other jurisdictions. For example, the emission rate used within the District of Columbia is the average of all emission rates weighted by the proportion of daily vehicle trips from each jurisdiction to the District. The general equation for computing starting emissions for a specific TAZ and hour of the day is as follows:

$$StartEm_{ih} = Starts_h * \sum_{j=1}^{27} ((CSR_j * CPCT_h + HSR_j * HPCT_h) * Tprop_{ij})$$

Where:

$StartEm_{ih}$ = Zonal starting-up emissions (in grams) at hour h in jurisdiction i
$Starts_h$ = Zonal vehicle starts at hour h
CSR_j = Cold Start rate (gm/trip) for jurisdiction j
$CPCT_h$ = Cold start proportion at hour h
HSR_j = Hot Start rate (gm/trip) for jurisdiction j
$HPCT_h$ = Hot start proportion at hour h
$Tprop_{ij}$ = Proportion of daily trips between jurisdiction i/j

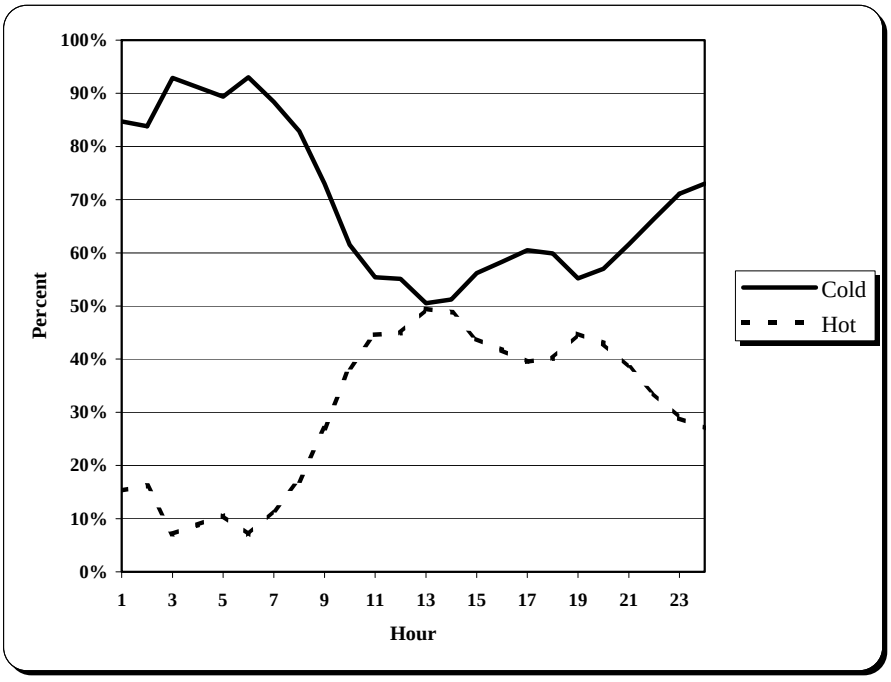
Table 8

Distribution of AM, PM, and Off-Peak Period Auto Driver Trips
Among
Hourly Periods

Hour No.		% AM	% PM	Off-Peak
1	12mid - 12:59AM			0.30%
2	1:00AM - 1:59AM			0.40%
3	2:00AM - 2:59AM			0.30%
4	3:00AM - 3:59AM			0.30%
5	4:00AM - 4:59AM			0.50%
6	5:00AM - 5:59AM			2.20%
7	6:00AM - 6:59AM	20.10%		
8	7:00AM - 7:59AM	39.80%		
9	8:00AM - 8:59AM	40.10%		
10	9:00AM - 9:59AM			9.70%
11	10:00AM - 10:59AM			8.20%
12	11:00AM - 11:59AM			9.20%
13	12noon - 12:59PM			10.10%
14	1:00PM - 1:59PM			8.90%
15	2:00PM - 2:59PM			9.00%
16	3:00PM - 3:59PM			11.60%
17	4:00PM - 4:59PM		31.40%	
18	5:00PM - 5:59PM		37.30%	
19	6:00PM - 6:59PM		31.30%	
20	7:00PM - 7:59PM			10.80%
21	8:00PM - 8:59PM			7.70%
22	9:00PM - 9:59PM			5.80%
23	10:00PM - 10:59PM			3.40%
24	11:00PM - 11:59PM			1.60%
Total		100.00%	100.00%	100.00%

Table 9
Distribution of Cold / Hot Transient Vehicle Starts by Hour

Hour No.		% Cold	% Hot	Total
1	12mid - 12:59AM	84.70%	15.30%	100.00%
2	1:00AM - 1:59AM	83.80%	16.20%	100.00%
3	2:00AM - 2:59AM	92.90%	7.10%	100.00%
4	3:00AM - 3:59AM	91.20%	8.80%	100.00%
5	4:00AM - 4:59AM	89.40%	10.60%	100.00%
6	5:00AM - 5:59AM	93.00%	7.00%	100.00%
7	6:00AM - 6:59AM	88.40%	11.60%	100.00%
8	7:00AM - 7:59AM	82.90%	17.10%	100.00%
9	8:00AM - 8:59AM	73.00%	27.00%	100.00%
10	9:00AM - 9:59AM	61.50%	38.50%	100.00%
11	10:00AM - 10:59AM	55.40%	44.60%	100.00%
12	11:00AM - 11:59AM	55.10%	44.90%	100.00%
13	12noon - 12:59PM	50.50%	49.50%	100.00%
14	1:00PM - 1:59PM	51.20%	48.80%	100.00%
15	2:00PM - 2:59PM	56.20%	43.80%	100.00%
16	3:00PM - 3:59PM	58.30%	41.70%	100.00%
17	4:00PM - 4:59PM	60.50%	39.50%	100.00%
18	5:00PM - 5:59PM	59.90%	40.10%	100.00%
19	6:00PM - 6:59PM	55.20%	44.80%	100.00%
20	7:00PM - 7:59PM	57.00%	43.00%	100.00%
21	8:00PM - 8:59PM	61.60%	38.40%	100.00%
22	9:00PM - 9:59PM	66.40%	33.60%	100.00%
23	10:00PM - 10:59PM	71.10%	28.90%	100.00%
24	11:00PM - 11:59PM	73.00%	27.00%	100.00%



Similarly, the equation for computing hot soak emissions is as follows:

$$SoakEm_{ih} = Stops_h * \sum_{j=1}^{27} (HSR_j * Tprop_{ij})$$

Where:

$SoakEm_{ih}$ = Zonal hot soak emissions (in grams) at hour h in jurisdiction i
$Stops_h$ = Vehicle stops at hour h
HSR_j = Hot Soak rate (gm/trip) for jurisdiction j
$Tprop_{ij}$ = Proportion of daily trips between jurisdiction i and jurisdiction j

The regional total of starting/soaking emissions is, therefore, based on the result of the above equations accumulated over all TAZ's, over all hours of the day. Regional emissions in grams are converted to tons using a conversion factor of 907,184.74 gm/ton.

4.2 Running (Hot Stabilized) Emissions

Running emissions are associated with VOC/HC, CO, NOx, and PM 2.5 pollutants emitted on the regional highway network. They are computed by applying per-mile emission rates to VMT at the network link level, and are computed on an hour-by-hour basis. The calculation is applied on an hourly basis because the running emission rates are provided as a function of highway speed[1], which varies with congestion throughout the day. As with the trip-end emission calculation, the running emission rate for a given link is a weighted average of all jurisdictional rates based on the proportion of daily vehicle trips from each county to the specific county in which the network link is located.

The post-processor now incorporates global link volume adjustment factors used to adjust AAWDT volume to the specific season that is appropriate. The current seasonal factors were shown on Table 2, above. Before link volumes are disaggregated among hourly periods, the total daily volume on the link is adjusted with the seasonal factor.

The allocation of link volumes among hourly periods is done in a two-step manner. First, an initial hourly distribution based on observed data for the Washington region is applied to the daily link volume, based on the facility class and *peaking* classification of the link. Facility classifications are defined as freeway, arterial, or local. COG has established three peaking types, AM-oriented, PM-oriented, and Even, based on the following *peaking percentage*[2]:

Peaking Percentage = ((AM Volume* PM scale factor) – PM Volume) / Daily Link Volume
Where:
Peaking Percentage > 7.5% indicates AM oriented class
Peaking Percentage < - 7.5% indicates PM oriented class
Peaking Percentage - 7.5% to 7.5% indicates Even oriented class

[1] The current PM2.5 emission rate, however, does not vary by speed. Nonetheless, the PM2.5 computation is still made on an hourly basis.
[2] See August 27, 2002 Memorandum from Michael Freeman to File, Subject: Development and Recommendations of Hourly Distributions of Daily Traffic Volumes.

The PM scale factor shown is applied to all AM period volumes so that the sum of regional AM link volumes will equal the sum of regional PM volumes. The scaled volume is used *only* for the purpose of computing the peaking index, and is necessary to ensure that a reasonable regional balance of AM and PM oriented links are attained. Default hourly distributions associated with specific facility and peaking classifications are shown on Table 10. The distribution selected for a given link is applied to the *daily seasonal* link volume to arrive at initial hourly volume estimates. Next, the initial hourly estimates are scaled on a gross time period basis so that the hourly link volumes in the AM peak, PM peak, and off-peak periods are consistent with the original (seasonally adjusted) link volumes produced by the traffic assignment process. The hourly link speed is developed from the volume–to-capacity ratio developed at this point based on the speed flow relationship shown on Table 11. The functions shown on Table 11 are based on observed speed and density data collected in the Washington region.

Table 10
Hourly Distribution of Daily Traffic by Orientation and Facility Type

Hour		AM			PM			EVEN		
No.		Freeway	Arterial	Collector	Freeway	Arterial	Collector	Freeway	Arterial	Collector
1	12mid - 12:59AM	0.77	0.49	0.34	1.11	0.76	0.62	1.07	0.67	0.52
2	1:00AM - 1:59AM	0.55	0.30	0.20	0.64	0.41	0.32	0.73	0.40	0.31
3	2:00AM - 2:59AM	0.52	0.25	0.18	0.48	0.28	0.24	0.61	0.30	0.24
4	3:00AM - 3:59AM	0.72	0.37	0.29	0.42	0.24	0.20	0.68	0.33	0.30
5	4:00AM - 4:59AM	1.88	1.09	0.96	0.58	0.38	0.32	1.24	0.72	0.70
6	5:00AM - 5:59AM	6.20	4.05	3.80	1.38	1.08	0.96	3.60	2.27	2.37
7	6:00AM - 6:59AM	8.66	8.75	9.19	3.24	2.70	2.58	4.99	4.58	4.83
8	7:00AM - 7:59AM	11.13	12.38	13.40	4.63	4.62	4.67	6.96	7.65	8.06
9	8:00AM - 8:59AM	8.04	9.82	10.92	4.71	5.15	5.07	5.44	6.90	7.27
10	9:00AM - 9:59AM	6.94	6.39	6.10	3.84	4.38	4.10	5.93	6.11	5.80
11	10:00AM - 10:59AM	5.14	4.71	4.50	3.90	4.19	3.94	5.18	5.15	4.80
12	11:00AM - 11:59AM	4.68	4.53	4.51	4.21	4.67	4.54	5.15	5.40	5.14
13	12noon - 12:59PM	4.65	4.72	4.81	4.61	5.25	5.25	5.34	5.80	5.50
14	1:00PM - 1:59PM	4.58	4.64	4.64	4.83	5.21	5.01	5.45	5.68	5.34
15	2:00PM - 2:59PM	4.66	4.80	4.85	5.95	5.87	5.76	6.10	5.97	5.89
16	3:00PM - 3:59PM	4.70	5.09	5.17	7.32	7.14	7.03	6.80	6.62	6.68
17	4:00PM - 4:59PM	4.56	5.26	5.24	9.95	9.58	10.06	5.94	6.26	6.61
18	5:00PM - 5:59PM	4.76	5.55	5.58	10.87	10.93	11.57	6.63	7.15	7.66
19	6:00PM - 6:59PM	4.32	4.98	4.92	8.55	9.03	9.65	5.35	5.92	6.44
20	7:00PM - 7:59PM	3.66	3.90	3.72	5.61	6.01	6.17	4.99	5.29	5.45
21	8:00PM - 8:59PM	2.95	2.97	2.70	4.25	4.44	4.60	3.89	4.05	4.09
22	9:00PM - 9:59PM	2.64	2.40	2.01	3.68	3.58	3.52	3.44	3.27	3.06
23	10:00PM - 10:59PM	2.06	1.64	1.30	2.80	2.41	2.20	2.70	2.21	1.90
24	11:00PM - 11:59PM	1.23	0.92	0.72	2.45	1.71	1.62	1.81	1.29	1.05
Total		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

In the second step, the initial hourly volume is compared to the hourly link capacity (Level-of-Service 'E') and adjusted if necessary. The adjustment procedure (see Table 12) begins with the comparison of AM peak hour traffic and PM peak hour traffic with the available capacity. If the initial peak hour volume exceeds capacity, then the peak hour volume is adjusted to equal the capacity and the portion of volume exceeding capacity is then apportioned in equal parts to the hour before and the hour after the peak hour. In the case of overly congested freeways, the capacity is moderated to reflect the fact that the 'through-put' volumes cannot be sustained at LOS 'E' service levels when the V/C ratio exceeds 1.0. Table 13 shows the assumed relationship between freeway capacities and congested V/C ratios. Because this adjustment could potentially cause the 'shoulder' hour volumes to exceed capacity, added steps are undertaken to compare the resulting volumes in each successive shoulder hour with the capacity. If a given shoulder hour volume exceeds capacity, then the volume is similarly adjusted to equal capacity and the 'overflow' volume is added to the volume of the adjacent hourly period. Traffic assignments on rare occasions produce severely overloaded link volumes to the point where a given link volume could exceed the capacity over *all* hours of the day. Because of this possibility, volume adjustments are *not* made for the first, noon, and last hours (hours 1, 13, and 24), even if a given link volume is determined to exceed capacity in those particular hours.

Subsequent to the development of 'final' hourly link volumes and restrained speeds, the general equation for computing running emissions is:

$$RunningEm_{ih} = VMT_h * \sum_{j=1}^{27} (RRate_j * Tprop_{ij})$$

Where:

$RunningEm_{ih}$	=	Running link emissions at hour h in jurisdiction i
VMT_h	=	Vehicle Miles Travel (after peak-spreading) at hour h
$RRate_j$	=	Running rate (gm/mi) as a function of highway speed for jurisdiction j
$Tprop_{ij}$	=	Proportion of daily trips between jurisdiction i/j

The regional running emissions are the accumulation of calculated hourly emissions over all network links in the study area. Emissions in grams are converted to tons using a conversion factor of 907,184.74 gm/ton.

Table 11
Speed Delay Functions Used in the MWCOG Mobile Emissions Post-Processor
By
Facility Type and Area Type (1-7)

V/C	Freeway			Major Arterial				Minor Arterial				Collector				Expressway		
Atp->	1-2	3-4	5-7	1-2	3-4	5	6-7	1-2	3-4	5	6-7	1-2	3-4	5	6-7	1-2	3-5	6-7
0.00	55.000	60.000	67.000	25.000	35.000	40.000	45.000	20.000	30.000	35.000	40.000	15.000	20.000	25.000	30.000	45.000	50.000	55.000
0.10	54.945	59.945	66.940	24.300	33.600	38.600	43.600	19.400	28.900	33.800	39.200	14.500	19.300	24.300	28.800	44.945	49.939	54.933
0.20	54.890	59.890	66.880	23.600	32.200	37.200	42.200	18.800	27.800	32.600	38.400	14.000	18.600	23.600	27.600	44.890	49.878	54.866
0.30	54.810	59.800	66.790	22.900	30.800	35.800	40.800	18.200	26.700	31.400	37.600	13.500	17.900	22.900	26.400	44.820	49.800	54.780
0.40	54.710	59.690	66.670	22.200	29.400	34.400	39.400	17.600	25.600	30.200	36.800	13.000	17.200	22.200	25.200	44.730	49.700	54.670
0.50	54.570	59.540	66.490	21.500	28.000	33.000	38.000	17.000	24.500	29.000	36.000	12.500	16.500	21.500	24.000	44.620	49.578	54.536
0.60	54.370	59.300	66.180	20.800	27.000	31.600	36.400	16.400	23.400	27.800	35.000	12.000	16.000	20.800	23.000	44.470	49.411	54.352
0.70	54.060	58.910	65.600	20.100	26.000	30.200	34.800	15.800	22.300	26.600	34.100	11.500	15.500	20.100	22.000	44.260	49.178	54.096
0.80	53.540	58.170	64.260	19.400	25.000	28.800	33.200	15.200	21.200	25.400	31.400	11.000	15.000	19.400	21.000	43.970	48.856	53.741
0.90	52.560	56.560	60.840	18.700	24.000	27.400	31.600	14.600	20.100	24.200	28.700	10.500	14.500	18.700	20.000	43.530	48.367	53.203
1.00	50.580	53.220	55.280	18.000	23.000	26.000	30.000	14.000	19.000	23.000	26.000	10.000	14.000	18.000	19.000	42.820	47.578	52.336
1.10	46.860	48.550	49.875	16.600	20.800	23.400	27.200	12.800	17.600	21.000	23.600	9.200	12.800	16.600	17.600	41.250	45.833	50.417
1.17	44.256	45.281	46.092	15.620	19.260	21.580	25.240	11.960	16.620	19.600	21.920	8.640	11.960	15.620	16.620	40.151	44.612	49.073
1.20	43.140	43.880	44.470	15.200	18.600	20.800	24.400	11.600	16.200	19.000	21.200	8.400	11.600	15.200	16.200	39.680	44.089	48.498
1.30	39.335	39.870	40.315	13.800	16.400	18.200	21.600	10.400	14.800	17.000	18.800	7.600	10.400	13.800	14.800	36.925	41.028	45.131
1.40	35.530	35.860	36.160	12.400	14.200	15.600	18.800	9.200	13.400	15.000	16.400	6.800	9.200	12.400	13.400	34.170	37.967	41.763
1.50	32.470	32.740	32.990	11.000	12.000	13.000	16.000	8.000	12.000	13.000	14.000	6.000	8.000	11.000	12.000	31.420	34.911	38.402
1.60	29.410	29.620	29.820	11.000	12.000	13.000	16.000	8.000	12.000	13.000	14.000	6.000	8.000	11.000	12.000	28.670	31.856	35.041
1.80	24.550	24.700	24.850	11.000	12.000	13.000	16.000	8.000	12.000	13.000	14.000	6.000	8.000	11.000	12.000	24.050	26.722	29.394
2.00	20.610	20.730	20.860	11.000	12.000	13.000	16.000	8.000	12.000	13.000	14.000	6.000	8.000	11.000	12.000	20.230	22.478	24.726
2.25	16.650	16.750	16.850	11.000	12.000	13.000	16.000	8.000	12.000	13.000	14.000	6.000	8.000	11.000	12.000	16.350	18.167	19.983
99.99	16.650	16.750	16.850	11.000	12.000	13.000	16.000	8.000	12.000	13.000	14.000	6.000	8.000	11.000	12.000	16.350	18.167	19.983

ATTACHMENT D

Table 12	
Peak Spreading Procedure ***Adjustment Process for Spreading Hourly Volumes When Initial Volumes Exceed Capacity***	
Step 1:	The AM peak hour (hour 8) initial volume is compared to the link capacity. If the initial hour 8 volume exceeds capacity, then the hour 8 volume is set to capacity (or a moderated capacity value in the case of freeways) and the excess volume portion is added to the volume in periods occurring before *and* after the AM peak hour (hours 7 and 9) on a 50/50 basis.
Step 2:	The PM peak hour (hour 18) initial volume is compared to the link capacity. If the initial volume exceeds capacity, then the hour 18 volume is set to capacity (or a moderated capacity value in the case of freeways) and the excess volume portion is added to the volume in periods occurring before *and* after the PM peak hour (hours 17 and 19) on a 50/50 basis.
Step 3:	The volume occurring during pre-AM peak hours (hours 1 to 7) are sequentially checked against the link capacity as in steps 1 and 2, and adjusted (if necessary) in a backward-moving fashion. If the volume occurring in hour 7 exceeds capacity then the hour 7 volume is set to capacity and the excess volume portion is added to the volume of hour 6 volume, and so on. There is no volume spreading at hour 1, even for rare cases where the resulting hour 1 volume exceeds capacity.
Step 4:	The volume occurring during post-AM peak hours (hours 9 to 13) are sequentially checked against the link capacity as in steps 1 and 2, and adjusted (if necessary) in a forward-moving fashion. If the volume occurring in hour 9 exceeds capacity then the hour 9 volume is set to capacity and the excess volume portion is added to the volume of hour 10 volume, and so on. There is no volume spreading at hour 13 (the midday hour), even for rare cases where the resulting hour 13 volume exceeds capacity.
Step 5:	The volume occurring during pre-PM peak hours (hours 13 to 17) are sequentially checked against the link capacity as in steps 1 and 2, and adjusted (if necessary) in a backward-moving fashion. If the volume occurring in hour 17 exceeds capacity then the hour 17 volume is set to capacity and the excess volume portion is added to the volume of hour 16 volume, and so on. There is no volume spreading at hour 13 (the midday hour), even for rare cases where the resulting hour 13 volume exceeds capacity.
Step 6:	The volume occurring during post-PM peak hours (hours 19 to 24) are sequentially checked against the link capacity as in steps 1 and 2, and adjusted (if necessary) in a forward-moving fashion. If the volume occurring in hour 19 exceeds capacity then the hour 19 volume is set to capacity and the excess volume portion is added to the volume of hour 20 volume, and so on. There is no volume spreading at hour 24, even for rare cases where the resulting hour 24 volume exceeds capacity.

Table 13
Freeway Through-Put Capacities Under Congested Conditions

V/C	Fwy AT1	Fwy AT2	Fwy AT3	Fwy AT4	Fwy AT5	FWY AT6	FWY AT7
1.00	1500	1600	1800	1800	2000	2000	2100
1.20	1433	1528	1719	1719	1911	1911	2006
1.40	1366	1457	1639	1639	1821	1821	1912
1.60	1299	1385	1559	1559	1732	1732	1818
1.80	1214	1295	1457	1457	1619	1619	1699
2.00	1128	1204	1355	1355	1505	1505	1580
2.25	1017	1085	1221	1221	1356	1356	1424
99.99	1017	1085	1221	1221	1356	1356	1424

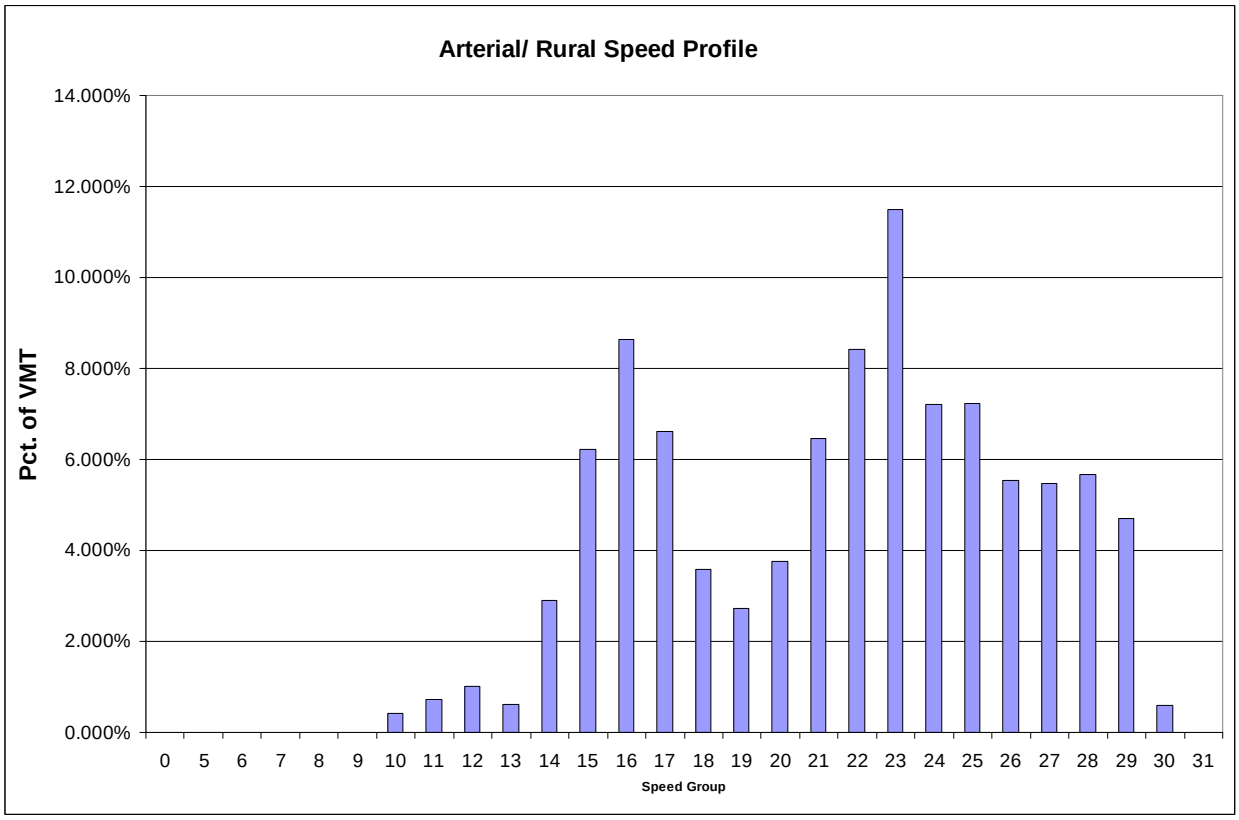
4.3 Local Emissions

Local (or off-network) emissions are those generated on smaller facilities that are not included in the regional network. Local emissions are associated with VOC/HC, CO, NOx, and PM 2.5 pollutants and are computed at jurisdiction level by applying per-mile emission rates to the local VMT. However, the local emission calculation requires that local VMT be further allocated among urban and rural categories, as the emission calculation is different. The calculation steps are listed below:

1) The small file containing base year jurisdictional modeled network VMT, observed local VMT, and base year urban/rural local VMT percentages is prepared.
2) Modeled network VMT for the analysis year is summarized at jurisdiction level and merged with the base year information, above.
3) Local urban and rural VMT is estimated for the analysis year. First, local VMT is estimated by applying a growth factor to the base year local VMT. The growth factor is based on modeled VMT change between the base year and analysis year. Next, the base year urban and rural percentages are applied to the local VMT computed for the analysis year.
4) Local PM2.5 emissions are computed based on total (urban and rural) VMT.
5) Urban/local NOx, CO, and VOC emissions are computed using the single local/stabilized emission factor produced by Mobile. This factor is based on an assumed speed of 12.9 mph.
6) Rural/local NOx, CO, and VOC emissions are computed by first allocating the rural VMT among speed 'bins' using an assumed average speed profile. The profile reflects a VMT distribution for rural jurisdictions that was summarized from previous modeling files. The profile, shown on Figure 1, was determined to be a reasonable basis for local facilities speeds in rural areas. Secondly, rural arterial rates are applied to the VMT on the basis of speed.

Previous local emissions calculations have been made using the single (12.9 mph-based) local rate. It is believed that the use of arterial rates at higher speed levels will yield a more accurate emission result for rural areas of the region.

Figure 1:



5.0 Post-Processor Program Steps

The post-processor is executed when provided with: 1) travel demand output files, 2) emission rate files by jurisdiction as described above, and 3) a small text file containing jurisdiction level VMT information. The travel demand output files include the final iteration loaded highway network (I6HWY.NET) and three vehicle trip tables corresponding to the AM, PM, and off peak periods (I6AM.VTT, I6PM.VTT, I6OP.VTT). The jurisdictional VMT file (Base_Juris_VMT.txt) is a pre-existing file containing base year estimates of network-based VMT, local (or off-network) VMT, and the estimated proportion of network VMT that is urban and rural. This information is used to develop future year local VMT that is urban and local. All VMT information corresponds only to jurisdictions within the MSA as defined above.

The post-processor is normally executed using batch files that are called in a command prompt window. The batch file used for a single-season post-processor execution (e.g., ozone or

wintertime model runs) is named EMISS.BAT. The batch file used for a three-season post-processor execution is named 3_Season_EMISS.BAT. The batch files call five TP+ scripts which are summarized below. The TP+ script names are in parenthesis:

1) Trip Table Formatting (AQTRIPS.S): AM, PM, and off-peak trip tables produced by the travel demand model are read. The program produces zonal trip-ends for each of the three time periods. It also produces a file containing the proportion of daily vehicle trips from/to each of the 27 emission areas. Since the trip proportions are developed with daily trips, the proportion in the *i/j* direction is generally the same as that in the *j/i* direction.

2) Time-of-Day Trip-Ends Program (ZONESPRD.S): The program reads the zonal origins and destinations, described above, and apportions them among discrete hourly periods.

3) Jurisdiction level VMT Formatting Program (Pre_Local.S): The program summarizes modeled VMT at the jurisdiction level and writes a summary file to be used in the LOCAL.S program.

4) Time-of-Day VMT and speeds program (PEAK_SPREAD.S for the single season post-processor or PEAK_SPREAD_Seasonal.S for the three season post-processor): The program reads the AM, PM, and off-peak network link volumes produced by the travel demand model. It produces hourly volumes, VMT, and restrained speed for each highway link. The hourly VMT and highway speeds are sensitive to seasonal adjustment factors.

5) Running Emissions Program (RUNNING.S for the single season post-processor or RUNNING_Seasonal.S for the three season post-processor): The program computes hot stabilized emissions on a link-by-link and hour-by-hour basis. It reads 1) the hourly link VMT and highway speed files developed above, 2) MOBILE6-based running emission rates which are provided on the basis of speed, and 3) the county level trip proportions file. VOC, CO, and NOx emissions are produced from the program (PM 2.5 emissions are additionally produced from the three-season run).

6) Start/Soak Emissions Program (STRT_SKR.S for the single season post-processor or STRT_SKR_Seasonal.S for the three season post-processor): The program applies emission rates to the trip- ends to compute start-up and soaking emissions on a zone-by-zone and hour-by-hour basis. The program reads: 1) hourly trip-ends, 2) the MOBILE6-generated cold/hot starting rates, and 3) the county-level trip proportions file. Note that trip tables are not affected by seasonal adjustments. VOC, CO, and NOx emissions are produced from the program.

7) Local Emissions Program (LOCAL.S for the single season post-processor or LOCAL_Seasonal.S for the three season post-processor): The program computes hot stabilized emissions on a link-by-link and hour-by-hour basis. It reads 1) a file containing forecasted local/urban and local/rural VMT at the jurisdiction level and 2) PM2.5 and Arterial NOx stabilized rates specially developed for local roads. VOC, CO, and NOx emissions are produced from the program (PM 2.5 emissions are additionally produced from the three-season run).

A list of subdirectories established to execute post-processor work is shown on Table 14. Single-season and three-season flowcharts are shown on Figures 2 and 3.

Table 14 Post-Processor Subdirectories

Description of Contents	Subdirectory
Location of Post – Processor Executions/Outputs	
2002 Ozone Season VOC, CO, Nx	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2002
2002 Annual Nx Precursor, PM 2.5	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2002_Season
2010 Ozone Season VOC, CO, Nx	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2010
2010 Winter Season VOC, CO, Nx	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2010_WCO
2010 Annual Nx Precursor, PM 2.5	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2010_Season
2020 Ozone Season VOC, CO, Nx	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2020
2020 Winter Season VOC, CO, Nx	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2020_WCO
2020 Annual Nx Precursor, PM 2.5	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2020_Season
2030 Ozone Season VOC, CO, Nx	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2030
2030 Winter Season VOC, CO, Nx	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2030_WCO
2030 Annual Nx Precursor, PM 2.5	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\2030_Season
Emission Rate Inputs	
2002 VOC, CO, Nx rates Ozone Season	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2002
2002 VOC, CO, Nx, PM rates– 3 Seasons	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2002_Season
2010 VOC, CO, Nx rates Ozone Season	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2010
2010 VOC, CO, Nx rates– Winter Season	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2010_WCO
2010 VOC, CO, Nx, PM rates– 3 Seasons	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2002_Season
2020 VOC, CO, Nx rates Ozone Season	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2020
2020 VOC, CO, Nx rates– Winter Season	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2020_WCO
2020 VOC, CO, Nx, PM rates– 3 Seasons	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2020_Season
2030 VOC, CO, Nx rates Ozone Season	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2030
2030 VOC, CO, Nx rates– Winter Season	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2030_WCO
2030 VOC, CO, Nx, PM rates– 3 Seasons	I:\CGV2_1D_50_Aug_06_Conformity2007\EMISSIONS\M6RATES\2030_Season
Travel Model Inputs	
2002 Travel Model Files	I:\CGV2_1D_50_Aug_06_Conformity2007\2002
2010 Travel Model Files	I:\CGV2_1D_50_Aug_06_Conformity2007\2010
2020 Travel Model Files	I:\CGV2_1D_50_Aug_06_Conformity2007\2020
2030 Travel Model Files	I:\CGV2_1D_50_Aug_06_Conformity2007\2030

Figure 2

Mobile Emissions Post Processor
Ozone Season / Wintertime Emissions Data Processing Flowchart -- Job stream executed once with one set of environment variables.

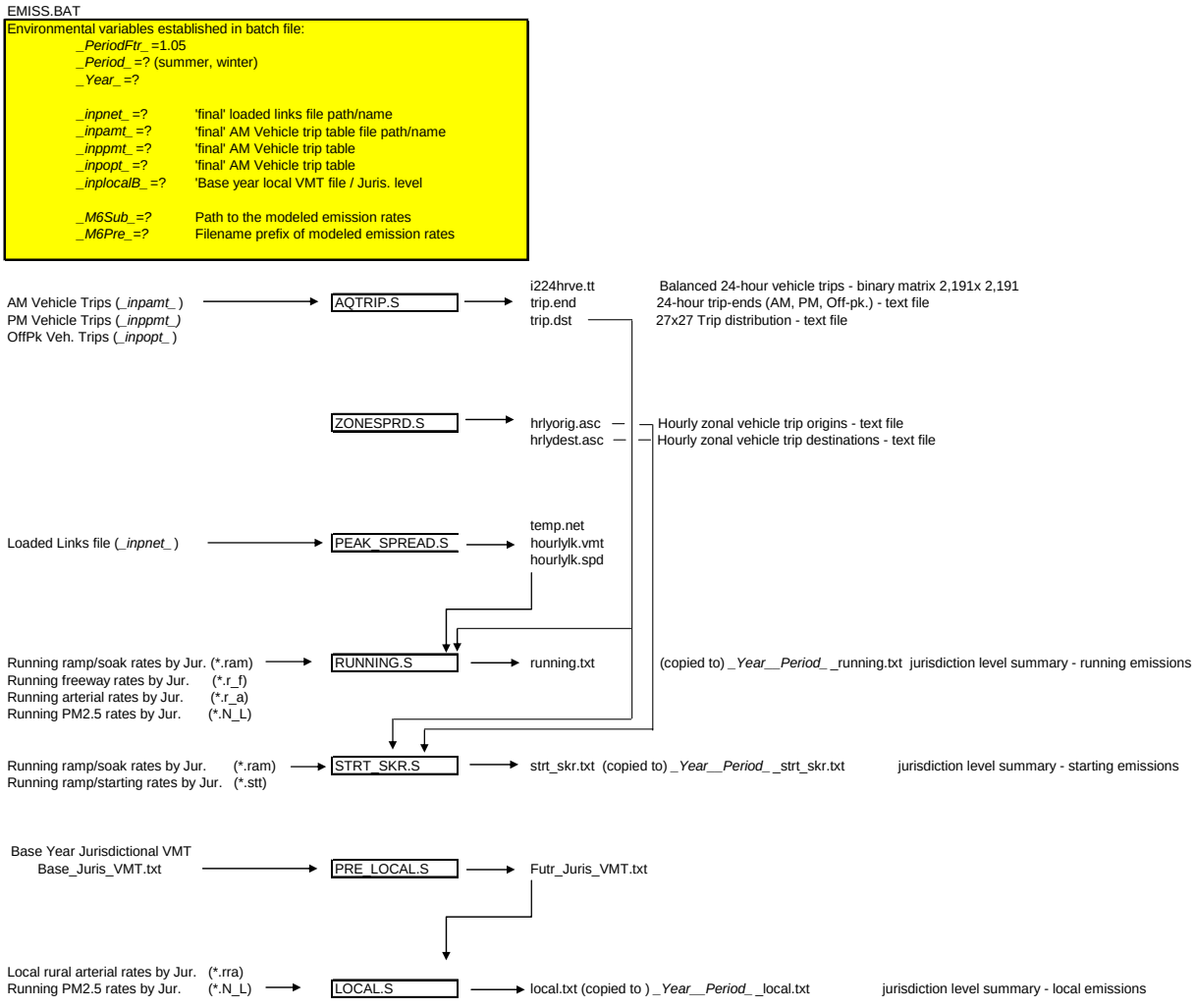
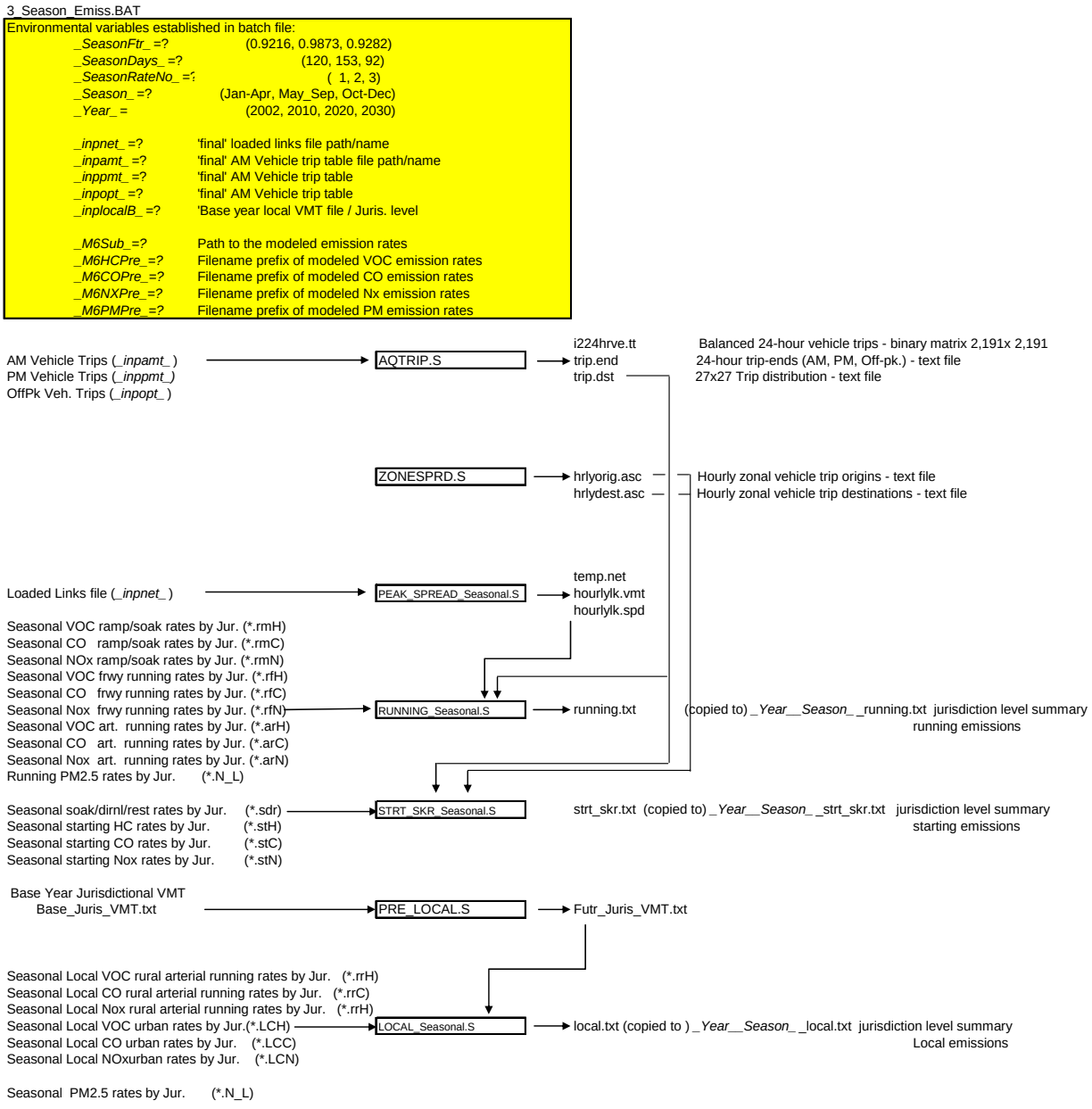


Figure 3

Mobile Emissions Post Processor
Multiple Season Emissions Data Processing Flowchart -- Job stream executed 3 times with altered environment variables.



ATTACHMENT E

ATTACHMENT E

Memo

To: SIP Air Quality Files

From: Eulalie G. Lucas

Date: February 5, 2007

Re: Vehicle Related Emissions: Diurnal and Resting Loss for the 8-Hour Ozone Standard SIP

This memo illustrates the calculation of Diurnal and Resting Loss emissions associated with the 8-hour ozone standard SIP and documents recent updates to the travel portion of the analysis. Maureen Mullen of E.H. Pechan & Associates documented the development of Mobile factors in a memo dated January 27, 2003. Applying the approach developed by E.H. Pechan & Associates emissions rates were developed using version 6.2 of Mobile model.

As with the other components of the Mobile source inventory the following two updates were used in the calculation of diurnal and resting loss emissions: (1) Base year 2002 vehicle registration data were replaced with later 2005 registration data for the District of Columbia, Maryland and Virginia. (2) Staff prepared updated vehicle forecasts based upon the 2005 control totals, in conjunction with growth factors previously developed by DTP staff and documented in the October 2005 Air Quality Conformity report.

Vehicle ownership forecasts reflect trends through time for each jurisdiction; given the 2005 data, the slope of the forecast trend line in each jurisdiction was maintained but revised to 'intercept' 2005 conditions. The attached graph for Prince George's County illustrates the approach used for forecasting vehicle registration and Table 1 shows the summary of vehicle registration forecasts. Also included is a copy of a spreadsheet, Table 2, displaying the calculation of diurnals and resting loss emissions for year 2009 controlled conditions. Diurnal and Resting Loss emissions for the other milestone years 2002, 2008 controlled and uncontrolled and 2009 uncontrolled are available in the SIP mobile source files.

The calculation of these emissions is an off-line process utilizing a spreadsheet format with a very basic calculation:

Number of vehicles by jurisdiction X jurisdiction emissions factor = Emissions

Attachments (3)

TABLE 1
VEHICLE REGISTRATION FORECASTS BY JURISDICTION (USING GROWTH RATES & 2005 VIN)
REGISTRATIONS ADJUSTED TO YEAR 2005

Jurisdiction	2002	2005	2008	2009	2010	2020	2030
District of Columbia	254,645	**258089**	261,533	262,681	263,829	275,309	286,788
Calvert	73,179	**82957**	92,735	95,994	99,254	131,847	164,441
Charles	114,048	**124127**	134,206	137,565	140,925	174,520	208,116
Frederick	190,883	**207247**	223,611	229,065	234,520	289,065	343,611
Montgomery	638,573	**681537**	724,501	738,822	753,144	896,357	1,039,571
Prince George's	560,595	**588643**	616,691	626,040	635,390	728,883	822,376
Alexandria	130,371	**132130**	133,889	134,476	135,062	140,927	146,792
Arlington	126,600	**128304**	130,008	130,576	131,144	136,823	142,502
Fairfax	745,721	**787210**	828,699	842,529	856,359	994,656	1,132,953
Loudoun	184,988	**203133**	221,278	227,326	233,375	293,858	354,341
Prince William	299,706	**323356**	347,006	354,889	362,773	441,606	520,440
Stafford	82,415	**91656**	100,897	103,978	107,058	137,863	168,668
Total	3401724	3608389	3815054	3883942	3952831	4641714	5330598

The above forecasts are based on 2005 vehicle registration data decoded from raw VIN numbers provided by District of Columbia DMV, Maryland MVA, and Virginia DMV.

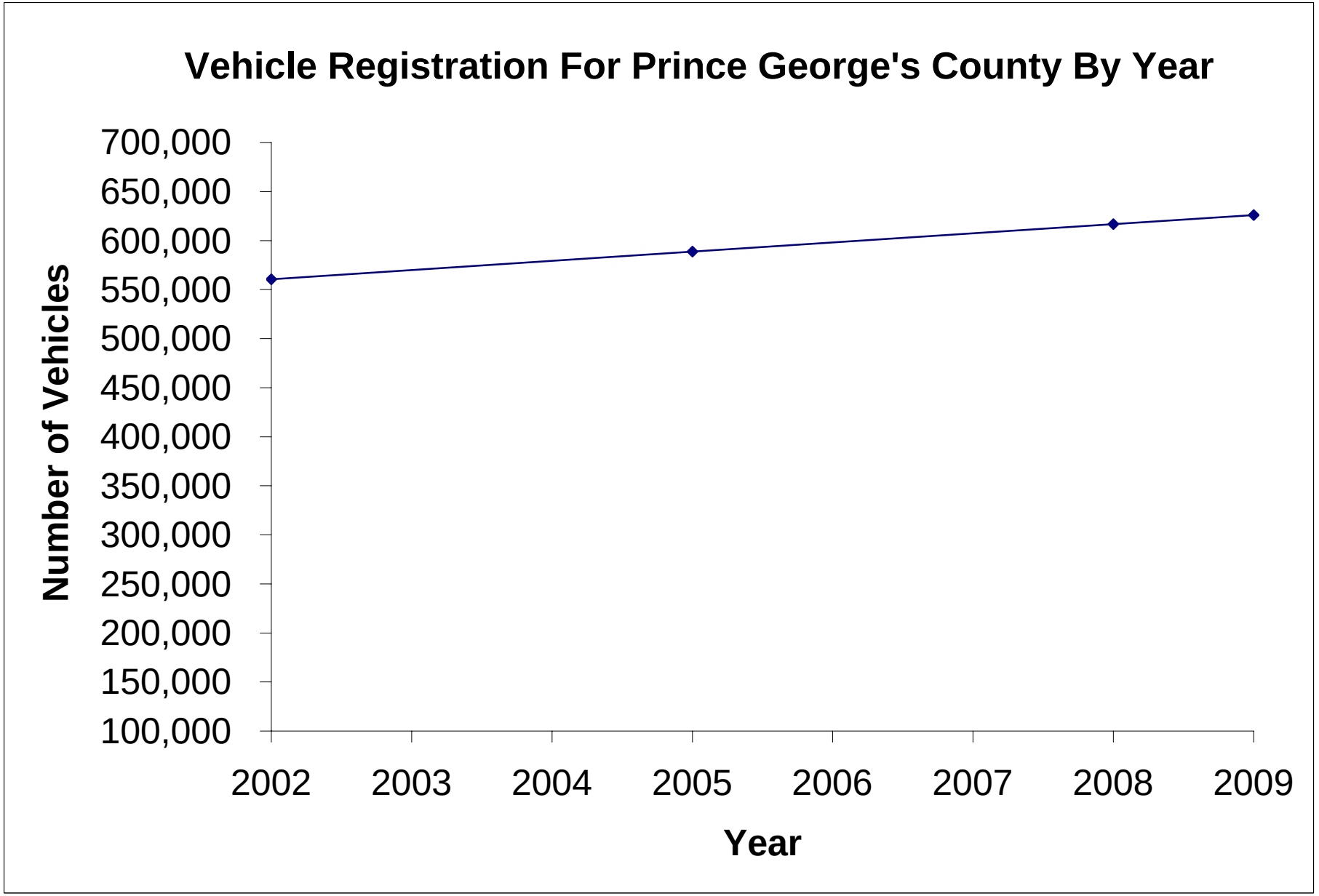
Table - 2

DIURNAL AND RESTING LOSS EMISSIONS
VOC
2009 Controlled

Jurisdiction	TOTAL VEHICLES	FACTORS DIURNAL (gm/day/veh)	FACTORS RESTGL (gm/hr/veh)	EMISSIONS DIURNAL (Tons/day)	EMISSIONS RESTGL (Tons/day)
District of Columbia	262,681	0.453	2.263	0.1285	0.6422
Montgomery	738,822	0.448	1.948	0.3576	1.5547
Prince Georges	626,040	0.539	2.524	0.3645	1.7070
Frederick	229,065	0.388	1.723	0.0960	0.4264
Charles	137,565	0.555	2.627	0.0825	0.3904
Calvert	95,994	0.559	2.677	0.0580	0.2776
Arlington	130,576	0.428	2.097	0.0604	0.2958
Alexandria	134,476	0.361	1.742	0.0524	0.2531
Fairfax	842,529	0.412	1.938	0.3750	1.7639
Loudoun	227,326	0.378	1.798	0.0928	0.4415
Prince William	354,889	0.443	2.174	0.1698	0.8335
MSA - SUBTOTAL	3,779,965			1.838	8.586
MODELED AREA					
TOTAL	3,779,965			1.838	8.586

Note: 98% of vehicles, which are gas operated, are used to compute Diurnal and Resting Loss emissior
Based on 2005 vehicle registration

	EMISSIONS DIURNAL (Tons/day)	EMISSIONS RESTGL (Tons/day)
DC	0.13	0.64
MONTC	0.36	1.55
PG	0.36	1.71
FRED	0.10	0.43
CHAS	0.08	0.39
CAL	0.06	0.28
ARL	0.06	0.30
ALEX	0.05	0.25
FFX	0.37	1.76
LDN	0.09	0.44
PR.W	0.17	0.83
TOTAL	1.838	8.586


Vehicle Registration For Prince George's County By Year
Number of Vehicles
700,000
650,000
600,000
550,000
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
2002
2003
2004
2005
2006
2007
2008
2009
Year

ATTACHMENT F

National Capital Region Transportation Planning Board

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

MEMORANDUM

February 6, 2007

TO: Files

FROM: Jane A. Posey
Senior Transportation Engineer

SUBJECT: 2008 and 2009 School Bus and Transit Bus Off-line Emissions Development for 8-Hour Ozone SIP

This memo discusses the development of ozone season VOC and NOx emissions estimates for transit buses and school buses for the 8-hour ozone SIP. Estimates were calculated for 2008 and 2009 forecast years for the 8-hour ozone SIP geography, which is shown on the map included as Exhibit 1.

For the development of school bus and transit bus emissions estimates staff used survey data collected from regional transit agencies. Collected data include fleet distribution by age, daily VMT and average operating speeds. The collection and use of these data are thoroughly documented in Appendix H of each year's air quality conformity report.

Emission Estimates

For the emissions estimates, base year (survey) daily VMT figures were factored to produce daily VMT for each forecast year. Fleet age distributions from the survey were input to the Mobile6.2 model to produce emission factors for each pollutant, by speed. Using the appropriate emission factor, based on the average operating speed for each provider, staff calculated VOC and NOx emissions for transit buses and school buses for the two analysis years. Exhibit 2 shows 2008 bus emission factors. Exhibit 3 shows the completed school bus table with resulting emissions for 2008. Exhibit 4 shows the completed transit bus table for 2008. Tables for 2009 are similar, and are available upon request.

Results

The following table shows the 2008 and 2009 school bus and transit bus emissions estimates resulting from the procedure described above:

	Base 2002		2008 Uncontrolled		2008 Controlled		2009 Uncontrolled		2009 Controlled	
	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx
School Buses	0.42	5.97	0.40	5.34	0.40	5.23	0.39	5.14	0.38	4.97
Transit Buses	0.38	6.43	0.22	4.64	0.22	4.42	0.23	4.89	0.23	4.52

EXHIBIT 1
Washington, D.C. - Maryland - Virginia
8-Hour Ozone Non-Attainment Area

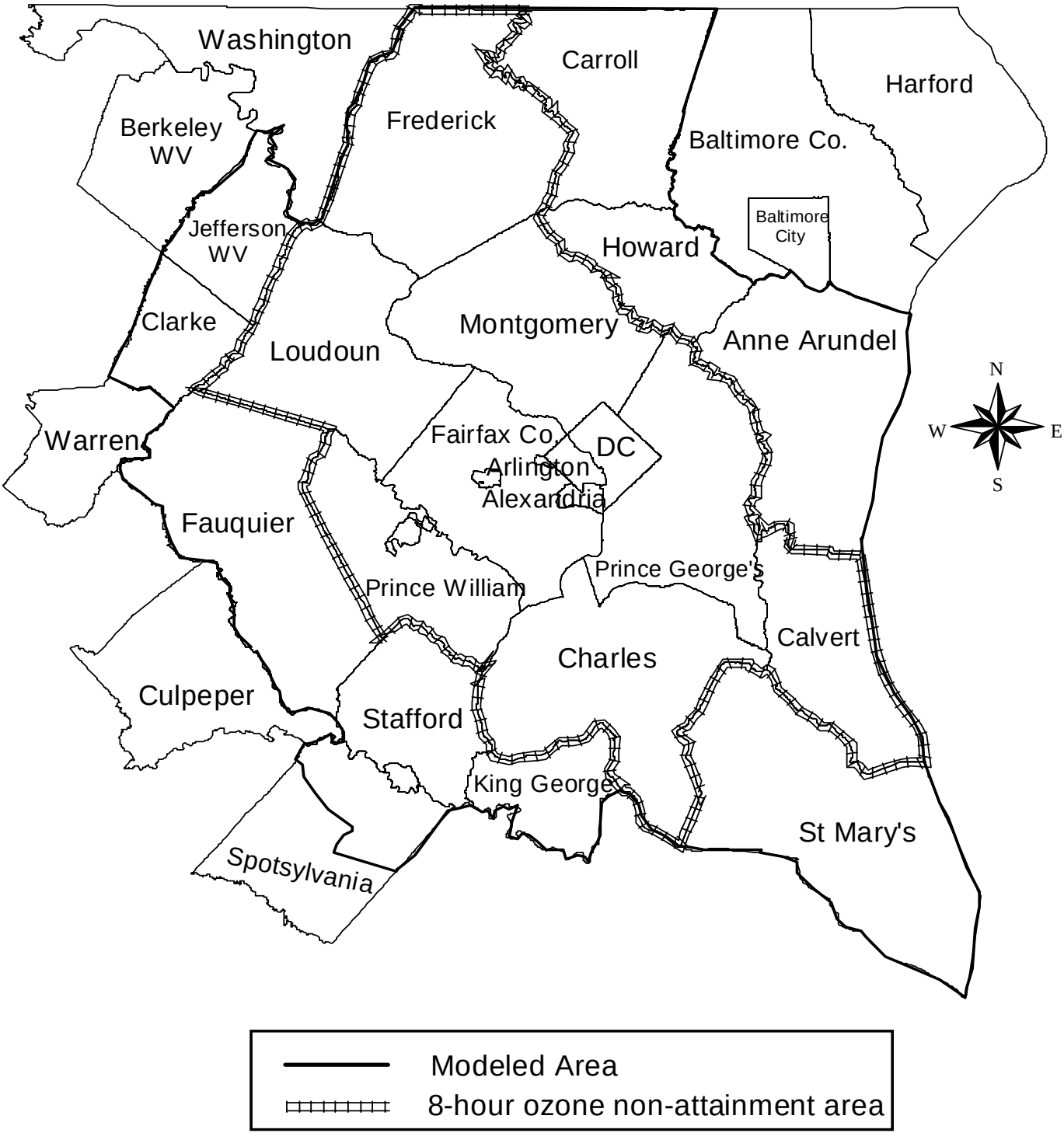


Exhibit 2

MWCOG 2008 Ozone Season Diesel Bus Emission Factors
(8-hour ozone non-attainment area)

	Diesel Bus Emission Factors (grams/mile)			
	School Bus		Transit Bus	
Speed (mph)	VOC	NOx	VOC	NOx
1.00	2.164	18.655	1.374	22.868
2.00	2.164	18.655	1.374	22.868
3.00	2.077	18.02	1.318	22.082
4.00	1.967	17.227	1.249	21.101
5.00	1.902	16.751	1.207	20.512
6.00	1.766	15.79	1.121	19.325
7.00	1.668	15.104	1.059	18.476
8.00	1.595	14.59	1.012	17.84
9.00	1.538	14.19	0.976	17.345
10.0	1.493	13.87	0.948	16.949
11.0	1.413	13.332	0.897	16.285
12.0	1.346	12.885	0.854	15.731
13.0	1.289	12.506	0.818	15.263
14.0	1.24	12.181	0.787	14.861
15.0	1.198	11.9	0.76	14.513
16.0	1.144	11.57	0.726	14.106
17.0	1.097	11.279	0.696	13.746
18.0	1.055	11.021	0.669	13.426
19.0	1.017	10.79	0.645	13.14
20.0	0.983	10.581	0.624	12.883
21.0	0.945	10.384	0.6	12.639
22.0	0.911	10.205	0.578	12.417
23.0	0.879	10.041	0.558	12.214
24.0	0.851	9.891	0.54	12.029
25.0	0.824	9.753	0.523	11.858
26.0	0.797	9.653	0.506	11.734
27.0	0.772	9.56	0.49	11.619
28.0	0.749	9.474	0.475	11.513
29.0	0.727	9.394	0.461	11.414
30.0	0.707	9.319	0.449	11.321
31.0	0.687	9.299	0.436	11.297
32.0	0.668	9.281	0.424	11.274
33.0	0.651	9.263	0.413	11.253
34.0	0.635	9.247	0.403	11.232
35.0	0.619	9.232	0.393	11.213
36.0	0.605	9.287	0.384	11.282
37.0	0.591	9.34	0.375	11.347
38.0	0.579	9.389	0.367	11.408
39.0	0.566	9.437	0.359	11.467

Exhibit 2

MWCOG 2008 Ozone Season Diesel Bus Emission Factors
(8-hour ozone non-attainment area)

	Diesel Bus Emission Factors (grams/mile)			
	School Bus		Transit Bus	
Speed (mph)	VOC	NOx	VOC	NOx
40.0	0.555	9.482	0.352	11.522
41.0	0.545	9.616	0.346	11.689
42.0	0.535	9.745	0.339	11.848
43.0	0.525	9.867	0.333	11.999
44.0	0.517	9.984	0.328	12.144
45.0	0.508	10.096	0.322	12.282
46.0	0.501	10.324	0.318	12.564
47.0	0.494	10.542	0.314	12.833
48.0	0.488	10.751	0.31	13.092
49.0	0.482	10.951	0.306	13.34
50.0	0.476	11.144	0.302	13.578
51.0	0.471	11.49	0.299	14.006
52.0	0.467	11.823	0.296	14.418
53.0	0.463	12.143	0.294	14.814
54.0	0.459	12.451	0.291	15.195
55.0	0.455	12.749	0.289	15.563
56.0	0.453	13.256	0.288	16.19
57.0	0.451	13.745	0.286	16.795
58.0	0.449	14.217	0.285	17.379
59.0	0.447	14.673	0.284	17.943
60.0	0.445	15.115	0.283	18.489
61.0	0.445	15.85	0.283	19.399
62.0	0.445	16.562	0.283	20.279
63.0	0.445	17.252	0.283	21.132
64.0	0.445	17.92	0.283	21.958
65.0	0.445	18.567	0.283	22.759

EXHIBIT 3

FY2006-2011 TIP / 2005 CLRP AIR QUALITY CONFORMITY ANALYSIS

2008 SCHOOL BUS CHARACTERISTICS / EMISSIONS
(8-hour ozone area *)

Jurisdiction	2002 Daily VMT	2008 Daily VMT	Average Speed	VOC			NOx			Ozone Season CO		
				factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
District of Columbia	12,696	13,331	14	1.2400	16530.1920	0.0182	12.1810	162382.4748	0.1790	4.8680	64894.3344	0.0715
Montgomery	100,000	105,000	30	0.7070	74235.0000	0.0818	9.3190	978495.0000	1.0786	2.2780	239190.0000	0.2637
Prince George's	129,967	136,465	30	0.7070	96481.0025	0.1064	9.3190	1271720.5967	1.4018	2.2780	310868.0673	0.3427
Frederick	25,589	26,868	30	0.7070	18995.9942	0.0209	9.3190	250387.0856	0.2760	2.2780	61206.3291	0.0675
Charles	20,801	21,841	30	0.7070	15441.6224	0.0170	9.3190	203536.7450	0.2244	2.2780	49753.9119	0.0548
Calvert	25,653	26,936	30	0.7070	19043.5046	0.0210	9.3190	251013.3224	0.2767	2.2780	61359.4107	0.0676
Alexandria	2,028	2,129	25	0.8240	1754.6256	0.0019	9.7530	20768.0382	0.0229	2.7540	5864.3676	0.0065
Arlington	2,600	2,730	25	0.8240	2249.5200	0.0025	9.7530	26625.6900	0.0293	2.7540	7518.4200	0.0083
Fairfax	96,524	101,350	30	0.7070	71654.5914	0.0790	9.3190	944482.5138	1.0411	2.2780	230875.7556	0.2545
Prince William	36,114	37,920	30	0.7070	26809.2279	0.0296	9.3190	353373.6843	0.3895	2.2780	86381.0766	0.0952
Loudoun	28,347	29,764	30	0.7070	21043.3955	0.0232	9.3190	277373.9777	0.3058	2.2780	67803.1893	0.0747
TOTAL	480,319				364238.6759	0.4015		4740159.1283	5.2251		1185714.8625	1.3070

* MSA excluding Stafford County

FY2006-2011 TIP / 2005 CLRP AIR QUALITY CONFORMITY ANALYSIS

2008 TRANSIT BUS CHARACTERISTICS / EMISSIONS
(8-hour ozone area*)

Jurisdiction	Operator	2008 VMT w/o Stafford	Average Speed	VOC			NOx			Ozone Season CO		
				factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
District of Columbia	Metrobus	50,552	*10*	0.9480	47923.2960	0.0528	16.9490	856805.8480	0.9445	8.7400	441824.4800	0.4870
District of Columbia	MTA Commuter buses	2,510	*45*	0.3220	808.2200	0.0009	12.2820	30827.8200	0.0340	2.3160	5813.1600	0.0064
District of Columbia	Peter Pan / Trailways	200	*55*	0.2890	57.8000	0.0001	15.5630	3112.6000	0.0034	2.3860	477.2000	0.0005
District of Columbia	Carolina Trailways	20	*55*	0.2890	5.7800	0.0000	15.5630	311.2600	0.0003	2.3860	47.7200	0.0001
District of Columbia	Capitol Trailways	100	*55*	0.2890	28.9000	0.0000	15.5630	1556.3000	0.0017	2.3860	238.6000	0.0003
District of Columbia	Martz / Grey Line sightseeing	500	55	0.2890	144.5000	0.0002	15.5630	7781.5000	0.0086	2.3860	1193.0000	0.0013
District of Columbia	New World Tours	100	*20*	0.6240	62.4000	0.0001	12.8830	1288.3000	0.0014	4.7630	476.3000	0.0005
District of Columbia	Georgetown U. shuttle	100	15	0.7600	76.0000	0.0001	14.5130	1451.3000	0.0016	6.3070	630.7000	0.0007
District of Columbia	American U. shuttle	83	20	0.6240	51.7920	0.0001	12.8830	1069.2890	0.0012	4.7630	395.3290	0.0004
District of Columbia	George Washington U shuttle	100	*15*	0.7600	76.0000	0.0001	14.5130	1451.3000	0.0016	6.3070	630.7000	0.0007
District of Columbia	EPA Shuttle	200	*15*	0.7600	152.0000	0.0002	14.5130	2902.6000	0.0032	6.3070	1261.4000	0.0014
District of Columbia	USDOT Shuttle	200	*15*	0.7600	152.0000	0.0002	14.5130	2902.6000	0.0032	6.3070	1261.4000	0.0014
District of Columbia	Gallaudet Shuttle	100	*15*	0.7600	76.0000	0.0001	14.5130	1451.3000	0.0016	6.3070	630.7000	0.0007
District of Columbia	Metro Access - paratransit	5,000	15	0.7600	3800.0000	0.0042	14.5130	72565.0000	0.0800	6.3070	31535.0000	0.0348
Maryland	Corridor Transit (CTC)	1,265	18	0.6690	846.2850	0.0009	13.4260	16983.8900	0.0187	5.2780	6676.6700	0.0074
Maryland	Peter Pan / Trailways	1,800	*55*	0.2890	520.2000	0.0006	15.5630	28013.4000	0.0309	2.3860	4294.8000	0.0047
Maryland	Carolina Trailways	225	*55*	0.2890	65.0250	0.0001	15.5630	3501.6750	0.0039	2.3860	536.8500	0.0006
Maryland	Capitol Trailways	400	*55*	0.2890	115.6000	0.0001	15.5630	6225.2000	0.0069	2.3860	954.4000	0.0011
Maryland	Martz / Grey Line sightseeing	2,250	55	0.2890	650.2500	0.0007	15.5630	35016.7500	0.0386	2.3860	5368.5000	0.0059
Maryland	New World Tours	100	*20*	0.6240	62.4000	0.0001	12.8830	1288.3000	0.0014	4.7630	476.3000	0.0005
Montgomery	Metrobus	17,262	*15*	0.7600	13119.1200	0.0145	14.5130	250523.4060	0.2762	6.3070	108871.4340	0.1200
Montgomery	MTA Commuter buses	2,180	*45*	0.3220	701.9600	0.0008	12.2820	26774.7600	0.0295	2.3160	5048.8800	0.0056
Montgomery	Mont. Co. Ride-On	35,616	15	0.7600	27068.1600	0.0298	14.5130	516895.0080	0.5698	6.3070	224630.1120	0.2476
Prince George's	Metrobus	24,660	*15*	0.7600	18741.6000	0.0207	14.5130	357890.5800	0.3945	6.3070	155530.6200	0.1714
Prince George's	MTA Commuter buses	6,840	*45*	0.3220	2202.4800	0.0024	12.2820	84008.8800	0.0926	2.3160	15841.4400	0.0175
Prince George's	PG Co. The Bus	9,723	15	0.7600	7389.4800	0.0081	14.5130	141109.8990	0.1555	6.3070	61322.9610	0.0676

2008 TRANSIT BUS CHARACTERISTICS / EMISSIONS
(8-hour ozone area*)

Jurisdiction	Operator	2008 VMT w/o Stafford	Average Speed	VOC			NOx			Ozone Season CO		
				factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
Prince George's	ShuttleUM (U. of MD)	1,864	11	0.8970	1672.0080	0.0018	16.2850	30355.2400	0.0335	8.0760	15053.6640	0.0166
Prince George's	P.G. Co. paratransit	3,000	*15*	0.7600	2280.0000	0.0025	14.5130	43539.0000	0.0480	6.3070	18921.0000	0.0209
Frederick	MTA Commuter buses	370	*45*	0.3220	119.1400	0.0001	12.2820	4544.3400	0.0050	2.3160	856.9200	0.0009
Frederick	Fredrick Co. TransiT	3,082	12	0.8540	2632.0280	0.0029	15.7310	48482.9420	0.0534	7.5240	23188.9680	0.0256
Charles	MTA Commuter buses	2,290	*45*	0.3220	737.3800	0.0008	12.2820	28125.7800	0.0310	2.3160	5303.6400	0.0058
Calvert	MTA Commuter buses	1,080	*45*	0.3220	347.7600	0.0004	12.2820	13264.5600	0.0146	2.3160	2501.2800	0.0028
Virginia	Metrobus	30,825	*15*	0.7600	23427.0000	0.0258	14.5130	447363.2250	0.4931	6.3070	194413.2750	0.2143
Virginia	Lee Coaches	49	*45*	0.3220	15.7780	0.0000	12.2820	601.8180	0.0007	2.3160	113.4840	0.0001
Virginia	Brooks Transit	525	*45*	0.3220	169.0500	0.0002	12.2820	6448.0500	0.0071	2.3160	1215.9000	0.0013
Virginia	Quicks Commuter Service	924	*45*	0.3220	297.5280	0.0003	12.2820	11348.5680	0.0125	2.3160	2139.9840	0.0024
Virginia	National Coach Works	1,155	*45*	0.3220	371.9100	0.0004	12.2820	14185.7100	0.0156	2.3160	2674.9800	0.0029
Virginia	Greyhound / Trailways (VA)	3,500	*55*	0.2890	1011.5000	0.0011	15.5630	54470.5000	0.0600	2.3860	8351.0000	0.0092
Virginia	Carolina Trailways	158	*55*	0.2890	45.5175	0.0001	15.5630	2451.1725	0.0027	2.3860	375.7950	0.0004
Virginia	Martz / Grey Line sightseeing	1,575	55	0.2890	455.1750	0.0005	15.5630	24511.7250	0.0270	2.3860	3757.9500	0.0041
Virginia	New World Tours	70	*20*	0.6240	43.6800	0.0000	12.8830	901.8100	0.0010	4.7630	333.4100	0.0004
Alexandria	Alexandria DASH	3,454	13	0.8180	2825.3720	0.0031	15.2630	52718.4020	0.0581	7.0560	24371.4240	0.0269
Alexandria	Old Town "trolley" buses	300	*20*	0.6240	187.2000	0.0002	12.8830	3864.9000	0.0043	4.7630	1428.9000	0.0016
Alexandria	Alexandria DOT-paratransit	924	*15*	0.7600	702.2400	0.0008	14.5130	13410.0120	0.0148	6.3070	5827.6680	0.0064
Arlington	Arlington Co. ART	794	16	0.7260	576.4440	0.0006	14.1060	11200.1640	0.0123	5.9210	4701.2740	0.0052
Arlington	Crystal City Express	96	*15*	0.7600	72.9600	0.0001	14.5130	1393.2480	0.0015	6.3070	605.4720	0.0007
Arlington	Skyline Crystal Express	144	*15*	0.7600	109.4400	0.0001	14.5130	2089.8720	0.0023	6.3070	908.2080	0.0010
Arlington	Arlington STAR-paratransit	3,245	*15*	0.7600	2466.2000	0.0027	14.5130	47094.6850	0.0519	6.3070	20466.2150	0.0226
Fairfax	Fairfax Connector	18,036	*15*	0.7600	13707.3600	0.0151	14.5130	261756.4680	0.2885	6.3070	113753.0520	0.1254
Fairfax	Washington Flyer Coach Service	1,370	65	0.2830	387.7100	0.0004	22.7590	31179.8300	0.0344	2.9500	4041.5000	0.0045
Fairfax	Fairfax Co. Fastran- paratransit	11,427	15	0.7600	8684.5200	0.0096	14.5130	165840.0510	0.1828	6.3070	72070.0890	0.0794
Fairfax	City of Fairfax CUE	1,483	15	0.7600	1127.0800	0.0012	14.5130	21522.7790	0.0237	6.3070	9353.2810	0.0103

2008 TRANSIT BUS CHARACTERISTICS / EMISSIONS
(8-hour ozone area*)

Jurisdiction	Operator	2008 VMT w/o Stafford	Average Speed	VOC			NOx			Ozone Season CO		
				factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)	factors (g/mile)	emissions (grams)	emissions (tons)
Fairfax	City of Ffx, City Wheels-paratransit.	100	*15*	0.7600	76.0000	0.0001	14.5130	1451.3000	0.0016	6.3070	630.7000	0.0007
Fairfax	City of Falls Ch. Fare Wheels-paratransit	100	*15*	0.7600	76.0000	0.0001	14.5130	1451.3000	0.0016	6.3070	630.7000	0.0007
Prince William	PRTC Omnilink	4,038	*15*	0.7600	3068.8800	0.0034	14.5130	58603.4940	0.0646	6.3070	25467.6660	0.0281
Prince William	PRTC OmniRide	5,700	27	0.4900	2793.0000	0.0031	11.6190	66228.3000	0.0730	3.4760	19813.2000	0.0218
Loudoun	Loudoun Transportation Assc.	4,532	15	0.7600	3444.3200	0.0038	14.5130	65772.9160	0.0725	6.3070	28583.3240	0.0315
Loudoun	Loudoun Commuter Service	1,866	*25*	0.5230	975.9180	0.0011	11.8580	22127.0280	0.0244	3.7650	7025.4900	0.0077
Loudoun	Loudoun Transit (LCTA)-paratransit	100	*15*	0.7600	76.0000	0.0001	14.5130	1451.3000	0.0016	6.3070	630.7000	0.0007
TOTAL		270,262			199879.3465	0.2203		4013459.2545	4.4241		1695478.7690	1.8689

* MSA excluding Stafford County

Notes:

1) Used WMATA percent VMT by jurisdiction from FY03-08 AQC, Appendix I (page I-3)
2) Assumed average freeway speed of 55 mph where higher than 55 speed limit is available, and 45 mph where speed limit is 55

ATTACHMENT G

ATTACHMENT G

National Capital Region Transportation Planning Board

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

MEMORANDUM

February 8, 2007

TO: Files

FROM: Jane A. Posey
Senior Transportation Engineer

SUBJECT: 2008 and 2009 Auto Access to Transit Off-line Emissions Development for 8-Hour Ozone SIP

This memo discusses the development of ozone season VOC and NOx emissions estimates for auto access to transit for the 8-hour ozone SIP. Estimates were calculated for 2008 and 2009 forecast years for the 8-hour ozone SIP geography, which is shown on the map included as Exhibit 1.

Emission Estimates

Emissions factors for auto access to transit were developed for each component of the trip cycle: a start up rate for trip origins, a running rate for the running component, and a hot soak rate for trip destinations. These three rates represent an average of the twelve composite rates for jurisdictions in the non-attainment area and for seven MOBILE6 vehicle types. Heavy Duty Diesel fractions were zeroed out of the VMT Mix. This adjustment was made based on the assumption that heavy duty vehicles, such as tractor trailers, are not used by commuters for trips to and from transit locations or to park and ride lots.

Survey data, including information about park-and-ride lot occupancy and user trip origin, provide a base year (2002) trip total and VMT total for each parking lot. Forecast year data were estimated by applying the transit trip growth rate from the travel demand portion of the air quality conformity analysis of the 2005 Constrained Long Range Plan (CLRP) and the FY2006-2011 Transportation Improvement Plan (TIP).

Emissions were calculated simply by multiplying each emissions rate by the appropriate part of the trip cycle. The general process is:

EMISSIONS	=	TRAVEL	X	EMISSIONS RATE
Start Up	=	Trip Origins	X	Rate per Trip
Running	=	VMT	X	Rate by Vehicle Speed
Hot Soak	=	Trip Destinations	X	Rate per Trip

Running emissions were calculated by applying the appropriate factor (35 mph for arterials and 45 mph for freeways) to VMT within the non-attainment area. Trip-end emissions (cold start and hot soak) were calculated by applying the appropriate factor to each trip (to and from the parking lot) in the non-attainment area. For trips originating outside the MSA, only one cold-start and one hot-soak were included in the calculation.

Exhibits 2, 3, 4, and 5 show the VOC and NOx auto access calculations provided for the 8-hour ozone SIP for the 2008 and 2009 forecast years.

EXHIBIT 1
Washington, D.C. - Maryland - Virginia
8-Hour Ozone Non-Attainment Area

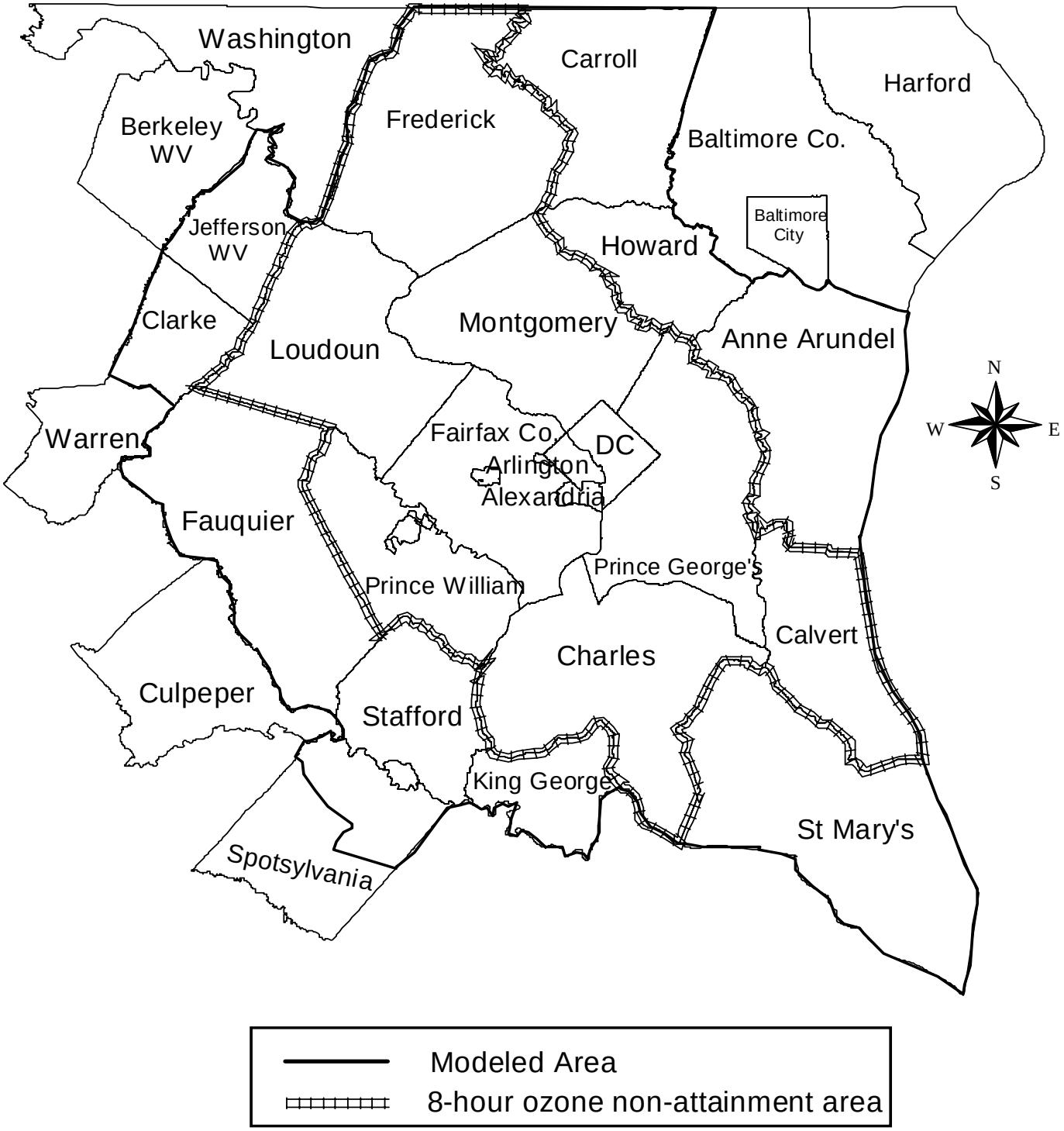


EXHIBIT 2

2008 VOC AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
FY2006-2011 TIP AND 2005 CLRP AIR QUALITY CONFORMITY

										E M I S S I O N S									
LOCATION		2002			2008	2008	AVERAGE	2002	2008	ARTERIAL	FREEWAY	ARTERIAL	FREEWAY	COLD START	RUNNING			HOT SOAK	TOTAL
	OUTSIDE MSA	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate	TRIP LENGTH	VMT	VMT	%		VMT	VMT		Arterial	Freeway	Total Running		(tons/day)
														Rate (gm/mile)	Rate (gm/mile)	Rate (gm/mile)		Rate (gm/mile)	
					1.10	1.10								1.1500	0.1983	0.1752		0.6100	
COMMUTER RAIL LOTS																			
BRUNSWICK 25%	25	305	102	**407**	334	111	7.5	3052.5	3,343	57	43	1,905	1,437	0.0010	0.0008	0.0006	0.0014	0.0005	0.0029
PT OF ROCKS 25%	25	204	68	**272**	223	74	7.5	2040	2,234	57	43	1,273	961	0.0007	0.0006	0.0004	0.0009	0.0004	0.0019
DICKERSON	0	15	0	**15**	16	0	7.5	112.5	123	57	43	70	53	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
BARNESVILLE	0	46	0	**46**	50	0	7.5	345	378	57	43	215	162	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
GERMANTOWN	0	386	0	**386**	423	0	7.5	2895	3,170	57	43	1,807	1,363	0.0011	0.0008	0.0005	0.0013	0.0006	0.0030
MET GROVE	0	352	0	**352**	385	0	7.5	2640	2,891	57	43	1,648	1,243	0.0010	0.0007	0.0005	0.0012	0.0005	0.0027
WAS GROVE	0	15	0	**15**	16	0	7.5	112.5	123	57	43	70	53	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
GARRETT PARK	0	22	0	**22**	24	0	7.5	165	181	57	43	103	78	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002
BOWIE 50%	50	188	188	**375**	205	205	7.5	2812.5	3,080	57	43	1,756	1,324	0.0008	0.0008	0.0005	0.0013	0.0004	0.0025
SEABROOK 15%	15	224	40	**264**	246	43	7.5	1980	2,168	57	43	1,236	932	0.0007	0.0005	0.0004	0.0009	0.0004	0.0019
KENSINGTON	0	45	0	**45**	49	0	7.5	337.5	370	57	43	211	159	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
LAUREL 30%	30	209	90	**299**	229	98	7.5	2242.5	2,456	57	43	1,400	1,056	0.0007	0.0006	0.0004	0.0010	0.0004	0.0021
GAITHESBURG	0	280	0	**280**	307	0	7.5	2100	2,300	57	43	1,311	989	0.0008	0.0006	0.0004	0.0010	0.0004	0.0021
BERWYN HEIGHTS	0	30	0	**30**	33	0	4.5	135	148	57	43	84	64	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002
RIVERDALE	0	65	0	**65**	71	0	4.5	292.5	320	57	43	183	138	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004
								0	0										
METRO RAIL LOTS								0	0										
ADDISON ROAD 40%	40	791	527	**1318**	866	577	7.5	9885	10,825	57	43	6,171	4,655	0.0029	0.0027	0.0018	0.0045	0.0016	0.0090
ARCHIVES	0	12	0	12	13	0	4.5	54	59	57	43	34	25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
ARLING	0	10	0	10	11	0	4.5	45	49	57	43	28	21	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
BALLSTON	0	1175	0	1175	1287	0	4.5	5287.5	5,791	57	43	3,301	2,490	0.0033	0.0014	0.0010	0.0024	0.0017	0.0074
BENN.RD	0	520	0	520	569	0	4.5	2340	2,563	57	43	1,461	1,102	0.0014	0.0006	0.0004	0.0011	0.0008	0.0033
BETH	0	395	0	395	433	0	4.5	1777.5	1,947	57	43	1,110	837	0.0011	0.0005	0.0003	0.0008	0.0006	0.0025
BRADD RD	0	10	0	**10**	11	0	4.5	45	49	57	43	28	21	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
BROOKLAND	0	27	0	**27**	30	0	4.5	121.5	133	57	43	76	57	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002
CHEVERLY	0	557	0	**557**	610	0	4.5	2506.5	2,745	57	43	1,565	1,180	0.0015	0.0007	0.0005	0.0011	0.0008	0.0035
CLARENDON	0	554	0	554	607	0	4.5	2493	2,730	57	43	1,556	1,174	0.0015	0.0007	0.0005	0.0011	0.0008	0.0035
CLEVELAND PK	0	366	0	366	401	0	4.5	1647	1,804	57	43	1,028	776	0.0010	0.0004	0.0003	0.0007	0.0005	0.0023
COURT HOUSE	0	256	0	256	280	0	4.5	1152	1,262	57	43	719	542	0.0007	0.0003	0.0002	0.0005	0.0004	0.0016
CRYSTAL CITY	0	347	0	347	380	0	4.5	1561.5	1,710	57	43	975	735	0.0010	0.0004	0.0003	0.0007	0.0005	0.0022
DEANWOOD	0	194	0	**194**	212	0	4.5	873	956	57	43	545	411	0.0005	0.0002	0.0002	0.0004	0.0003	0.0012
DUN LORING 10%	10	1220	136	**1355**	1336	148	4.5	6097.5	6,678	57	43	3,806	2,871	0.0036	0.0017	0.0011	0.0028	0.0019	0.0082
DUPONT CIRCLE	0	165	0	165	181	0	4.5	742.5	813	57	43	463	350	0.0005	0.0002	0.0001	0.0003	0.0002	0.0010
EASTERN MKT	0	178	0	178	195	0	4.5	801	877	57	43	500	377	0.0005	0.0002	0.0001	0.0004	0.0003	0.0011
EAST FALLS CH	0	442	0	**442**	484	0	4.5	1989	2,178	57	43	1,242	937	0.0012	0.0005	0.0004	0.0009	0.0007	0.0028
EIS	0	352	0	352	385	0	4.5	1584	1,735	57	43	989	746	0.0010	0.0004	0.0003	0.0007	0.0005	0.0022
FARRAGUT NORTH	0	102	0	102	112	0	4.5	459	503	57	43	287	216	0.0003	0.0001	0.0001	0.0002	0.0002	0.0006
FARRAGUT WEST	0	221	0	221	242	0	4.5	994.5	1,089	57	43	621	468	0.0006	0.0003	0.0002	0.0005	0.0003	0.0014
FEDERAL CENTER	0	75	0	75	82	0	4.5	337.5	370	57	43	211	159	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
FEDERAL TRI	0	54	0	54	59	0	4.5	243	266	57	43	152	114	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
FOGGY	0	102	0	102	112	0	4.5	459	503	57	43	287	216	0.0003	0.0001	0.0001	0.0002	0.0002	0.0006
FORT TROTTEN	0	445	0	**445**	487	0	4.5	2002.5	2,193	57	43	1,250	943	0.0012	0.0005	0.0004	0.0009	0.0007	0.0028
FRH.HEIGHTS	0	679	0	679	744	0	4.5	3055.5	3,346	57	43	1,907	1,439	0.0019	0.0008	0.0006	0.0014	0.0010	0.0043
GALLERY PLACE	0	124	0	124	136	0	4.5	558	611	57	43	348	263	0.0003	0.0002	0.0001	0.0003	0.0002	0.0008
GROSVENOR	0	716	0	**716**	784	0	4.5	3222	3,529	57	43	2,011	1,517	0.0020	0.0009	0.0006	0.0015	0.0011	0.0045
HUNT NORTH 40%	40	1873	1249	**3122**	2051	1368	7.5	23415	25,643	57	43	14,616	11,026	0.0069	0.0064	0.0043	0.0106	0.0037	0.0213
JUD SQUARE	0	110	0	110	120	0	4.5	495	542	57	43	309	233	0.0003	0.0001	0.0001	0.0002	0.0002	0.0007
KING ST	0	30	0	**30**	33	0	4.5	135	148	57	43	84	64	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002
								0	0										
								0	0										
LANDOVER 25%	25	1410	470	**1880**	1544	515	7.5	14100	15,442	57	43	8,802	6,640	0.0046	0.0038	0.0026	0.0064	0.0024	0.0134
L'ENFANT PLAZA	0	296	0	296	324	0	4.5	1332	1,459	57	43	831	627	0.0008	0.0004	0.0002	0.0006	0.0004	0.0019
MCPHERSON SQ	0	52	0	52	57	0	4.5	234	256	57	43	146	110	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
MEDICAL CENTER	0	14	0	**14**	15	0	4.5	63	69	57	43	39	30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
METRO CENTER	0	177	0	177	194	0	4.5	796.5	872	57	43	497	375	0.0005	0.0002	0.0001	0.0004	0.0003	0.0011
MINNES	0	353	0	**353**	387	0	4.5	1588.5	1,740	57	43	992	748	0.0010	0.0004	0.0003	0.0007	0.0005	0.0022
NAT AIR	0	87	0	87	95	0	4.5	391.5	429	57	43	244	184	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
NEW CARROL 50%	50	1049	1049	**2097**	1148	1148	7.5	15727.5	17,224	57	43	9,818	7,406	0.0044	0.0043	0.0029	0.0072	0.0023	0.0138
PRNTAGON	0	561	0	561	614	0	4.5	2524.5	2,765	57	43	1,576	1,189	0.0016	0.0007	0.0005	0.0011	0.0008	0.0035
PENTAGON CITY	0	381	0	381	417	0	4.5	1714.5	1,878	57	43	1,070	807	0.0011	0.0005	0.0003	0.0008	0.0006	0.0024
POTOMAC AVE	0	533	0	533	584	0	4.5	2398.5	2,627	57	43	1,497	1,129	0.0015	0.0007	0.0004	0.0011	0.0008	0.0034
ROCKVILLE	0	667	0	**667**	730	0	4.5	3001.5	3,287	57	43	1,874	1,413	0.0019	0.0008	0.0005	0.0014	0.0010	0.0042
ROSSLYN	0	356	0	356	390	0	4.5	1602	1,754	57	43	1,000	754	0.0010	0.0004	0.0003	0.0007	0.0005	0.0022
SHADY GROVE 10%	10	3903	434	**4337**	4275	475	7.5	32527.5	35,622	57	43	20,305	15,318	0.0114	0.0089	0.0059	0.0148	0.0061	0.0323
SILVER SPRING	0	44	0	**44**	48	0	4.5	198	217	57	43	124	93	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003

LOCATION	2002				2008	2008	AVERAGE	2002	2008	EMISSIONS									TOTAL
	OUTSIDE MSA	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate	TRIP LENGTH	VMT	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile)	RUNNING Arterial Rate (gm/mile)	RUNNING Freeway Rate (gm/mile)	RUNNING Total Running	HOT SOAK Rate (gm/mile)	(tons/day)
					1.10	1.10								1.1500	0.1983	0.1752		0.6100	
SMITH MALL	0	120	0	120	131	0	4.5	540	591	57	43	337	254	0.0003	0.0001	0.0001	0.0002	0.0002	0.0008
STADIUM ARM	0	976	0	976	1069	0	4.5	4392	4,810	57	43	2,742	2,068	0.0027	0.0012	0.0008	0.0020	0.0014	0.0061
TAKOMA PK	0	146	0	**146**	160	0	4.5	657	720	57	43	410	309	0.0004	0.0002	0.0001	0.0003	0.0002	0.0009
TENLEYTON	0	17	0	**17**	19	0	4.5	76.5	84	57	43	48	36	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
TWINBROOK	0	1136	0	**1136**	1244	0	4.5	5112	5,598	57	43	3,191	2,407	0.0032	0.0014	0.0009	0.0023	0.0017	0.0072
UNION STAT	0	378	0	378	414	0	4.5	1701	1,863	57	43	1,062	801	0.0010	0.0005	0.0003	0.0008	0.0006	0.0024
VAN NESS	0	343	0	343	376	0	4.5	1543.5	1,690	57	43	964	727	0.0010	0.0004	0.0003	0.0007	0.0005	0.0022
VIENNA 25%	25	2798	933	**3731**	3064	1021	7.5	27982.5	30,645	57	43	17,468	13,177	0.0091	0.0076	0.0051	0.0127	0.0048	0.0266
VA SQUARE	0	642	0	642	703	0	4.5	2889	3,164	57	43	1,803	1,360	0.0018	0.0008	0.0005	0.0013	0.0009	0.0040
WEST FALLS CHURCH	0	2183	0	**2183**	2391	0	4.5	9823.5	10,758	57	43	6,132	4,626	0.0061	0.0027	0.0018	0.0045	0.0032	0.0137
WHITE FLINT	0	1633	0	1633	1788	0	4.5	7348.5	8,048	57	43	4,587	3,460	0.0045	0.0020	0.0013	0.0033	0.0024	0.0103
WOODLEY	0	68	0	68	74	0	4.5	306	335	57	43	191	144	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004
RHODE ISLAND 30%	30	266	114	**380**	291	125	7.5	2850	3,121	57	43	1,779	1,342	0.0009	0.0008	0.0005	0.0013	0.0005	0.0027
								0	0										
BUS & CAR POOL LOTS								0	0										
								0	0										
CARTER BARRON	0	798	0	798	874	0	4.5	3591	3,933	57	43	2,242	1,691	0.0022	0.0010	0.0007	0.0016	0.0012	0.0050
PG PLAZA	0	47	0	47	51	0	4.5	211.5	232	57	43	132	100	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
PENN MAR SHOPP.	0	100	0	**100**	110	0	4.5	450	493	57	43	281	212	0.0003	0.0001	0.0001	0.0002	0.0001	0.0006
CAP PLAZA	0	100	0	**100**	110	0	4.5	450	493	57	43	281	212	0.0003	0.0001	0.0001	0.0002	0.0001	0.0006
EASTOVER	0	100	0	**100**	110	0	4.5	450	493	57	43	281	212	0.0003	0.0001	0.0001	0.0002	0.0001	0.0006
FOUR MILE RUN	0	28	0	**28**	31	0	4.5	126	138	57	43	79	59	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002
SPRINGFIELD MALL	0	580	0	**580**	635	0	4.5	2610	2,858	57	43	1,629	1,229	0.0016	0.0007	0.0005	0.0012	0.0009	0.0037
SPRINGFIELD METH C	0	48	0	**48**	53	0	4.5	216	237	57	43	135	102	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
FRED ARMORY	0	33	0	**33**	36	0	7.5	247.5	271	57	43	154	117	0.0001	0.0001	0.0000	0.0001	0.0000	0.0003
MYERSVILLE	0	65	0	**65**	71	0	7.5	487.5	534	57	43	304	230	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
ROSEMONT	0	45	0	**45**	49	0	7.5	337.5	370	57	43	211	159	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
URBANA	0	193	0	**193**	211	0	7.5	1447.5	1,585	57	43	904	682	0.0005	0.0004	0.0003	0.0007	0.0003	0.0015
JEFFERSON	0	40	0	**40**	44	0	7.5	300	329	57	43	187	141	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003
NORBECK RD	0	248	0	**248**	272	0	7.5	1860	2,037	57	43	1,161	876	0.0007	0.0005	0.0003	0.0008	0.0004	0.0019
MONTROSE RD	0	650	0	**650**	712	0	7.5	4875	5,339	57	43	3,043	2,296	0.0018	0.0013	0.0009	0.0022	0.0010	0.0050
BRIGG CHENNY 50%	50	215	215	**430**	235	235	7.5	3225	3,532	57	43	2,013	1,519	0.0009	0.0009	0.0006	0.0015	0.0005	0.0028
COMUS ROAD	0	30	0	**30**	33	0	7.5	225	246	57	43	140	106	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
LAKEFOREST MALL	0	300	0	**300**	329	0	7.5	2250	2,464	57	43	1,405	1,060	0.0008	0.0006	0.0004	0.0010	0.0004	0.0023
BURTONSVILLE	0	500	0	**500**	548	0	7.5	3750	4,107	57	43	2,341	1,766	0.0014	0.0010	0.0007	0.0017	0.0007	0.0038
FORCEY MEM.	0	200	0	**200**	219	0	7.5	1500	1,643	57	43	936	706	0.0006	0.0004	0.0003	0.0007	0.0003	0.0015
TECH ROAD	0	155	0	**155**	170	0	7.5	1162.5	1,273	57	43	726	547	0.0004	0.0003	0.0002	0.0005	0.0002	0.0012
BELTWAY	0	265	0	**265**	290	0	7.5	1987.5	2,177	57	43	1,241	936	0.0007	0.0005	0.0004	0.0009	0.0004	0.0020
LAUREL VAN DUSEN	0	62	0	**62**	68	0	7.5	465	509	57	43	290	219	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
ACCOKEEK	0	450	0	**450**	493	0	7.5	3375	3,696	57	43	2,107	1,589	0.0012	0.0009	0.0006	0.0015	0.0007	0.0034
ABC DRIVE IN	0	100	0	**100**	110	0	7.5	750	821	57	43	468	353	0.0003	0.0002	0.0001	0.0003	0.0001	0.0008
BOWIE 20%	20	526	131	**657**	576	144	7.5	4927.5	5,396	57	43	3,076	2,320	0.0016	0.0013	0.0009	0.0022	0.0009	0.0048
CLINTON 50%	50	212	212	**424**	232	232	7.5	3180	3,483	57	43	1,985	1,497	0.0009	0.0009	0.0006	0.0014	0.0005	0.0028
OXON HILL 20%	20	519	130	**649**	569	142	7.5	4867.5	5,331	57	43	3,038	2,292	0.0016	0.0013	0.0009	0.0022	0.0009	0.0047
EQUESTRIAN CENTER	50	150	150	**300**	164	164	7.5	2250	2,464	57	43	1,405	1,060	0.0006	0.0006	0.0004	0.0010	0.0003	0.0020
BOWIE MARKET PLACE	0	50	0	**50**	55	0	7.5	375	411	57	43	234	177	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
FT.WASHINGTON	0	412	0	**412**	451	0	7.5	3090	3,384	57	43	1,929	1,455	0.0011	0.0008	0.0006	0.0014	0.0006	0.0032
MONTPELIER REC PAR	0	70	0	**70**	77	0	7.5	525	575	57	43	328	247	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
RESTON	0	1547	0	**1547**	1694	0	7.5	11602.5	12,706	57	43	7,243	5,464	0.0043	0.0032	0.0021	0.0053	0.0023	0.0119
GREENBRIAR	0	55	0	**55**	60	0	7.5	412.5	452	57	43	257	194	0.0002	0.0001	0.0001	0.0002	0.0001	0.0004
FAIR OAKS	0	150	0	**150**	164	0	7.5	1125	1,232	57	43	702	530	0.0004	0.0003	0.0002	0.0005	0.0002	0.0011
ROLLING VALLEY	0	628	0	**628**	688	0	7.5	4710	5,158	57	43	2,940	2,218	0.0017	0.0013	0.0009	0.0021	0.0009	0.0048
SPRINGFIELD PLAZA	0	230	0	**230**	252	0	7.5	1725	1,889	57	43	1,077	812	0.0006	0.0005	0.0003	0.0008	0.0003	0.0018
FAIRLANES BOWL	0	35	0	**35**	38	0	7.5	262.5	287	57	43	164	124	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
NOTTOWAY PARK	0	14	0	**14**	15	0	7.5	105	115	57	43	66	49	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
HORNER RD	0	2397	0	**2397**	2625	0	7.5	17977.5	19,688	57	43	11,222	8,466	0.0067	0.0049	0.0033	0.0082	0.0035	0.0184
LAKE RIDGE	0	555	0	**555**	608	0	7.5	4162.5	4,559	57	43	2,598	1,960	0.0015	0.0011	0.0008	0.0019	0.0008	0.0043
MINNIEVILLE RD 40%	40	336	224	560	368	245	7.5	4200	4,600	57	43	2,622	1,978	0.0012	0.0011	0.0008	0.0019	0.0007	0.0038
GORDON BLVD	0	156	0	156	171	0	7.5	1170	1,281	57	43	730	551	0.0004	0.0003	0.0002	0.0005	0.0002	0.0012
HILLENDALE	0	248	0	**248**	272	0	7.5	1860	2,037	57	43	1,161	876	0.0007	0.0005	0.0003	0.0008	0.0004	0.0019
POTOMAC MILLS	0	946	0	**946**	1036	0	7.5	7095	7,770	57	43	4,429	3,341	0.0026	0.0019	0.0013	0.0032	0.0014	0.0072
								0	0										
								0	0										
PARK-AND-RIDE LOTS - MARYLAND								0	0										
CALVERT COUNTY								0	0										
Dunkirk	25	32	11	42	34	11	7.5	315	345	57	43	197	148	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003
Huntingtown	25	26	9	35	29	10	7.5	262.5	287	57	43	164	124	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Lord Calvert Bowling Alle	25	83	28	110	90	30	7.5	825	903	57	43	515	389	0.0003	0.0002	0.0002	0.0004	0.0001	0.0008
Lusby	25	23	8	30	25	8	7.5	225	246	57	43	140	106	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
North Beach VFD	25	53	18	70	57	19	7.5	525	575	57	43	328	247	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
Prince Frederick	25	53	18	70	57	19	7.5	525	575	57	43	328	247	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
St. Leonard	25	38	13	50	41	14	7.5	375	411	57	43	234	177	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004

EXHIBIT 2

LOCATION	2002				2008	2008	AVERAGE	2002	2008	EMISSIONS									
	OUTSIDE MSA	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate	TRIP LENGTH	VMT	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile)	RUNNING Arterial Rate (gm/mile)	RUNNING Freeway Rate (gm/mile)	RUNNING Total Running	HOT SOAK Rate (gm/mile)	TOTAL (tons/day)
					1.10	1.10								1.1500	0.1983	0.1752		0.6100	
Sunderland	25	80	27	106	87	29	7.5	795	871	57	43	496	374	0.0003	0.0002	0.0001	0.0004	0.0001	0.0008
PARK-AND-RIDE LOTS - MARYLAND								0	0										
CHARLES COUNTY								0	0										
301 Park & Ride	25	287	96	383	315	105	7.5	2872.5	3,146	57	43	1,793	1,353	0.0009	0.0008	0.0005	0.0013	0.0005	0.0027
Charles County Governm	25	26	9	35	29	10	7.5	262.5	287	57	43	164	124	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Food Lion Shopping Cer	25	38	13	50	41	14	7.5	375	411	57	43	234	177	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
La Plata Armory	25	15	5	20	16	5	7.5	150	164	57	43	94	71	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
Laurel Springs Regional	25	38	13	50	41	14	7.5	375	411	57	43	234	177	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
Life Wesleyan Church	25	38	13	50	41	14	7.5	375	411	57	43	234	177	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
Mattawoman-Beantown	25	435	145	580	476	159	7.5	4350	4,764	57	43	2,715	2,048	0.0014	0.0012	0.0008	0.0020	0.0007	0.0041
Smallwood Village	25	75	25	100	82	27	7.5	750	821	57	43	468	353	0.0002	0.0002	0.0001	0.0003	0.0001	0.0007
St. Charles Towne	25	263	88	350	287	96	7.5	2625	2,875	57	43	1,639	1,236	0.0009	0.0007	0.0005	0.0012	0.0005	0.0025
PARK-AND-RIDE LOTS	25	0	0		0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
FREDERICK COUNTY	25	0	0		0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Frederick (north)	25	123	41	164	135	45	7.5	1230	1,347	57	43	768	579	0.0004	0.0003	0.0002	0.0006	0.0002	0.0012
Frederick (south)	25	173	58	230	189	63	7.5	1725	1,889	57	43	1,077	812	0.0006	0.0005	0.0003	0.0008	0.0003	0.0016
Monacacy Marcst	25	600	200	800	657	219	7.5	6000	6,571	57	43	3,745	2,825	0.0019	0.0016	0.0011	0.0027	0.0010	0.0057
PARK-AND-RIDE LOTS - MARYLAND								0	0										
MONTGOMERY COUNTY								0	0										
Colesville	0	190	0	190	208	0	7.5	1425	1,561	57	43	890	671	0.0005	0.0004	0.0003	0.0006	0.0003	0.0015
Damascus	50	0	0		0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Gaithersburg	50	259	259	517	283	283	7.5	3877.5	4,246	57	43	2,420	1,826	0.0011	0.0011	0.0007	0.0018	0.0006	0.0034
Gaithersburg	50	175	175	350	192	192	7.5	2625	2,875	57	43	1,639	1,236	0.0007	0.0007	0.0005	0.0012	0.0004	0.0023
Germantown Town	50	0	0		0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Greencastle	50	75	75	150	82	82	7.5	1125	1,232	57	43	702	530	0.0003	0.0003	0.0002	0.0005	0.0002	0.0010
Milestone Shopping	50	88	88	175	96	96	7.5	1312.5	1,437	57	43	819	618	0.0004	0.0004	0.0002	0.0006	0.0002	0.0012
PARK-AND-RIDE LOTS - MAYLAND								0	0										
PRINCE GEORGE'S COUNTY								0	0										
Hampton Mall	0	100	0	100	110	0	4.5	450	493	57	43	281	212	0.0003	0.0001	0.0001	0.0002	0.0001	0.0006
Laurel (south)	25	513	171	684	562	187	7.5	5130	5,618	57	43	3,202	2,416	0.0017	0.0014	0.0009	0.0023	0.0009	0.0049
PARK-AND-RIDE LOTS - VIRGIN	0	0			0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ARLINGTON COUNTY		0	0		0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ballston Public Parking (	25	375	125	500	411	137	7.5	3750	4,107	57	43	2,341	1,766	0.0012	0.0010	0.0007	0.0017	0.0006	0.0036
Washington-Lee	50	178	178	356	195	195	7.5	2670	2,924	57	43	1,667	1,257	0.0007	0.0007	0.0005	0.0012	0.0004	0.0023
PARK-AND-RIDE LOTS - VIRGINIA								0	0										
FAIRFAX COUNTY								0	0										
American Legion	50	50	50	100	55	55	7.5	750	821	57	43	468	353	0.0002	0.0002	0.0001	0.0003	0.0001	0.0007
Canterbury Woods Pk	50	17	17	34	19	19	7.5	255	279	57	43	159	120	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Centreville	50	185	185	370	203	203	7.5	2775	3,039	57	43	1,732	1,307	0.0008	0.0008	0.0005	0.0013	0.0004	0.0024
Centreville United Metho	50	74	74	147	80	80	7.5	1102.5	1,207	57	43	688	519	0.0003	0.0003	0.0002	0.0005	0.0002	0.0010
Fairfax County Governm	50	85	85	170	93	93	7.5	1275	1,396	57	43	796	600	0.0004	0.0003	0.0002	0.0006	0.0002	0.0011
Greenbriar Park	50	28	28	55	30	30	7.5	412.5	452	57	43	257	194	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
Herndon-Monroe	50	873	873	1,745	956	956	7.5	13087.5	14,333	57	43	8,170	6,163	0.0036	0.0036	0.0024	0.0060	0.0019	0.0115
Michael's	50	100	100	200	110	110	7.5	1500	1,643	57	43	936	706	0.0004	0.0004	0.0003	0.0007	0.0002	0.0013
Parkwood Baptist	50	9	9	18	10	10	7.5	135	148	57	43	84	64	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
South Run District Pk	50	170	170	340	186	186	7.5	2550	2,793	57	43	1,592	1,201	0.0007	0.0007	0.0005	0.0012	0.0004	0.0022
St Paul Chung Catholic (	50	50	50	100	55	55	7.5	750	821	57	43	468	353	0.0002	0.0002	0.0001	0.0003	0.0001	0.0007
Stringfellow Rd	50	181	181	361	198	198	7.5	2707.5	2,965	57	43	1,690	1,275	0.0008	0.0007	0.0005	0.0012	0.0004	0.0024
Sully Station	50	70	70	140	77	77	7.5	1050	1,150	57	43	655	494	0.0003	0.0003	0.0002	0.0005	0.0002	0.0009
Sydenstricker Rd	50	84	84	167	91	91	7.5	1252.5	1,372	57	43	782	590	0.0003	0.0003	0.0002	0.0006	0.0002	0.0011
Wakefield Chapel Pk	50	25	25	50	27	27	7.5	375	411	57	43	234	177	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
PARK-AND-RIDE LOTS - VIRGINIA								0	0										
LOUDOUN COUNTY								0	0										
Ashburn Farm	50	10	10	20	11	11	7.5	150	164	57	43	94	71	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
Ashburn Village	50	20	20	40	22	22	7.5	300	329	57	43	187	141	0.0001	0.0001	0.0001	0.0001	0.0000	0.0003
Cascades	50	28	28	55	30	30	7.5	412.5	452	57	43	257	194	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
Dulles North Transit	50	375	375	750	411	411	7.5	5625	6,160	57	43	3,511	2,649	0.0016	0.0015	0.0010	0.0026	0.0008	0.0049
Hamilton	50	25	25	50	27	27	7.5	375	411	57	43	234	177	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
Innovation Avenue	50	38	38	75	41	41	7.5	562.5	616	57	43	351	265	0.0002	0.0002	0.0001	0.0003	0.0001	0.0005
Leesburg	50	25	25	50	27	27	7.5	375	411	57	43	234	177	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
Leesburg Kohls	50	600	600	1200	657	657	7.5	9000	9,856	57	43	5,618	4,238	0.0025	0.0025	0.0016	0.0041	0.0013	0.0079
Purcellville	50	18	18	35	19	19	7.5	262.5	287	57	43	164	124	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Sterling Park SC	50	23	23	45	25	25	7.5	337.5	370	57	43	211	159	0.0001	0.0001	0.0001	0.0002	0.0000	0.0003
Sterling Shaw Rd	50	24	24	48	26	26	7.5	360	394	57	43	225	170	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
PARK-AND-RIDE LOTS - VIRGINIA								0	0										
PRINCE WILLIAM COUNTY								0	0										
Brittany	50	48	48	95	52	52	7.5	712.5	780	57	43	445	336	0.0002	0.0002	0.0001	0.0003	0.0001	0.0006
Dale City	50	294	294	587	321	321	7.5	4402.5	4,821	57	43	2,748	2,073	0.0012	0.0012	0.0008	0.0020	0.0006	0.0039
Harbor Drive	50	100	100	200	110	110	7.5	1500	1,643	57	43	936	706	0.0004	0.0004	0.0003	0.0007	0.0002	0.0013
Lindendale	50	108	108	216	118	118	7.5	1620	1,774	57	43	1,011	763	0.0004	0.0004	0.0003	0.0007	0.0002	0.0014
Montclair	50	25	25	50	27	27	7.5	375	411	57	43	234	177	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
PRTC Transit Center	50	93	93	185	101	101	7.5	1387.5	1,520	57	43	866	653	0.0004	0.0004	0.0003	0.0006	0.0002	0.0012

EXHIBIT 2

LOCATION	OUTSIDE MSA	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2008 INSIDE Growth Rate	2008 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	2002 VMT	2008 VMT	EMISSIONS: ARTERIAL %	EMISSIONS: FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile)	RUNNING Arterial Rate (gm/mile)	RUNNING Freeway Rate (gm/mile)	RUNNING Total Running	HOT SOAK Rate (gm/mile)	TOTAL (tons/day)
					1.10	1.10								1.1500	0.1983	0.1752		0.6100	
Tackett's Mill	50	85	85	169	93	93	7.5	1267.5	1,388	57	43	791	597	0.0004	0.0003	0.0002	0.0006	0.0002	0.0011
Triangle	50	15	15	29	16	16	7.5	217.5	238	57	43	136	102	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
I-95 / Rt 123	50	282	282	563	308	308	7.5	4222.5	4,624	57	43	2,636	1,988	0.0012	0.0012	0.0008	0.0019	0.0006	0.0037
US 1 / VA 234	50	137	137	274	150	150	7.5	2055	2,251	57	43	1,283	968	0.0006	0.0006	0.0004	0.0009	0.0003	0.0018
MARC TRAIN COMMUTER LOTS								0	0										
College Park	25	431	144	574	471	157	7.5	4305	4,715	57	43	2,687	2,027	0.0014	0.0012	0.0008	0.0020	0.0007	0.0041
Frederick	0	0	0	0	0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Greenbelt	60	1346	2018	3364	1474	2210	7.5	25230	27,630	57	43	15,749	11,881	0.0065	0.0069	0.0046	0.0115	0.0035	0.0215
Harpers Ferry		98	0	98	107	0	7.5	735	805	57	43	459	346	0.0003	0.0002	0.0001	0.0003	0.0001	0.0008
Muirkirk	60	260	390	650	285	427	7.5	4875	5,339	57	43	3,043	2,296	0.0013	0.0013	0.0009	0.0022	0.0007	0.0042
Seabrook	0	264	0	264	289	0	4.5	1188	1,301	57	43	742	559	0.0007	0.0003	0.0002	0.0005	0.0004	0.0017
Silver Spring	0	0	0	0	0	0	4.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Union Station	0	781	0	781	855	0	7.5	5857.5	6,415	57	43	3,656	2,758	0.0022	0.0016	0.0011	0.0027	0.0012	0.0060
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS								0	0										
Backlick Road	50	110	110	220	120	120	7.5	1650	1,807	57	43	1,030	777	0.0005	0.0005	0.0003	0.0008	0.0002	0.0015
Broad Run	50	198	198	396	217	217	7.5	2970	3,253	57	43	1,854	1,399	0.0008	0.0008	0.0005	0.0014	0.0004	0.0026
Burke Center	50	275	275	550	301	301	7.5	4125	4,517	57	43	2,575	1,943	0.0011	0.0011	0.0008	0.0019	0.0006	0.0036
Franconia/Springfield (or	50	1900	1900	3800	2081	2081	7.5	28500	31,212	57	43	17,791	13,421	0.0079	0.0078	0.0052	0.0130	0.0042	0.0251
Lorton	50	100	100	200	110	110	7.5	1500	1,643	57	43	936	706	0.0004	0.0004	0.0003	0.0007	0.0002	0.0013
Manassas	50	187	187	374	205	205	7.5	2805	3,072	57	43	1,751	1,321	0.0008	0.0008	0.0005	0.0013	0.0004	0.0025
Manassas Park	50	150	150	300	164	164	7.5	2250	2,464	57	43	1,405	1,060	0.0006	0.0006	0.0004	0.0010	0.0003	0.0020
Quantico	50	109	109	217	119	119	7.5	1627.5	1,782	57	43	1,016	766	0.0005	0.0004	0.0003	0.0007	0.0002	0.0014
Rippon	50	150	150	300	164	164	7.5	2250	2,464	57	43	1,405	1,060	0.0006	0.0006	0.0004	0.0010	0.0003	0.0020
Rolling Road	50	185	185	370	203	203	7.5	2775	3,039	57	43	1,732	1,307	0.0008	0.0008	0.0005	0.0013	0.0004	0.0024
Woodbridge	50	294	294	588	322	322	7.5	4410	4,830	57	43	2,753	2,077	0.0012	0.0012	0.0008	0.0020	0.0006	0.0039
METRORAIL PARKING LOTS								0	0										
Anacostia	25	861	287	1148	943	314	7.5	8610	9,429	57	43	5,375	4,055	0.0028	0.0023	0.0016	0.0039	0.0015	0.0082
Branch Avenue	50	1611	1611	3222	1764	1764	7.5	24165	26,464	57	43	15,085	11,380	0.0067	0.0066	0.0044	0.0110	0.0036	0.0213
Capitol Heights	50	194	194	387	212	212	7.5	2902.5	3,179	57	43	1,812	1,367	0.0008	0.0008	0.0005	0.0013	0.0004	0.0026
College Park	25	465	155	620	509	170	7.5	4650	5,092	57	43	2,903	2,190	0.0015	0.0013	0.0008	0.0021	0.0008	0.0044
Congress Heights	0	66	0	66	72	0	4.5	297	325	57	43	185	140	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004
Deanwood	0	194	0	194	212	0	7.5	1455	1,593	57	43	908	685	0.0005	0.0004	0.0003	0.0007	0.0003	0.0015
East Falls Church	50	221	221	442	242	242	7.5	3315	3,630	57	43	2,069	1,561	0.0009	0.0009	0.0006	0.0015	0.0005	0.0029
Forest Glen	50	329	329	658	360	360	7.5	4935	5,405	57	43	3,081	2,324	0.0014	0.0013	0.0009	0.0022	0.0007	0.0043
Franconia - Springfield	50	1987	1987	3973	2175	2175	4.5	17878.5	19,579	57	43	11,160	8,419	0.0083	0.0049	0.0033	0.0081	0.0044	0.0208
Glenmont	50	925	925	1850	1013	1013	4.5	8325	9,117	57	43	5,197	3,920	0.0039	0.0023	0.0015	0.0038	0.0020	0.0097
Greenbelt	50	1783	1783	3565	1952	1952	7.5	26737.5	29,281	57	43	16,690	12,591	0.0074	0.0073	0.0049	0.0122	0.0039	0.0235
Naylor Road	50	216	216	431	236	236	7.5	3232.5	3,540	57	43	2,018	1,522	0.0009	0.0009	0.0006	0.0015	0.0005	0.0028
Prince George's Plaza	25	927	309	1236	1015	338	7.5	9270	10,152	57	43	5,787	4,365	0.0030	0.0025	0.0017	0.0042	0.0016	0.0088
Southern Avenue	50	1090	1090	2180	1194	1194	4.5	9810	10,743	57	43	6,124	4,620	0.0045	0.0027	0.0018	0.0045	0.0024	0.0114
Suitland	50	1033	1033	2065	1131	1131	4.5	9292.5	10,177	57	43	5,801	4,376	0.0043	0.0025	0.0017	0.0042	0.0023	0.0108
Van Dorn Street	50	204	204	407	223	223	4.5	1831.5	2,006	57	43	1,143	862	0.0008	0.0005	0.0003	0.0008	0.0004	0.0021
West Hyattsville	25	453	151	604	496	165	7.5	4530	4,961	57	43	2,828	2,133	0.0015	0.0012	0.0008	0.0021	0.0008	0.0043
Wheaton	25	759	253	1012	831	277	7.5	7590	8,312	57	43	4,738	3,574	0.0025	0.0021	0.0014	0.0035	0.0013	0.0072
		78629	29681	108,310	86110	32505		711714	779,428					0.2595	0.1942	0.1295	0.3237	0.1377	0.7209

Bold figures: New numbers taken from P & R directory
Figures in bracket: Carry forward figures from conformity doc.

Park lot Growth Rate	
transit trips 2008	973359
transit trips 2000	863783
Annual growth rate	0.015857
Growth factor (2002-2008)	1.095142

EXHIBIT 3

2008 NOx AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
FY2006-2011 TIP AND 2005 CLRP AIR QUALITY CONFORMITY

LOCATION	OUTSIDE MSA (%)	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2008 INSIDE Growth Rate	2008 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	EMISSIONS COLD START Rate (gm/mile)	EMISSIONS RUNNING Arterial Rate (gm/mile	EMISSIONS RUNNING Freeway Rate (gm/mile	EMISSIONS RUNNING Total Running Emission (tons/day)	EMISSIONS TOTAL (tons/day)
					1.10	1.10							0.6291	0.4216	0.4385		
COMMUTER RAIL LOTS																	
BRUNSWICK 25%	25	305	102	**407**	334	111	7.5	3,343	57	43	1,905	1,437	0.0005	0.0018	0.0014	0.0032	0.0037
PT OF ROCKS 25%	25	204	68	**272**	223	74	7.5	2,234	57	43	1,273	961	0.0004	0.0012	0.0009	0.0021	0.0025
DICKERSON	0	15	0	**15**	16	0	7.5	123	57	43	70	53	0.0000	0.0001	0.0001	0.0001	0.0001
BARNESVILLE	0	46	0	**46**	50	0	7.5	378	57	43	215	162	0.0001	0.0002	0.0002	0.0004	0.0004
GERMANTOWN	0	386	0	**386**	423	0	7.5	3,170	57	43	1,807	1,363	0.0006	0.0017	0.0013	0.0030	0.0036
MET GROVE	0	352	0	**352**	385	0	7.5	2,891	57	43	1,648	1,243	0.0005	0.0015	0.0012	0.0027	0.0033
WAS GROVE	0	15	0	**15**	16	0	7.5	123	57	43	70	53	0.0000	0.0001	0.0001	0.0001	0.0001
GARRETT PARK	0	22	0	**22**	24	0	7.5	181	57	43	103	78	0.0000	0.0001	0.0001	0.0002	0.0002
BOWIE 50%	50	188	188	**375**	205	205	7.5	3,080	57	43	1,756	1,324	0.0004	0.0016	0.0013	0.0029	0.0033
SEABROOK 15%	15	224	40	**264**	246	43	7.5	2,168	57	43	1,236	932	0.0004	0.0011	0.0009	0.0021	0.0024
KENSINGTON	0	45	0	**45**	49	0	7.5	370	57	43	211	159	0.0001	0.0002	0.0002	0.0003	0.0004
LAUREL 30%	30	209	90	**299**	229	98	7.5	2,456	57	43	1,400	1,056	0.0004	0.0013	0.0010	0.0023	0.0027
GAITHESBURG	0	280	0	**280**	307	0	7.5	2,300	57	43	1,311	989	0.0004	0.0012	0.0010	0.0022	0.0026
BERWYN HEIGHTS	0	30	0	**30**	33	0	4.5	148	57	43	84	64	0.0000	0.0001	0.0001	0.0001	0.0002
RIVERDALE	0	65	0	**65**	71	0	4.5	320	57	43	183	138	0.0001	0.0002	0.0001	0.0003	0.0004
								0									
METRO RAIL LOTS								0									
								0									
ADDISON ROAD 40%	40	791	527	**1318**	866	577	7.5	10,825	57	43	6,171	4,655	0.0016	0.0057	0.0045	0.0102	0.0118
ARCHIVES	0	12	0	12	13	0	4.5	59	57	43	34	25	0.0000	0.0000	0.0000	0.0001	0.0001
ARLING	0	10	0	10	11	0	4.5	49	57	43	28	21	0.0000	0.0000	0.0000	0.0000	0.0001
BALLSTON	0	1175	0	1175	1287	0	4.5	5,791	57	43	3,301	2,490	0.0018	0.0031	0.0024	0.0055	0.0073
BENN.RD	0	520	0	520	569	0	4.5	2,563	57	43	1,461	1,102	0.0008	0.0014	0.0011	0.0024	0.0032
BETH	0	395	0	395	433	0	4.5	1,947	57	43	1,110	837	0.0006	0.0010	0.0008	0.0018	0.0024
BRADD RD	0	10	0	**10**	11	0	4.5	49	57	43	28	21	0.0000	0.0000	0.0000	0.0000	0.0001
BROOKLAND	0	27	0	**27**	30	0	4.5	133	57	43	76	57	0.0000	0.0001	0.0001	0.0001	0.0002
CHEVERLY	0	557	0	**557**	610	0	4.5	2,745	57	43	1,565	1,180	0.0008	0.0015	0.0011	0.0026	0.0034
CLARENDON	0	554	0	554	607	0	4.5	2,730	57	43	1,556	1,174	0.0008	0.0014	0.0011	0.0026	0.0034
CLEVELAND PK	0	366	0	366	401	0	4.5	1,804	57	43	1,028	776	0.0006	0.0010	0.0007	0.0017	0.0023
COURT HOUSE	0	256	0	256	280	0	4.5	1,262	57	43	719	542	0.0004	0.0007	0.0005	0.0012	0.0016
CRYSTAL CITY	0	347	0	347	380	0	4.5	1,710	57	43	975	735	0.0005	0.0009	0.0007	0.0016	0.0021
DEANWOOD	0	194	0	**194**	212	0	4.5	956	57	43	545	411	0.0003	0.0005	0.0004	0.0009	0.0012
DUN LORING 10%	10	1220	136	**1355**	1336	148	4.5	6,678	57	43	3,806	2,871	0.0020	0.0035	0.0028	0.0063	0.0083
DUPONT CIRCLE	0	165	0	165	181	0	4.5	813	57	43	463	350	0.0003	0.0004	0.0003	0.0008	0.0010
EASTERN MKT	0	178	0	178	195	0	4.5	877	57	43	500	377	0.0003	0.0005	0.0004	0.0008	0.0011
EAST FALLS CH	0	442	0	**442**	484	0	4.5	2,178	57	43	1,242	937	0.0007	0.0012	0.0009	0.0021	0.0027
EIS	0	352	0	352	385	0	4.5	1,735	57	43	989	746	0.0005	0.0009	0.0007	0.0016	0.0022
FARRAGUT NORTH	0	102	0	102	112	0	4.5	503	57	43	287	216	0.0002	0.0003	0.0002	0.0005	0.0006
FARRAGUT WEST	0	221	0	221	242	0	4.5	1,089	57	43	621	468	0.0003	0.0006	0.0005	0.0010	0.0014
FEDERAL CENTER	0	75	0	75	82	0	4.5	370	57	43	211	159	0.0001	0.0002	0.0002	0.0003	0.0005
FEDERAL TRI	0	54	0	54	59	0	4.5	266	57	43	152	114	0.0001	0.0001	0.0001	0.0003	0.0003
FOGGY	0	102	0	102	112	0	4.5	503	57	43	287	216	0.0002	0.0003	0.0002	0.0005	0.0006
FORT TROTTEN	0	445	0	**445**	487	0	4.5	2,193	57	43	1,250	943	0.0007	0.0012	0.0009	0.0021	0.0027
FRH.HEIGHTS	0	679	0	679	744	0	4.5	3,346	57	43	1,907	1,439	0.0010	0.0018	0.0014	0.0032	0.0042
GALLERY PLACE	0	124	0	124	136	0	4.5	611	57	43	348	263	0.0002	0.0003	0.0003	0.0006	0.0008
GROSVENOR	0	716	0	**716**	784	0	4.5	3,529	57	43	2,011	1,517	0.0011	0.0019	0.0015	0.0033	0.0044
HUNT NORTH 40%	40	1873	1249	**3122**	2051	1368	7.5	25,643	57	43	14,616	11,026	0.0038	0.0136	0.0107	0.0242	0.0280
JUD SQUARE	0	110	0	110	120	0	4.5	542	57	43	309	233	0.0002	0.0003	0.0002	0.0005	0.0007
KING ST	0	30	0	**30**	33	0	4.5	148	57	43	84	64	0.0000	0.0001	0.0001	0.0001	0.0002
								0									
								0									
LANDOVER 25%	25	1410	470	**1880**	1544	515	7.5	15,442	57	43	8,802	6,640	0.0025	0.0082	0.0064	0.0146	0.0171
L'ENFANT PLAZA	0	296	0	296	324	0	4.5	1,459	57	43	831	627	0.0004	0.0008	0.0006	0.0014	0.0018
MCPHERSON SQ	0	52	0	52	57	0	4.5	256	57	43	146	110	0.0001	0.0001	0.0001	0.0002	0.0003
MEDICAL CENTER	0	14	0	**14**	15	0	4.5	69	57	43	39	30	0.0000	0.0000	0.0000	0.0001	0.0001

EXHIBIT 3

2008 NOx AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
FY2006-2011 TIP AND 2005 CLRP AIR QUALITY CONFORMITY

													E M I S S I O N S				
LOCATION	OUTSIDE MSA (%)	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2008 INSIDE Growth Rate	2008 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START	RUNNING Arterial	RUNNING Freeway	RUNNING Total Running Emission	TOTAL (tons/day)
					1.10	1.10							Rate (gm/mile) 0.6291	Rate (gm/mile) 0.4216	Rate (gm/mile) 0.4385	(tons/day)	
METRO CENTER	0	177	0	177	194	0	4.5	872	57	43	497	375	0.0003	0.0005	0.0004	0.0008	0.0011
MINNES	0	353	0	**353**	387	0	4.5	1,740	57	43	992	748	0.0005	0.0009	0.0007	0.0016	0.0022
NAT AIR	0	87	0	87	95	0	4.5	429	57	43	244	184	0.0001	0.0002	0.0002	0.0004	0.0005
NEW CARROL 50%	50	1049	1049	**2097**	1148	1148	7.5	17,224	57	43	9,818	7,406	0.0024	0.0091	0.0072	0.0163	0.0187
PRNTAGON	0	561	0	561	614	0	4.5	2,765	57	43	1,576	1,189	0.0009	0.0015	0.0011	0.0026	0.0035
PENTAGON CITY	0	381	0	381	417	0	4.5	1,878	57	43	1,070	807	0.0006	0.0010	0.0008	0.0018	0.0024
POTOMAC AVE	0	533	0	533	584	0	4.5	2,627	57	43	1,497	1,129	0.0008	0.0014	0.0011	0.0025	0.0033
ROCKVILLE	0	667	0	**667**	730	0	4.5	3,287	57	43	1,874	1,413	0.0010	0.0017	0.0014	0.0031	0.0041
ROSSLYN	0	356	0	356	390	0	4.5	1,754	57	43	1,000	754	0.0005	0.0009	0.0007	0.0017	0.0022
SHADY GROVE 10%	10	3903	434	**4337**	4275	475	7.5	35,622	57	43	20,305	15,318	0.0063	0.0189	0.0148	0.0337	0.0399
SILVER SPRING	0	44	0	**44**	48	0	4.5	217	57	43	124	93	0.0001	0.0001	0.0001	0.0002	0.0003
SMITH MALL	0	120	0	120	131	0	4.5	591	57	43	337	254	0.0002	0.0003	0.0002	0.0006	0.0007
STADIUM ARM	0	976	0	976	1069	0	4.5	4,810	57	43	2,742	2,068	0.0015	0.0025	0.0020	0.0045	0.0060
TAKOMA PK	0	146	0	**146**	160	0	4.5	720	57	43	410	309	0.0002	0.0004	0.0003	0.0007	0.0009
TENLEYTON	0	17	0	**17**	19	0	4.5	84	57	43	48	36	0.0000	0.0000	0.0000	0.0001	0.0001
TWINBROOK	0	1136	0	**1136**	1244	0	4.5	5,598	57	43	3,191	2,407	0.0017	0.0030	0.0023	0.0053	0.0070
UNION STAT	0	378	0	378	414	0	4.5	1,863	57	43	1,062	801	0.0006	0.0010	0.0008	0.0018	0.0023
VAN NESS	0	343	0	343	376	0	4.5	1,690	57	43	964	727	0.0005	0.0009	0.0007	0.0016	0.0021
VIENNA 25%	25	2798	933	**3731**	3064	1021	7.5	30,645	57	43	17,468	13,177	0.0050	0.0162	0.0127	0.0290	0.0339
VA SQUARE	0	642	0	642	703	0	4.5	3,164	57	43	1,803	1,360	0.0010	0.0017	0.0013	0.0030	0.0040
WEST FALLS CHURCH	0	2183	0	**2183**	2391	0	4.5	10,758	57	43	6,132	4,626	0.0033	0.0057	0.0045	0.0102	0.0135
WHITE FLINT	0	1633	0	1633	1788	0	4.5	8,048	57	43	4,587	3,460	0.0025	0.0043	0.0033	0.0076	0.0101
WOODLEY	0	68	0	68	74	0	4.5	335	57	43	191	144	0.0001	0.0002	0.0001	0.0003	0.0004
RHODE ISLAND 30%	30	266	114	**380**	291	125	7.5	3,121	57	43	1,779	1,342	0.0005	0.0017	0.0013	0.0030	0.0034
								0									
BUS & CAR POOL LOTS								0									
								0									
CARTER BARRON	0	798	0	798	874	0	4.5	3,933	57	43	2,242	1,691	0.0012	0.0021	0.0016	0.0037	0.0049
PG PLAZA	0	47	0	47	51	0	4.5	232	57	43	132	100	0.0001	0.0001	0.0001	0.0002	0.0003
PENN MAR SHOPP.	0	100	0	**100**	110	0	4.5	493	57	43	281	212	0.0002	0.0003	0.0002	0.0005	0.0006
CAP PLAZA	0	100	0	**100**	110	0	4.5	493	57	43	281	212	0.0002	0.0003	0.0002	0.0005	0.0006
EASTOVER	0	100	0	**100**	110	0	4.5	493	57	43	281	212	0.0002	0.0003	0.0002	0.0005	0.0006
FOUR MILE RUN	0	28	0	**28**	31	0	4.5	138	57	43	79	59	0.0000	0.0001	0.0001	0.0001	0.0002
SPRINGFIELD MALL	0	580	0	**580**	635	0	4.5	2,858	57	43	1,629	1,229	0.0009	0.0015	0.0012	0.0027	0.0036
SPRINGFIELD METH CH	0	48	0	**48**	53	0	4.5	237	57	43	135	102	0.0001	0.0001	0.0001	0.0002	0.0003
FRED ARMORY	0	33	0	**33**	36	0	7.5	271	57	43	154	117	0.0001	0.0001	0.0001	0.0003	0.0003
MYERSVILLE	0	65	0	**65**	71	0	7.5	534	57	43	304	230	0.0001	0.0003	0.0002	0.0005	0.0006
ROSEMONT	0	45	0	**45**	49	0	7.5	370	57	43	211	159	0.0001	0.0002	0.0002	0.0003	0.0004
URBANA	0	193	0	**193**	211	0	7.5	1,585	57	43	904	682	0.0003	0.0008	0.0007	0.0015	0.0018
JEFFERSON	0	40	0	**40**	44	0	7.5	329	57	43	187	141	0.0001	0.0002	0.0001	0.0003	0.0004
NORBECK RD	0	248	0	**248**	272	0	7.5	2,037	57	43	1,161	876	0.0004	0.0011	0.0008	0.0019	0.0023
MONTROSE RD	0	650	0	**650**	712	0	7.5	5,339	57	43	3,043	2,296	0.0010	0.0028	0.0022	0.0050	0.0060
BRIGG CHENNY 50%	50	215	215	**430**	235	235	7.5	3,532	57	43	2,013	1,519	0.0005	0.0019	0.0015	0.0033	0.0038
COMUS ROAD	0	30	0	**30**	33	0	7.5	246	57	43	140	106	0.0000	0.0001	0.0001	0.0002	0.0003
LAKEFOREST MALL	0	300	0	**300**	329	0	7.5	2,464	57	43	1,405	1,060	0.0005	0.0013	0.0010	0.0023	0.0028
BURTONSVILLE	0	500	0	**500**	548	0	7.5	4,107	57	43	2,341	1,766	0.0008	0.0022	0.0017	0.0039	0.0046
FORCEY MEM.	0	200	0	**200**	219	0	7.5	1,643	57	43	936	706	0.0003	0.0009	0.0007	0.0016	0.0019
TECH ROAD	0	155	0	**155**	170	0	7.5	1,273	57	43	726	547	0.0002	0.0007	0.0005	0.0012	0.0014
BELTWAY	0	265	0	**265**	290	0	7.5	2,177	57	43	1,241	936	0.0004	0.0012	0.0009	0.0021	0.0025
LAUREL VAN DUSEN	0	62	0	**62**	68	0	7.5	509	57	43	290	219	0.0001	0.0003	0.0002	0.0005	0.0006
ACCOKEEK	0	450	0	**450**	493	0	7.5	3,696	57	43	2,107	1,589	0.0007	0.0020	0.0015	0.0035	0.0042
ABC DRIVE IN	0	100	0	**100**	110	0	7.5	821	57	43	468	353	0.0002	0.0004	0.0003	0.0008	0.0009
BOWIE 20%	20	526	131	**657**	576	144	7.5	5,396	57	43	3,076	2,320	0.0009	0.0029	0.0022	0.0051	0.0060
CLINTON 50%	50	212	212	**424**	232	232	7.5	3,483	57	43	1,985	1,497	0.0005	0.0018	0.0014	0.0033	0.0038
OXON HILL 20%	20	519	130	**649**	569	142	7.5	5,331	57	43	3,038	2,292	0.0009	0.0028	0.0022	0.0050	0.0059
EQUESTRIAN CENTER	50	150	150	**300**	164	164	7.5	2,464	57	43	1,405	1,060	0.0003	0.0013	0.0010	0.0023	0.0027
BOWIE MARKET PLACE	0	50	0	**50**	55	0	7.5	411	57	43	234	177	0.0001	0.0002	0.0002	0.0004	0.0005

EXHIBIT 3

2008 NOx AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
FY2006-2011 TIP AND 2005 CLRP AIR QUALITY CONFORMITY

LOCATION	OUTSIDE MSA (%)	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2008 INSIDE Growth Rate	2008 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	EMISSIONS COLD START Rate (gm/mile)	EMISSIONS RUNNING Arterial Rate (gm/mile)	EMISSIONS RUNNING Freeway Rate (gm/mile)	EMISSIONS RUNNING Total Running Emission (tons/day)	EMISSIONS TOTAL (tons/day)
					1.10	1.10							0.6291	0.4216	0.4385		
FT.WASHINGTON	0	412	0	**412**	451	0	7.5	3,384	57	43	1,929	1,455	0.0006	0.0018	0.0014	0.0032	0.0038
MONTPELIER REC PARI	0	70	0	**70**	77	0	7.5	575	57	43	328	247	0.0001	0.0003	0.0002	0.0005	0.0006
RESTON	0	1547	0	**1547**	1694	0	7.5	12,706	57	43	7,243	5,464	0.0023	0.0067	0.0053	0.0120	0.0144
GREENBRIAR	0	55	0	**55**	60	0	7.5	452	57	43	257	194	0.0001	0.0002	0.0002	0.0004	0.0005
FAIR OAKS	0	150	0	**150**	164	0	7.5	1,232	57	43	702	530	0.0002	0.0007	0.0005	0.0012	0.0014
ROLLING VALLEY	0	628	0	**628**	688	0	7.5	5,158	57	43	2,940	2,218	0.0010	0.0027	0.0021	0.0049	0.0058
SPRINGFIELD PLAZA	0	230	0	**230**	252	0	7.5	1,889	57	43	1,077	812	0.0003	0.0010	0.0008	0.0018	0.0021
FAIRLANES BOWL	0	35	0	**35**	38	0	7.5	287	57	43	164	124	0.0001	0.0002	0.0001	0.0003	0.0003
NOTTOWAY PARK	0	14	0	**14**	15	0	7.5	115	57	43	66	49	0.0000	0.0001	0.0000	0.0001	0.0001
HORNER RD	0	2397	0	**2397**	2625	0	7.5	19,688	57	43	11,222	8,466	0.0036	0.0104	0.0082	0.0186	0.0223
LAKE RIDGE	0	555	0	**555**	608	0	7.5	4,559	57	43	2,598	1,960	0.0008	0.0024	0.0019	0.0043	0.0052
MINNIEVILLE RD 40%	40	336	224	560	368	245	7.5	4,600	57	43	2,622	1,978	0.0007	0.0024	0.0019	0.0043	0.0050
GORDON BLVD	0	156	0	156	171	0	7.5	1,281	57	43	730	551	0.0002	0.0007	0.0005	0.0012	0.0014
HILLENDALE	0	248	0	**248**	272	0	7.5	2,037	57	43	1,161	876	0.0004	0.0011	0.0008	0.0019	0.0023
POTOMAC MILLS	0	946	0	**946**	1036	0	7.5	7,770	57	43	4,429	3,341	0.0014	0.0041	0.0032	0.0073	0.0088
								0									
								0									
PARK-AND-RIDE LOTS - MARYLAND								0									
CALVERT COUNTY								0									
Dunkirk	25	32	11	42	34	11	7.5	345	57	43	197	148	0.0001	0.0002	0.0001	0.0003	0.0004
Huntingtown	25	26	9	35	29	10	7.5	287	57	43	164	124	0.0000	0.0002	0.0001	0.0003	0.0003
Lord Calvert Bowling Alley	25	83	28	110	90	30	7.5	903	57	43	515	389	0.0001	0.0005	0.0004	0.0009	0.0010
Lusby	25	23	8	30	25	8	7.5	246	57	43	140	106	0.0000	0.0001	0.0001	0.0002	0.0003
North Beach VFD	25	53	18	70	57	19	7.5	575	57	43	328	247	0.0001	0.0003	0.0002	0.0005	0.0006
Prince Frederick	25	53	18	70	57	19	7.5	575	57	43	328	247	0.0001	0.0003	0.0002	0.0005	0.0006
St. Leonard	25	38	13	50	41	14	7.5	411	57	43	234	177	0.0001	0.0002	0.0002	0.0004	0.0005
Sunderland	25	80	27	106	87	29	7.5	871	57	43	496	374	0.0001	0.0005	0.0004	0.0008	0.0010
PARK-AND-RIDE LOTS - MARYLAND								0									
CHARLES COUNTY								0									
301 Park & Ride	25	287	96	383	315	105	7.5	3,146	57	43	1,793	1,353	0.0005	0.0017	0.0013	0.0030	0.0035
Charles County Governme	25	26	9	35	29	10	7.5	287	57	43	164	124	0.0000	0.0002	0.0001	0.0003	0.0003
Food Lion Shopping Cent	25	38	13	50	41	14	7.5	411	57	43	234	177	0.0001	0.0002	0.0002	0.0004	0.0005
La Plata Armory	25	15	5	20	16	5	7.5	164	57	43	94	71	0.0000	0.0001	0.0001	0.0002	0.0002
Laurel Springs Regional P	25	38	13	50	41	14	7.5	411	57	43	234	177	0.0001	0.0002	0.0002	0.0004	0.0005
Life Wesleyan Church	25	38	13	50	41	14	7.5	411	57	43	234	177	0.0001	0.0002	0.0002	0.0004	0.0005
Mattawoman-Beantown R	25	435	145	580	476	159	7.5	4,764	57	43	2,715	2,048	0.0008	0.0025	0.0020	0.0045	0.0053
Smallwood Village	25	75	25	100	82	27	7.5	821	57	43	468	353	0.0001	0.0004	0.0003	0.0008	0.0009
St. Charles Towne	25	263	88	350	287	96	7.5	2,875	57	43	1,639	1,236	0.0005	0.0015	0.0012	0.0027	0.0032
PARK-AND-RIDE LOTS - MARYLAND								0									
FREDERICK COUNTY								0									
Frederick (north)	25	123	41	164	135	45	7.5	1,347	57	43	768	579	0.0002	0.0007	0.0006	0.0013	0.0015
Frederick (south)	25	173	58	230	189	63	7.5	1,889	57	43	1,077	812	0.0003	0.0010	0.0008	0.0018	0.0021
Monacacy Marcst	25	600	200	800	657	219	7.5	6,571	57	43	3,745	2,825	0.0011	0.0035	0.0027	0.0062	0.0073
PARK-AND-RIDE LOTS - MARYLAND								0									
MONTGOMERY COUNTY								0									
Colesville	0	190	0	190	208	0	7.5	1,561	57	43	890	671	0.0003	0.0008	0.0006	0.0015	0.0018
Damascus	50	0	0		0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Gaithersburg	50	259	259	517	283	283	7.5	4,246	57	43	2,420	1,826	0.0006	0.0022	0.0018	0.0040	0.0046
Gaithersburg	50	175	175	350	192	192	7.5	2,875	57	43	1,639	1,236	0.0004	0.0015	0.0012	0.0027	0.0031
Germantown Town	50	0	0		0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Greencastle	50	75	75	150	82	82	7.5	1,232	57	43	702	530	0.0002	0.0007	0.0005	0.0012	0.0013
Milestone Shopping	50	88	88	175	96	96	7.5	1,437	57	43	819	618	0.0002	0.0008	0.0006	0.0014	0.0016
PARK-AND-RIDE LOTS - MAYLAND								0									
PRINCE GEORGE'S COUNTY								0									
Hampton Mall	0	100	0	100	110	0	4.5	493	57	43	281	212	0.0002	0.0003	0.0002	0.0005	0.0006
Laurel (south)	25	513	171	684	562	187	7.5	5,618	57	43	3,202	2,416	0.0009	0.0030	0.0023	0.0053	0.0062
PARK-AND-RIDE LOTS - VIRGINIA								0									

EXHIBIT 3

2008 NOx AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
FY2006-2011 TIP AND 2005 CLRP AIR QUALITY CONFORMITY

													E M I S S I O N S				
LOCATION	OUTSIDE MSA (%)	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2008 INSIDE Growth Rate	2008 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile)	RUNNING Arterial Rate (gm/mile)	RUNNING Freeway Rate (gm/mile)	RUNNING Total Running Emission (tons/day)	TOTAL (tons/day)
					1.10	1.10							0.6291	0.4216	0.4385		
ARLINGTON COUNTY								0									
Ballston Public Parking G	25	375	125	500	411	137	7.5	4,107	57	43	2,341	1,766	0.0007	0.0022	0.0017	0.0039	0.0045
Washington-Lee	50	178	178	356	195	195	7.5	2,924	57	43	1,667	1,257	0.0004	0.0015	0.0012	0.0028	0.0032
PARK-AND-RIDE LOTS - VIRGINIA								0									
FAIRFAX COUNTY								0									
American Legion	50	50	50	100	55	55	7.5	821	57	43	468	353	0.0001	0.0004	0.0003	0.0008	0.0009
Canterbury Woods Pk	50	17	17	34	19	19	7.5	279	57	43	159	120	0.0000	0.0001	0.0001	0.0003	0.0003
Centreville	50	185	185	370	203	203	7.5	3,039	57	43	1,732	1,307	0.0004	0.0016	0.0013	0.0029	0.0033
Centreville United Method	50	74	74	147	80	80	7.5	1,207	57	43	688	519	0.0002	0.0006	0.0005	0.0011	0.0013
Fairfax County Governme	50	85	85	170	93	93	7.5	1,396	57	43	796	600	0.0002	0.0007	0.0006	0.0013	0.0015
Greenbriar Park	50	28	28	55	30	30	7.5	452	57	43	257	194	0.0001	0.0002	0.0002	0.0004	0.0005
Herndon-Monroe	50	873	873	1,745	956	956	7.5	14,333	57	43	8,170	6,163	0.0020	0.0076	0.0060	0.0136	0.0155
Michael's	50	100	100	200	110	110	7.5	1,643	57	43	936	706	0.0002	0.0009	0.0007	0.0016	0.0018
Parkwood Baptist	50	9	9	18	10	10	7.5	148	57	43	84	64	0.0000	0.0001	0.0001	0.0001	0.0002
South Run District Pk	50	170	170	340	186	186	7.5	2,793	57	43	1,592	1,201	0.0004	0.0015	0.0012	0.0026	0.0030
St Paul Chung Catholic C	50	50	50	100	55	55	7.5	821	57	43	468	353	0.0001	0.0004	0.0003	0.0008	0.0009
Stringfellow Rd	50	181	181	361	198	198	7.5	2,965	57	43	1,690	1,275	0.0004	0.0016	0.0012	0.0028	0.0032
Sully Station	50	70	70	140	77	77	7.5	1,150	57	43	655	494	0.0002	0.0006	0.0005	0.0011	0.0012
Sydenstricker Rd	50	84	84	167	91	91	7.5	1,372	57	43	782	590	0.0002	0.0007	0.0006	0.0013	0.0015
Wakefield Chapel Pk	50	25	25	50	27	27	7.5	411	57	43	234	177	0.0001	0.0002	0.0002	0.0004	0.0004
PARK-AND-RIDE LOTS - VIRGINIA								0									
LOUDOUN COUNTY								0									
Ashburn Farm	50	10	10	20	11	11	7.5	164	57	43	94	71	0.0000	0.0001	0.0001	0.0002	0.0002
Ashburn Village	50	20	20	40	22	22	7.5	329	57	43	187	141	0.0000	0.0002	0.0001	0.0003	0.0004
Cascades	50	28	28	55	30	30	7.5	452	57	43	257	194	0.0001	0.0002	0.0002	0.0004	0.0005
Dulles North Transit	50	375	375	750	411	411	7.5	6,160	57	43	3,511	2,649	0.0009	0.0033	0.0026	0.0058	0.0067
Hamilton	50	25	25	50	27	27	7.5	411	57	43	234	177	0.0001	0.0002	0.0002	0.0004	0.0004
Innovation Avenue	50	38	38	75	41	41	7.5	616	57	43	351	265	0.0001	0.0003	0.0003	0.0006	0.0007
Leesburg	50	25	25	50	27	27	7.5	411	57	43	234	177	0.0001	0.0002	0.0002	0.0004	0.0004
Leesburg Kohls	50	600	600	1200	657	657	7.5	9,856	57	43	5,618	4,238	0.0014	0.0052	0.0041	0.0093	0.0107
Purcellville	50	18	18	35	19	19	7.5	287	57	43	164	124	0.0000	0.0002	0.0001	0.0003	0.0003
Sterling Park SC	50	23	23	45	25	25	7.5	370	57	43	211	159	0.0001	0.0002	0.0002	0.0003	0.0004
Sterling Shaw Rd	50	24	24	48	26	26	7.5	394	57	43	225	170	0.0001	0.0002	0.0002	0.0004	0.0004
PARK-AND-RIDE LOTS - VIRGINIA								0									
PRINCE WILLIAM COUNTY								0									
Brittany	50	48	48	95	52	52	7.5	780	57	43	445	336	0.0001	0.0004	0.0003	0.0007	0.0008
Dale City	50	294	294	587	321	321	7.5	4,821	57	43	2,748	2,073	0.0007	0.0026	0.0020	0.0046	0.0052
Harbor Drive	50	100	100	200	110	110	7.5	1,643	57	43	936	706	0.0002	0.0009	0.0007	0.0016	0.0018
Lindendale	50	108	108	216	118	118	7.5	1,774	57	43	1,011	763	0.0002	0.0009	0.0007	0.0017	0.0019
Montclair	50	25	25	50	27	27	7.5	411	57	43	234	177	0.0001	0.0002	0.0002	0.0004	0.0004
PRTC Transit Center	50	93	93	185	101	101	7.5	1,520	57	43	866	653	0.0002	0.0008	0.0006	0.0014	0.0016
Tackett's Mill	50	85	85	169	93	93	7.5	1,388	57	43	791	597	0.0002	0.0007	0.0006	0.0013	0.0015
Triangle	50	15	15	29	16	16	7.5	238	57	43	136	102	0.0000	0.0001	0.0001	0.0002	0.0003
I-95 / Rt 123	50	282	282	563	308	308	7.5	4,624	57	43	2,636	1,988	0.0006	0.0024	0.0019	0.0044	0.0050
US 1 / VA 234	50	137	137	274	150	150	7.5	2,251	57	43	1,283	968	0.0003	0.0012	0.0009	0.0021	0.0024
MARC TRAIN COMMUTER LOTS								0									
College Park	25	431	144	574	471	157	7.5	4,715	57	43	2,687	2,027	0.0008	0.0025	0.0020	0.0045	0.0052
Frederick	0	0	0	0	0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Greenbelt	60	1346	2018	3364	1474	2210	7.5	27,630	57	43	15,749	11,881	0.0036	0.0146	0.0115	0.0261	0.0297
Harpers Ferry		98	0	98	107	0	7.5	805	57	43	459	346	0.0001	0.0004	0.0003	0.0008	0.0009
Muirkirk	60	260	390	650	285	427	7.5	5,339	57	43	3,043	2,296	0.0007	0.0028	0.0022	0.0050	0.0057
Seabrook	0	264	0	264	289	0	4.5	1,301	57	43	742	559	0.0004	0.0007	0.0005	0.0012	0.0016
Silver Spring	0	0	0	0	0	0	4.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Union Station	0	781	0	781	855	0	7.5	6,415	57	43	3,656	2,758	0.0012	0.0034	0.0027	0.0061	0.0073
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS								0									
Backlick Road	50	110	110	220	120	120	7.5	1,807	57	43	1,030	777	0.0003	0.0010	0.0008	0.0017	0.0020
Broad Run	50	198	198	396	217	217	7.5	3,253	57	43	1,854	1,399	0.0005	0.0017	0.0014	0.0031	0.0035

2008 NOx AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
FY2006-2011 TIP AND 2005 CLRP AIR QUALITY CONFORMITY

													E M I S S I O N S				
LOCATION	OUTSIDE MSA (%)	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2008 INSIDE Growth Rate	2008 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile	RUNNING Arterial Rate (gm/mile	RUNNING Freeway Rate (gm/mile	RUNNING Total Running Emission (tons/day)	TOTAL (tons/day)
					1.10	1.10							0.6291	0.4216	0.4385		
Burke Center	50	275	275	550	301	301	7.5	4,517	57	43	2,575	1,943	0.0006	0.0024	0.0019	0.0043	0.0049
Franconia/Springfield (ope	50	1900	1900	3800	2081	2081	7.5	31,212	57	43	17,791	13,421	0.0043	0.0165	0.0130	0.0295	0.0338
Lorton	50	100	100	200	110	110	7.5	1,643	57	43	936	706	0.0002	0.0009	0.0007	0.0016	0.0018
Manassas	50	187	187	374	205	205	7.5	3,072	57	43	1,751	1,321	0.0004	0.0016	0.0013	0.0029	0.0033
Manassas Park	50	150	150	300	164	164	7.5	2,464	57	43	1,405	1,060	0.0003	0.0013	0.0010	0.0023	0.0027
Quantico	50	109	109	217	119	119	7.5	1,782	57	43	1,016	766	0.0002	0.0009	0.0007	0.0017	0.0019
Rippon	50	150	150	300	164	164	7.5	2,464	57	43	1,405	1,060	0.0003	0.0013	0.0010	0.0023	0.0027
Rolling Road	50	185	185	370	203	203	7.5	3,039	57	43	1,732	1,307	0.0004	0.0016	0.0013	0.0029	0.0033
Woodbridge	50	294	294	588	322	322	7.5	4,830	57	43	2,753	2,077	0.0007	0.0026	0.0020	0.0046	0.0052
METRORAIL PARKING LOTS		0	0		0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Anacostia	25	861	287	1148	943	314	7.5	9,429	57	43	5,375	4,055	0.0015	0.0050	0.0039	0.0089	0.0104
Branch Avenue	50	1611	1611	3222	1764	1764	7.5	26,464	57	43	15,085	11,380	0.0037	0.0140	0.0110	0.0250	0.0287
Capitol Heights	50	194	194	387	212	212	7.5	3,179	57	43	1,812	1,367	0.0004	0.0017	0.0013	0.0030	0.0034
College Park	25	465	155	620	509	170	7.5	5,092	57	43	2,903	2,190	0.0008	0.0027	0.0021	0.0048	0.0056
Congress Heights	0	66	0	66	72	0	4.5	325	57	43	185	140	0.0001	0.0002	0.0001	0.0003	0.0004
Deanwood	0	194	0	194	212	0	7.5	1,593	57	43	908	685	0.0003	0.0008	0.0007	0.0015	0.0018
East Falls Church	50	221	221	442	242	242	7.5	3,630	57	43	2,069	1,561	0.0005	0.0019	0.0015	0.0034	0.0039
Forest Glen	50	329	329	658	360	360	7.5	5,405	57	43	3,081	2,324	0.0007	0.0029	0.0022	0.0051	0.0059
Franconia - Springfield	50	1987	1987	3973	2175	2175	4.5	19,579	57	43	11,160	8,419	0.0045	0.0104	0.0081	0.0185	0.0230
Glenmont	50	925	925	1850	1013	1013	4.5	9,117	57	43	5,197	3,920	0.0021	0.0048	0.0038	0.0086	0.0107
Greenbelt	50	1783	1783	3565	1952	1952	7.5	29,281	57	43	16,690	12,591	0.0041	0.0155	0.0122	0.0277	0.0317
Naylor Road	50	216	216	431	236	236	7.5	3,540	57	43	2,018	1,522	0.0005	0.0019	0.0015	0.0033	0.0038
Prince George's Plaza	25	927	309	1236	1015	338	7.5	10,152	57	43	5,787	4,365	0.0016	0.0054	0.0042	0.0096	0.0112
Southern Avenue	50	1090	1090	2180	1194	1194	4.5	10,743	57	43	6,124	4,620	0.0025	0.0057	0.0045	0.0102	0.0126
Suitland	50	1033	1033	2065	1131	1131	4.5	10,177	57	43	5,801	4,376	0.0024	0.0054	0.0042	0.0096	0.0120
Van Dorn Street	50	204	204	407	223	223	4.5	2,006	57	43	1,143	862	0.0005	0.0011	0.0008	0.0019	0.0024
West Hyattsville	25	453	151	604	496	165	7.5	4,961	57	43	2,828	2,133	0.0008	0.0026	0.0021	0.0047	0.0055
Wheaton	25	759	253	1012	831	277	7.5	8,312	57	43	4,738	3,574	0.0013	0.0044	0.0035	0.0079	0.0092
				108,310				779,428					0.1420	0.4129	0.3240	0.7369	0.8789

Bold figures: New numbers taken from P & R directory
Figures in bracket: Carry forward figures from conformity doc

Park lot Growth Rate	
transit trips 2008	973359
transit trips 2000	863783
Annual growth rate	0.015857
Growth factor (2002-2008)	1.095142

2009 VOC AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
FY2006-2011 TIP AND 2005 CLRP AIR QUALITY CONFORMITY

LOCATION	2002				2009	2009	AVERAGE	2002	2008	ARTERIAL	FREEWAY	ARTERIAL	FREEWAY	EMISSIONS				HOT SOAK	TOTAL
	OUTSIDE MSA	INSIDE MSA	OUTSIDE MSA	Total	INSIDE Growth Rate	OUTSIDE Growth Rate	TRIP LENGTH	VMT	VMT	%		VMT	VMT	COLD START Rate (gm/mile)	RUNNING Arterial Rate (gm/mile)	RUNNING Freeway Rate (gm/mile)	RUNNING Total Running	Rate (gm/mile)	(tons/day)
					1.12	1.12								1.0579	0.1824	0.1616		0.5831	
COMMUTER RAIL LOTS																			
BRUNSWICK 25%	25	305	102	**407**	341	114	7.5	3052.5	3,406	57	43	1,941	1,465	0.0009	0.0008	0.0005	0.0013	0.0005	0.0027
PT OF ROCKS 25%	25	204	68	**272**	228	76	7.5	2040	2,276	57	43	1,297	979	0.0006	0.0005	0.0003	0.0009	0.0003	0.0018
DICKERSON	0	15	0	**15**	17	0	7.5	112.5	126	57	43	72	54	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
BARNESVILLE	0	46	0	**46**	51	0	7.5	345	385	57	43	219	166	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003
GERMANTOWN	0	386	0	**386**	431	0	7.5	2895	3,230	57	43	1,841	1,389	0.0010	0.0007	0.0005	0.0012	0.0006	0.0028
MET GROVE	0	352	0	**352**	393	0	7.5	2640	2,946	57	43	1,679	1,267	0.0009	0.0007	0.0005	0.0011	0.0005	0.0025
WAS GROVE	0	15	0	**15**	17	0	7.5	112.5	126	57	43	72	54	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
GARRETT PARK	0	22	0	**22**	25	0	7.5	165	184	57	43	105	79	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002
BOWIE 50%	50	188	188	**375**	209	209	7.5	2812.5	3,138	57	43	1,789	1,349	0.0007	0.0007	0.0005	0.0012	0.0004	0.0023
SEABROOK 15%	15	224	40	**264**	250	44	7.5	1980	2,209	57	43	1,259	950	0.0006	0.0005	0.0003	0.0008	0.0004	0.0018
KENSINGTON	0	45	0	**45**	50	0	7.5	337.5	377	57	43	215	162	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003
LAUREL 30%	30	209	90	**299**	234	100	7.5	2242.5	2,502	57	43	1,426	1,076	0.0007	0.0006	0.0004	0.0010	0.0004	0.0020
GAITHESBURG	0	280	0	**280**	312	0	7.5	2100	2,343	57	43	1,336	1,008	0.0007	0.0005	0.0004	0.0009	0.0004	0.0020
BERWYN HEIGHTS	0	30	0	**30**	33	0	4.5	135	151	57	43	86	65	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002
RIVERDALE	0	65	0	**65**	73	0	4.5	292.5	326	57	43	186	140	0.0002	0.0001	0.0000	0.0001	0.0001	0.0004
								0	0										
METRO RAIL LOTS								0	0										
ADDISON ROAD 40%	40	791	527	**1318**	882	588	7.5	9885	11,030	57	43	6,287	4,743	0.0027	0.0025	0.0017	0.0042	0.0015	0.0085
ARCHIVES	0	12	0	12	13	0	4.5	54	60	57	43	34	26	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
ARLING	0	10	0	10	11	0	4.5	45	50	57	43	29	22	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
BALLSTON	0	1175	0	1175	1311	0	4.5	5287.5	5,900	57	43	3,363	2,537	0.0031	0.0014	0.0009	0.0023	0.0017	0.0070
BENN.RD	0	520	0	520	580	0	4.5	2340	2,611	57	43	1,488	1,123	0.0014	0.0006	0.0004	0.0010	0.0007	0.0031
BETH	0	395	0	395	441	0	4.5	1777.5	1,983	57	43	1,131	853	0.0010	0.0005	0.0003	0.0008	0.0006	0.0024
BRADD RD	0	10	0	**10**	11	0	4.5	45	50	57	43	29	22	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
BROOKLAND	0	27	0	**27**	30	0	4.5	121.5	136	57	43	77	58	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002
CHEVERLY	0	557	0	**557**	622	0	4.5	2506.5	2,797	57	43	1,594	1,203	0.0014	0.0006	0.0004	0.0011	0.0008	0.0033
CLARENDON	0	554	0	554	618	0	4.5	2493	2,782	57	43	1,586	1,196	0.0014	0.0006	0.0004	0.0011	0.0008	0.0033
CLEVELAND PK	0	366	0	366	408	0	4.5	1647	1,838	57	43	1,048	790	0.0010	0.0004	0.0003	0.0007	0.0005	0.0022
COURT HOUSE	0	256	0	256	286	0	4.5	1152	1,285	57	43	733	553	0.0007	0.0003	0.0002	0.0005	0.0004	0.0015
CRYSTAL CITY	0	347	0	347	387	0	4.5	1561.5	1,742	57	43	993	749	0.0009	0.0004	0.0003	0.0007	0.0005	0.0021
DEANWOOD	0	194	0	**194**	216	0	4.5	873	974	57	43	555	419	0.0005	0.0002	0.0001	0.0004	0.0003	0.0012
DUN LORING 10%	10	1220	136	**1355**	1361	151	4.5	6097.5	6,804	57	43	3,878	2,926	0.0033	0.0016	0.0010	0.0026	0.0018	0.0078
DUPONT CIRCLE	0	165	0	165	184	0	4.5	742.5	829	57	43	472	356	0.0004	0.0002	0.0001	0.0003	0.0002	0.0010
EASTERN MKT	0	178	0	178	199	0	4.5	801	894	57	43	509	384	0.0005	0.0002	0.0001	0.0003	0.0003	0.0011
EAST FALLS CH	0	442	0	**442**	493	0	4.5	1989	2,219	57	43	1,265	954	0.0012	0.0005	0.0003	0.0008	0.0006	0.0026
EIS	0	352	0	352	393	0	4.5	1584	1,767	57	43	1,007	760	0.0009	0.0004	0.0003	0.0007	0.0005	0.0021
FARRAGUT NORTH	0	102	0	102	114	0	4.5	459	512	57	43	292	220	0.0003	0.0001	0.0001	0.0002	0.0001	0.0006
FARRAGUT WEST	0	221	0	221	247	0	4.5	994.5	1,110	57	43	633	477	0.0006	0.0003	0.0002	0.0004	0.0003	0.0013
FEDERAL CENTER	0	75	0	75	84	0	4.5	337.5	377	57	43	215	162	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004
FEDERAL TRI	0	54	0	54	60	0	4.5	243	271	57	43	155	117	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
FOGGY	0	102	0	102	114	0	4.5	459	512	57	43	292	220	0.0003	0.0001	0.0001	0.0002	0.0001	0.0006
FORT TROTTEN	0	445	0	**445**	497	0	4.5	2002.5	2,234	57	43	1,274	961	0.0012	0.0005	0.0003	0.0009	0.0006	0.0027
FRH.HEIGHTS	0	679	0	679	758	0	4.5	3055.5	3,409	57	43	1,943	1,466	0.0018	0.0008	0.0005	0.0013	0.0010	0.0040
GALLERY PLACE	0	124	0	124	138	0	4.5	558	623	57	43	355	268	0.0003	0.0001	0.0001	0.0002	0.0002	0.0007
GROSVENOR	0	716	0	**716**	799	0	4.5	3222	3,595	57	43	2,049	1,546	0.0019	0.0008	0.0006	0.0014	0.0010	0.0043
HUNT NORTH 40%	40	1873	1249	**3122**	2090	1393	7.5	23415	26,127	57	43	14,893	11,235	0.0065	0.0060	0.0040	0.0100	0.0036	0.0201
JUD SQUARE	0	110	0	110	123	0	4.5	495	552	57	43	315	238	0.0003	0.0001	0.0001	0.0002	0.0002	0.0007
KING ST	0	30	0	**30**	33	0	4.5	135	151	57	43	86	65	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002
								0	0										
								0	0										
LANDOVER 25%	25	1410	470	**1880**	1573	524	7.5	14100	15,733	57	43	8,968	6,765	0.0043	0.0036	0.0024	0.0060	0.0024	0.0127
L'ENFANT PLAZA	0	296	0	296	330	0	4.5	1332	1,486	57	43	847	639	0.0008	0.0003	0.0002	0.0006	0.0004	0.0018
MCPHERSON SQ	0	52	0	52	58	0	4.5	234	261	57	43	149	112	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
MEDICAL CENTER	0	14	0	**14**	16	0	4.5	63	70	57	43	40	30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
METRO CENTER	0	177	0	177	198	0	4.5	796.5	889	57	43	507	382	0.0005	0.0002	0.0001	0.0003	0.0003	0.0011
MINNES	0	353	0	**353**	394	0	4.5	1588.5	1,773	57	43	1,010	762	0.0009	0.0004	0.0003	0.0007	0.0005	0.0021
NAT AIR	0	87	0	87	97	0	4.5	391.5	437	57	43	249	188	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
NEW CARROL 50%	50	1049	1049	**2097**	1170	1170	7.5	15727.5	17,549	57	43	10,003	7,546	0.0041	0.0040	0.0027	0.0067	0.0023	0.0131
PRNTAGON	0	561	0	561	626	0	4.5	2524.5	2,817	57	43	1,606	1,211	0.0015	0.0006	0.0004	0.0011	0.0008	0.0033
PENTAGON CITY	0	381	0	381	425	0	4.5	1714.5	1,913	57	43	1,090	823	0.0010	0.0004	0.0003	0.0007	0.0005	0.0023
POTOMAC AVE	0	533	0	533	595	0	4.5	2398.5	2,676	57	43	1,526	1,151	0.0014	0.0006	0.0004	0.0010	0.0008	0.0032
ROCKVILLE	0	667	0	**667**	744	0	4.5	3001.5	3,349	57	43	1,909	1,440	0.0017	0.0008	0.0005	0.0013	0.0010	0.0040
ROSSLYN	0	356	0	356	397	0	4.5	1602	1,788	57	43	1,019	769	0.0009	0.0004	0.0003	0.0007	0.0005	0.0021
SHADY GROVE 10%	10	3903	434	**4337**	4355	484	7.5	32527.5	36,295	57	43	20,688	15,607	0.0107	0.0083	0.0056	0.0139	0.0059	0.0305
SILVER SPRING	0	44	0	**44**	49	0	4.5	198	221	57	43	126	95	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003

LOCATION	OUTSIDE MSA	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2009 INSIDE Growth Rate 1.12	2009 OUTSIDE Growth Rate 1.12	AVERAGE TRIP LENGTH	2002 VMT	2008 VMT	EMISSIONS ARTERIAL %	EMISSIONS FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile) 1.0579	RUNNING Arterial Rate (gm/mile) 0.1824	RUNNING Freeway Rate (gm/mile) 0.1616	RUNNING Total Running	HOT SOAK Rate (gm/mile) 0.5831	TOTAL (tons/day)
SMITH MALL	0	120	0	120	134	0	4.5	540	603	57	43	343	259	0.0003	0.0001	0.0001	0.0002	0.0002	0.0007
STADIUM ARM	0	976	0	976	1089	0	4.5	4392	4,901	57	43	2,793	2,107	0.0025	0.0011	0.0008	0.0019	0.0014	0.0058
TAKOMA PK	0	146	0	**146**	163	0	4.5	657	733	57	43	418	315	0.0004	0.0002	0.0001	0.0003	0.0002	0.0009
TENLEYTON	0	17	0	**17**	19	0	4.5	76.5	85	57	43	49	37	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
TWINBROOK	0	1136	0	**1136**	1268	0	4.5	5112	5,704	57	43	3,251	2,453	0.0030	0.0013	0.0009	0.0022	0.0016	0.0068
UNION STAT	0	378	0	378	422	0	4.5	1701	1,898	57	43	1,082	816	0.0010	0.0004	0.0003	0.0007	0.0005	0.0023
VAN NESS	0	343	0	343	383	0	4.5	1543.5	1,722	57	43	982	741	0.0009	0.0004	0.0003	0.0007	0.0005	0.0020
VIENNA 25%	25	2798	933	**3731**	3122	1041	7.5	27982.5	31,224	57	43	17,798	13,426	0.0085	0.0072	0.0048	0.0119	0.0047	0.0251
VA SQUARE	0	642	0	642	716	0	4.5	2889	3,224	57	43	1,837	1,386	0.0017	0.0007	0.0005	0.0012	0.0009	0.0038
WEST FALLS CHURCH	0	2183	0	**2183**	2436	0	4.5	9823.5	10,961	57	43	6,248	4,713	0.0057	0.0025	0.0017	0.0042	0.0031	0.0130
WHITE FLINT	0	1633	0	1633	1822	0	4.5	7348.5	8,200	57	43	4,674	3,526	0.0042	0.0019	0.0013	0.0031	0.0023	0.0097
WOODLEY	0	68	0	68	76	0	4.5	306	341	57	43	195	147	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004
RHODE ISLAND 30%	30	266	114	**380**	297	127	7.5	2850	3,180	57	43	1,813	1,367	0.0008	0.0007	0.0005	0.0012	0.0005	0.0025
								0	0										
BUS & CAR POOL LOTS								0	0										
								0	0										
CARTER BARRON	0	798	0	798	890	0	4.5	3591	4,007	57	43	2,284	1,723	0.0021	0.0009	0.0006	0.0015	0.0011	0.0048
PG PLAZA	0	47	0	47	52	0	4.5	211.5	236	57	43	135	101	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
PENN MAR SHOPP.	0	100	0	**100**	112	0	4.5	450	502	57	43	286	216	0.0003	0.0001	0.0001	0.0002	0.0001	0.0006
CAP PLAZA	0	100	0	**100**	112	0	4.5	450	502	57	43	286	216	0.0003	0.0001	0.0001	0.0002	0.0001	0.0006
EASTOVER	0	100	0	**100**	112	0	4.5	450	502	57	43	286	216	0.0003	0.0001	0.0001	0.0002	0.0001	0.0006
FOUR MILE RUN	0	28	0	**28**	31	0	4.5	126	141	57	43	80	60	0.0001	0.0000	0.0000	0.0001	0.0000	0.0002
SPRINGFIELD MALL	0	580	0	**580**	647	0	4.5	2610	2,912	57	43	1,660	1,252	0.0015	0.0007	0.0004	0.0011	0.0008	0.0035
SPRINGFIELD METH C	0	48	0	**48**	54	0	4.5	216	241	57	43	137	104	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
FRED ARMORY	0	33	0	**33**	37	0	7.5	247.5	276	57	43	157	119	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
MYERSVILLE	0	65	0	**65**	73	0	7.5	487.5	544	57	43	310	234	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
ROSEMONT	0	45	0	**45**	50	0	7.5	337.5	377	57	43	215	162	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003
URBANA	0	193	0	**193**	215	0	7.5	1447.5	1,615	57	43	921	695	0.0005	0.0004	0.0002	0.0006	0.0003	0.0014
JEFFERSON	0	40	0	**40**	45	0	7.5	300	335	57	43	191	144	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003
NORBECK RD	0	248	0	**248**	277	0	7.5	1860	2,075	57	43	1,183	892	0.0006	0.0005	0.0003	0.0008	0.0004	0.0018
MONTROSE RD	0	650	0	**650**	725	0	7.5	4875	5,440	57	43	3,101	2,339	0.0017	0.0012	0.0008	0.0021	0.0009	0.0047
BRIGG CHENNY 50%	50	215	215	**430**	240	240	7.5	3225	3,599	57	43	2,051	1,547	0.0008	0.0008	0.0006	0.0014	0.0005	0.0027
COMUS ROAD	0	30	0	**30**	33	0	7.5	225	251	57	43	143	108	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
LAKEFOREST MALL	0	300	0	**300**	335	0	7.5	2250	2,511	57	43	1,431	1,080	0.0008	0.0006	0.0004	0.0010	0.0004	0.0022
BURTONSVILLE	0	500	0	**500**	558	0	7.5	3750	4,184	57	43	2,385	1,799	0.0013	0.0010	0.0006	0.0016	0.0007	0.0036
FORCEY MEM.	0	200	0	**200**	223	0	7.5	1500	1,674	57	43	954	720	0.0005	0.0004	0.0003	0.0006	0.0003	0.0014
TECH ROAD	0	155	0	**155**	173	0	7.5	1162.5	1,297	57	43	739	558	0.0004	0.0003	0.0002	0.0005	0.0002	0.0011
BELTWAY	0	265	0	**265**	296	0	7.5	1987.5	2,218	57	43	1,264	954	0.0007	0.0005	0.0003	0.0008	0.0004	0.0019
LAUREL VAN DUSEN	0	62	0	**62**	69	0	7.5	465	519	57	43	296	223	0.0002	0.0001	0.0001	0.0002	0.0001	0.0004
ACCOKEEK	0	450	0	**450**	502	0	7.5	3375	3,766	57	43	2,147	1,619	0.0012	0.0009	0.0006	0.0014	0.0006	0.0033
ABC DRIVE IN	0	100	0	**100**	112	0	7.5	750	837	57	43	477	360	0.0003	0.0002	0.0001	0.0003	0.0001	0.0007
BOWIE 20%	20	526	131	**657**	586	147	7.5	4927.5	5,498	57	43	3,134	2,364	0.0015	0.0013	0.0008	0.0021	0.0008	0.0045
CLINTON 50%	50	212	212	**424**	237	237	7.5	3180	3,548	57	43	2,023	1,526	0.0008	0.0008	0.0005	0.0014	0.0005	0.0026
OXON HILL 20%	20	519	130	**649**	579	145	7.5	4867.5	5,431	57	43	3,096	2,335	0.0015	0.0012	0.0008	0.0021	0.0008	0.0044
EQUESTRIAN CENTER	50	150	150	**300**	167	167	7.5	2250	2,511	57	43	1,431	1,080	0.0006	0.0006	0.0004	0.0010	0.0003	0.0019
BOWIE MARKET PLACE	0	50	0	**50**	56	0	7.5	375	418	57	43	239	180	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
FT.WASHINGTON	0	412	0	**412**	460	0	7.5	3090	3,448	57	43	1,965	1,483	0.0011	0.0008	0.0005	0.0013	0.0006	0.0030
MONTPELIER REC PAR	0	70	0	**70**	78	0	7.5	525	586	57	43	334	252	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
RESTON	0	1547	0	**1547**	1726	0	7.5	11602.5	12,946	57	43	7,379	5,567	0.0040	0.0030	0.0020	0.0050	0.0022	0.0112
GREENBRIAR	0	55	0	**55**	61	0	7.5	412.5	460	57	43	262	198	0.0001	0.0001	0.0001	0.0002	0.0001	0.0004
FAIR OAKS	0	150	0	**150**	167	0	7.5	1125	1,255	57	43	716	540	0.0004	0.0003	0.0002	0.0005	0.0002	0.0011
ROLLING VALLEY	0	628	0	**628**	701	0	7.5	4710	5,256	57	43	2,996	2,260	0.0016	0.0012	0.0008	0.0020	0.0009	0.0045
SPRINGFIELD PLAZA	0	230	0	**230**	257	0	7.5	1725	1,925	57	43	1,097	828	0.0006	0.0004	0.0003	0.0007	0.0003	0.0017
FAIRLANES BOWL	0	35	0	**35**	39	0	7.5	262.5	293	57	43	167	126	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
NOTTOWAY PARK	0	14	0	**14**	16	0	7.5	105	117	57	43	67	50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
HORNER RD	0	2397	0	**2397**	2675	0	7.5	17977.5	20,060	57	43	11,434	8,626	0.0062	0.0046	0.0031	0.0077	0.0034	0.0173
LAKE RIDGE	0	555	0	**555**	619	0	7.5	4162.5	4,645	57	43	2,647	1,997	0.0014	0.0011	0.0007	0.0018	0.0008	0.0040
MINNIEVILLE RD 40%	40	336	224	560	375	250	7.5	4200	4,687	57	43	2,671	2,015	0.0012	0.0011	0.0007	0.0018	0.0006	0.0036
GORDON BLVD	0	156	0	156	174	0	7.5	1170	1,306	57	43	744	561	0.0004	0.0003	0.0002	0.0005	0.0002	0.0011
HILLENDALE	0	248	0	**248**	277	0	7.5	1860	2,075	57	43	1,183	892	0.0006	0.0005	0.0003	0.0008	0.0004	0.0018
POTOMAC MILLS	0	946	0	**946**	1056	0	7.5	7095	7,917	57	43	4,513	3,404	0.0025	0.0018	0.0012	0.0030	0.0014	0.0068
								0	0										
								0	0										
PARK-AND-RIDE LOTS - MARYLAND								0	0										
CALVERT COUNTY								0	0										
Dunkirk	25	32	11	42	35	12	7.5	315	351	57	43	200	151	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003
Huntingtown	25	26	9	35	29	10	7.5	262.5	293	57	43	167	126	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Lord Calvert Bowling Alle	25	83	28	110	92	31	7.5	825	921	57	43	525	396	0.0003	0.0002	0.0001	0.0004	0.0001	0.0007
Lusby	25	23	8	30	25	8	7.5	225	251	57	43	143	108	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
North Beach VFD	25	53	18	70	59	20	7.5	525	586	57	43	334	252	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
Prince Frederick	25	53	18	70	59	20	7.5	525	586	57	43	334	252	0.0002	0.0001	0.0001	0.0002	0.0001	0.0005
St. Leonard	25	38	13	50	42	14	7.5	375	418	57	43	239	180	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003

LOCATION	2002				2009	2009	AVERAGE	2002	2008	ARTERIAL	FREEWAY	ARTERIAL	FREEWAY	EMISSIONS					TOTAL
	OUTSIDE MSA	INSIDE MSA	OUTSIDE MSA	Total	INSIDE	OUTSIDE	TRIP LENGTH	VMT	VMT	%		VMT	VMT	COLD START	RUNNING			HOT SOAK	(tons/day)
					Growth Rate	Growth Rate								Rate (gm/mile)	Arterial Rate (gm/mile)	Freeway Rate (gm/mile)	Total Running	Rate (gm/mile)	
					1.12	1.12								1.0579	0.1824	0.1616		0.5831	
Sunderland	25	80	27	106	89	30	7.5	795	887	57	43	506	381	0.0002	0.0002	0.0001	0.0003	0.0001	0.0007
PARK-AND-RIDE LOTS - MARYLAND								0	0										
CHARLES COUNTY								0	0										
301 Park & Ride	25	287	96	383	321	107	7.5	2872.5	3,205	57	43	1,827	1,378	0.0009	0.0007	0.0005	0.0012	0.0005	0.0026
Charles County Governm	25	26	9	35	29	10	7.5	262.5	293	57	43	167	126	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Food Lion Shopping Cer	25	38	13	50	42	14	7.5	375	418	57	43	239	180	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
La Plata Armory	25	15	5	20	17	6	7.5	150	167	57	43	95	72	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
Laurel Springs Regional	25	38	13	50	42	14	7.5	375	418	57	43	239	180	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
Life Wesleyan Church	25	38	13	50	42	14	7.5	375	418	57	43	239	180	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
Mattawoman-Beantown	25	435	145	580	485	162	7.5	4350	4,854	57	43	2,767	2,087	0.0013	0.0011	0.0007	0.0019	0.0007	0.0039
Smallwood Village	25	75	25	100	84	28	7.5	750	837	57	43	477	360	0.0002	0.0002	0.0001	0.0003	0.0001	0.0007
St. Charles Towne	25	263	88	350	293	98	7.5	2625	2,929	57	43	1,670	1,259	0.0008	0.0007	0.0004	0.0011	0.0004	0.0024
PARK-AND-RIDE LOTS	25	0	0		0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
FREDERICK COUNTY	25	0	0		0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Frederick (north)	25	123	41	164	137	46	7.5	1230	1,372	57	43	782	590	0.0004	0.0003	0.0002	0.0005	0.0002	0.0011
Frederick (south)	25	173	58	230	192	64	7.5	1725	1,925	57	43	1,097	828	0.0005	0.0004	0.0003	0.0007	0.0003	0.0015
Monacacy Marcst	25	600	200	800	670	223	7.5	6000	6,695	57	43	3,816	2,879	0.0018	0.0015	0.0010	0.0026	0.0010	0.0054
PARK-AND-RIDE LOTS - MARYLAND								0	0										
MONTGOMERY COUNTY								0	0										
Colesville	0	190	0	190	212	0	7.5	1425	1,590	57	43	906	684	0.0005	0.0004	0.0002	0.0006	0.0003	0.0014
Damascus	50	0	0		0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Gaithersburg	50	259	259	517	288	288	7.5	3877.5	4,327	57	43	2,466	1,860	0.0010	0.0010	0.0007	0.0017	0.0006	0.0032
Gaithersburg	50	175	175	350	195	195	7.5	2625	2,929	57	43	1,670	1,259	0.0007	0.0007	0.0004	0.0011	0.0004	0.0022
Germantown Town	50	0	0		0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Greencastle	50	75	75	150	84	84	7.5	1125	1,255	57	43	716	540	0.0003	0.0003	0.0002	0.0005	0.0002	0.0009
Milestone Shopping	50	88	88	175	98	98	7.5	1312.5	1,465	57	43	835	630	0.0003	0.0003	0.0002	0.0006	0.0002	0.0011
PARK-AND-RIDE LOTS - MAYLAND								0	0										
PRINCE GEORGE'S COUNTY								0	0										
Hampton Mall	0	100	0	100	112	0	4.5	450	502	57	43	286	216	0.0003	0.0001	0.0001	0.0002	0.0001	0.0006
Laurel (south)	25	513	171	684	572	191	7.5	5130	5,724	57	43	3,263	2,461	0.0016	0.0013	0.0009	0.0022	0.0009	0.0046
PARK-AND-RIDE LOTS - VIRGIN	0	0			0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ARLINGTON COUNTY		0	0		0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ballston Public Parking (	25	375	125	500	418	139	7.5	3750	4,184	57	43	2,385	1,799	0.0011	0.0010	0.0006	0.0016	0.0006	0.0034
Washington-Lee	50	178	178	356	199	199	7.5	2670	2,979	57	43	1,698	1,281	0.0007	0.0007	0.0005	0.0011	0.0004	0.0022
PARK-AND-RIDE LOTS - VIRGINIA								0	0										
FAIRFAX COUNTY								0	0										
American Legion	50	50	50	100	56	56	7.5	750	837	57	43	477	360	0.0002	0.0002	0.0001	0.0003	0.0001	0.0006
Canterbury Woods Pk	50	17	17	34	19	19	7.5	255	285	57	43	162	122	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Centreville	50	185	185	370	206	206	7.5	2775	3,096	57	43	1,765	1,331	0.0007	0.0007	0.0005	0.0012	0.0004	0.0023
Centreville United Metho	50	74	74	147	82	82	7.5	1102.5	1,230	57	43	701	529	0.0003	0.0003	0.0002	0.0005	0.0002	0.0009
Fairfax County Governm	50	85	85	170	95	95	7.5	1275	1,423	57	43	811	612	0.0003	0.0003	0.0002	0.0005	0.0002	0.0011
Greenbriar Park	50	28	28	55	31	31	7.5	412.5	460	57	43	262	198	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
Herndon-Monroe	50	873	873	1,745	974	974	7.5	13087.5	14,603	57	43	8,324	6,280	0.0034	0.0033	0.0022	0.0056	0.0019	0.0109
Michael's	50	100	100	200	112	112	7.5	1500	1,674	57	43	954	720	0.0004	0.0004	0.0003	0.0006	0.0002	0.0012
Parkwood Baptist	50	9	9	18	10	10	7.5	135	151	57	43	86	65	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
South Run District Pk	50	170	170	340	190	190	7.5	2550	2,845	57	43	1,622	1,224	0.0007	0.0007	0.0004	0.0011	0.0004	0.0021
St Paul Chung Catholic (	50	50	50	100	56	56	7.5	750	837	57	43	477	360	0.0002	0.0002	0.0001	0.0003	0.0001	0.0006
Stringfellow Rd	50	181	181	361	201	201	7.5	2707.5	3,021	57	43	1,722	1,299	0.0007	0.0007	0.0005	0.0012	0.0004	0.0022
Sully Station	50	70	70	140	78	78	7.5	1050	1,172	57	43	668	504	0.0003	0.0003	0.0002	0.0004	0.0002	0.0009
Sydenstricker Rd	50	84	84	167	93	93	7.5	1252.5	1,398	57	43	797	601	0.0003	0.0003	0.0002	0.0005	0.0002	0.0010
Wakefield Chapel Pk	50	25	25	50	28	28	7.5	375	418	57	43	239	180	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
PARK-AND-RIDE LOTS - VIRGINIA								0	0										
LOUDOUN COUNTY								0	0										
Ashburn Farm	50	10	10	20	11	11	7.5	150	167	57	43	95	72	0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
Ashburn Village	50	20	20	40	22	22	7.5	300	335	57	43	191	144	0.0001	0.0001	0.0001	0.0001	0.0000	0.0002
Cascades	50	28	28	55	31	31	7.5	412.5	460	57	43	262	198	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
Dulles North Transit	50	375	375	750	418	418	7.5	5625	6,277	57	43	3,578	2,699	0.0015	0.0014	0.0010	0.0024	0.0008	0.0047
Hamilton	50	25	25	50	28	28	7.5	375	418	57	43	239	180	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
Innovation Avenue	50	38	38	75	42	42	7.5	562.5	628	57	43	358	270	0.0001	0.0001	0.0001	0.0002	0.0001	0.0005
Leesburg	50	25	25	50	28	28	7.5	375	418	57	43	239	180	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
Leesburg Kohls	50	600	600	1200	670	670	7.5	9000	10,043	57	43	5,724	4,318	0.0023	0.0023	0.0015	0.0038	0.0013	0.0075
Purcellville	50	18	18	35	20	20	7.5	262.5	293	57	43	167	126	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
Sterling Park SC	50	23	23	45	25	25	7.5	337.5	377	57	43	215	162	0.0001	0.0001	0.0001	0.0001	0.0000	0.0003
Sterling Shaw Rd	50	24	24	48	27	27	7.5	360	402	57	43	229	173	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
PARK-AND-RIDE LOTS - VIRGINIA								0	0										
PRINCE WILLIAM COUNTY								0	0										
Brittany	50	48	48	95	53	53	7.5	712.5	795	57	43	453	342	0.0002	0.0002	0.0001	0.0003	0.0001	0.0006
Dale City	50	294	294	587	327	327	7.5	4402.5	4,912	57	43	2,800	2,112	0.0011	0.0011	0.0008	0.0019	0.0006	0.0037
Harbor Drive	50	100	100	200	112	112	7.5	1500	1,674	57	43	954	720	0.0004	0.0004	0.0003	0.0006	0.0002	0.0012
Lindendale	50	108	108	216	121	121	7.5	1620	1,808	57	43	1,030	777	0.0004	0.0004	0.0003	0.0007	0.0002	0.0013
Montclair	50	25	25	50	28	28	7.5	375	418	57	43	239	180	0.0001	0.0001	0.0001	0.0002	0.0001	0.0003
PRTC Transit Center	50	93	93	185	103	103	7.5	1387.5	1,548	57	43	882	666	0.0004	0.0004	0.0002	0.0006	0.0002	0.0012

EXHIBIT 4

LOCATION	OUTSIDE MSA	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2009 INSIDE Growth Rate	2009 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	2002 VMT	2008 VMT	EMISSIONS: ARTERIAL %	EMISSIONS: FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile)	RUNNING Arterial Rate (gm/mile)	RUNNING Freeway Rate (gm/mile)	RUNNING Total Running	HOT SOAK Rate (gm/mile)	TOTAL (tons/day)
					1.12	1.12								1.0579	0.1824	0.1616		0.5831	
Tackett's Mill	50	85	85	169	94	94	7.5	1267.5	1,414	57	43	806	608	0.0003	0.0003	0.0002	0.0005	0.0002	0.0011
Triangle	50	15	15	29	16	16	7.5	217.5	243	57	43	138	104	0.0001	0.0001	0.0000	0.0001	0.0000	0.0002
I-95 / Rt 123	50	282	282	563	314	314	7.5	4222.5	4,712	57	43	2,686	2,026	0.0011	0.0011	0.0007	0.0018	0.0006	0.0035
US 1 / VA 234	50	137	137	274	153	153	7.5	2055	2,293	57	43	1,307	986	0.0005	0.0005	0.0004	0.0009	0.0003	0.0017
MARC TRAIN COMMUTER LOTS								0	0										
College Park	25	431	144	574	480	160	7.5	4305	4,804	57	43	2,738	2,066	0.0013	0.0011	0.0007	0.0018	0.0007	0.0039
Frederick	0	0	0	0	0	0	7.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Greenbelt	60	1346	2018	3364	1501	2252	7.5	25230	28,153	57	43	16,047	12,106	0.0061	0.0065	0.0043	0.0108	0.0034	0.0203
Harpers Ferry		98	0	98	109	0	7.5	735	820	57	43	467	353	0.0003	0.0002	0.0001	0.0003	0.0001	0.0007
Muirkirk	60	260	390	650	290	435	7.5	4875	5,440	57	43	3,101	2,339	0.0012	0.0012	0.0008	0.0021	0.0007	0.0039
Seabrook	0	264	0	264	295	0	4.5	1188	1,326	57	43	756	570	0.0007	0.0003	0.0002	0.0005	0.0004	0.0016
Silver Spring	0	0	0	0	0	0	4.5	0	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Union Station	0	781	0	781	871	0	7.5	5857.5	6,536	57	43	3,726	2,810	0.0020	0.0015	0.0010	0.0025	0.0011	0.0057
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS								0	0										
Backlick Road	50	110	110	220	123	123	7.5	1650	1,841	57	43	1,049	792	0.0004	0.0004	0.0003	0.0007	0.0002	0.0014
Broad Run	50	198	198	396	221	221	7.5	2970	3,314	57	43	1,889	1,425	0.0008	0.0008	0.0005	0.0013	0.0004	0.0025
Burke Center	50	275	275	550	307	307	7.5	4125	4,603	57	43	2,624	1,979	0.0011	0.0011	0.0007	0.0018	0.0006	0.0034
Franconia/Springfield (or	50	1900	1900	3800	2120	2120	7.5	28500	31,801	57	43	18,127	13,675	0.0074	0.0073	0.0049	0.0122	0.0041	0.0237
Lorton	50	100	100	200	112	112	7.5	1500	1,674	57	43	954	720	0.0004	0.0004	0.0003	0.0006	0.0002	0.0012
Manassas	50	187	187	374	209	209	7.5	2805	3,130	57	43	1,784	1,346	0.0007	0.0007	0.0005	0.0012	0.0004	0.0023
Manassas Park	50	150	150	300	167	167	7.5	2250	2,511	57	43	1,431	1,080	0.0006	0.0006	0.0004	0.0010	0.0003	0.0019
Quantico	50	109	109	217	121	121	7.5	1627.5	1,816	57	43	1,035	781	0.0004	0.0004	0.0003	0.0007	0.0002	0.0014
Rippon	50	150	150	300	167	167	7.5	2250	2,511	57	43	1,431	1,080	0.0006	0.0006	0.0004	0.0010	0.0003	0.0019
Rolling Road	50	185	185	370	206	206	7.5	2775	3,096	57	43	1,765	1,331	0.0007	0.0007	0.0005	0.0012	0.0004	0.0023
Woodbridge	50	294	294	588	328	328	7.5	4410	4,921	57	43	2,805	2,116	0.0011	0.0011	0.0008	0.0019	0.0006	0.0037
METRORAIL PARKING LOTS								0	0										
Anacostia	25	861	287	1148	961	320	7.5	8610	9,607	57	43	5,476	4,131	0.0026	0.0022	0.0015	0.0037	0.0014	0.0077
Branch Avenue	50	1611	1611	3222	1798	1798	7.5	24165	26,964	57	43	15,370	11,595	0.0063	0.0062	0.0041	0.0103	0.0035	0.0201
Capitol Heights	50	194	194	387	216	216	7.5	2902.5	3,239	57	43	1,846	1,393	0.0008	0.0007	0.0005	0.0012	0.0004	0.0024
College Park	25	465	155	620	519	173	7.5	4650	5,189	57	43	2,958	2,231	0.0014	0.0012	0.0008	0.0020	0.0008	0.0042
Congress Heights	0	66	0	66	74	0	4.5	297	331	57	43	189	143	0.0002	0.0001	0.0001	0.0001	0.0001	0.0004
Deanwood	0	194	0	194	216	0	7.5	1455	1,624	57	43	925	698	0.0005	0.0004	0.0002	0.0006	0.0003	0.0014
East Falls Church	50	221	221	442	247	247	7.5	3315	3,699	57	43	2,108	1,591	0.0009	0.0008	0.0006	0.0014	0.0005	0.0028
Forest Glen	50	329	329	658	367	367	7.5	4935	5,507	57	43	3,139	2,368	0.0013	0.0013	0.0008	0.0021	0.0007	0.0041
Franconia - Springfield	50	1987	1987	3973	2217	2217	4.5	17878.5	19,949	57	43	11,371	8,578	0.0078	0.0046	0.0031	0.0076	0.0043	0.0197
Glenmont	50	925	925	1850	1032	1032	4.5	8325	9,289	57	43	5,295	3,994	0.0036	0.0021	0.0014	0.0036	0.0020	0.0092
Greenbelt	50	1783	1783	3565	1989	1989	7.5	26737.5	29,835	57	43	17,006	12,829	0.0070	0.0068	0.0046	0.0114	0.0038	0.0222
Naylor Road	50	216	216	431	240	240	7.5	3232.5	3,607	57	43	2,056	1,551	0.0008	0.0008	0.0006	0.0014	0.0005	0.0027
Prince George's Plaza	25	927	309	1236	1034	345	7.5	9270	10,344	57	43	5,896	4,448	0.0028	0.0024	0.0016	0.0040	0.0016	0.0083
Southern Avenue	50	1090	1090	2180	1216	1216	4.5	9810	10,946	57	43	6,239	4,707	0.0043	0.0025	0.0017	0.0042	0.0023	0.0108
Suitland	50	1033	1033	2065	1152	1152	4.5	9292.5	10,369	57	43	5,910	4,459	0.0040	0.0024	0.0016	0.0040	0.0022	0.0102
Van Dorn Street	50	204	204	407	227	227	4.5	1831.5	2,044	57	43	1,165	879	0.0008	0.0005	0.0003	0.0008	0.0004	0.0020
West Hyattsville	25	453	151	604	505	168	7.5	4530	5,055	57	43	2,881	2,174	0.0014	0.0012	0.0008	0.0019	0.0008	0.0041
Wheaton	25	759	253	1012	847	282	7.5	7590	8,469	57	43	4,827	3,642	0.0023	0.0019	0.0013	0.0032	0.0013	0.0068
		78629	29681	108,310	87737	33119		711714	794,156					0.2432	0.1820	0.1217	0.3037	0.1341	0.6810

Bold figures: New numbers taken from P & R directory
Figures in bracket: Carry forward figures from conformity doc.

Park lot Growth Rate	
transit trips 2009	992427
transit trips 2000	863783
Annual growth rate	0.0165479
Growth factor (2002-2009)	1.1158352

EXHIBIT 5

2009 NOx AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
FY2006-2011 TIP AND 2005 CLRP AIR QUALITY CONFORMITY

													E M I S S I O N S				
LOCATION	OUTSIDE MSA (%)	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2008 INSIDE Growth Rate	2008 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile	RUNNING Arterial Rate (gm/mile	RUNNING Freeway Rate (gm/mile	Total Running Emission (tons/day)	TOTAL (tons/day)
					1.12	1.12							0.5757	0.3773	0.3927		
COMMUTER RAIL LOTS																	
BRUNSWICK 25%	25	305	102	**407**	341	114	7.5	3,406	57	43	1,941	1,465	0.0005	0.0016	0.0013	0.0029	0.0034
PT OF ROCKS 25%	25	204	68	**272**	228	76	7.5	2,276	57	43	1,297	979	0.0003	0.0011	0.0008	0.0019	0.0023
DICKERSON	0	15	0	**15**	17	0	7.5	126	57	43	72	54	0.0000	0.0001	0.0000	0.0001	0.0001
BARNESVILLE	0	46	0	**46**	51	0	7.5	385	57	43	219	166	0.0001	0.0002	0.0001	0.0003	0.0004
GERMANTOWN	0	386	0	**386**	431	0	7.5	3,230	57	43	1,841	1,389	0.0005	0.0015	0.0012	0.0027	0.0033
MET GROVE	0	352	0	**352**	393	0	7.5	2,946	57	43	1,679	1,267	0.0005	0.0014	0.0011	0.0025	0.0030
WAS GROVE	0	15	0	**15**	17	0	7.5	126	57	43	72	54	0.0000	0.0001	0.0000	0.0001	0.0001
GARRETT PARK	0	22	0	**22**	25	0	7.5	184	57	43	105	79	0.0000	0.0001	0.0001	0.0002	0.0002
BOWIE 50%	50	188	188	**375**	209	209	7.5	3,138	57	43	1,789	1,349	0.0004	0.0015	0.0012	0.0027	0.0031
SEABROOK 15%	15	224	40	**264**	250	44	7.5	2,209	57	43	1,259	950	0.0003	0.0010	0.0008	0.0019	0.0022
KENSINGTON	0	45	0	**45**	50	0	7.5	377	57	43	215	162	0.0001	0.0002	0.0001	0.0003	0.0004
LAUREL 30%	30	209	90	**299**	234	100	7.5	2,502	57	43	1,426	1,076	0.0004	0.0012	0.0009	0.0021	0.0025
GAITHESBURG	0	280	0	**280**	312	0	7.5	2,343	57	43	1,336	1,008	0.0004	0.0011	0.0009	0.0020	0.0024
BERWYN HEIGHTS	0	30	0	**30**	33	0	4.5	151	57	43	86	65	0.0000	0.0001	0.0001	0.0001	0.0002
RIVERDALE	0	65	0	**65**	73	0	4.5	326	57	43	186	140	0.0001	0.0002	0.0001	0.0003	0.0004
								0									
METRO RAIL LOTS								0									
								0									
ADDISON ROAD 40%	40	791	527	**1318**	882	588	7.5	11,030	57	43	6,287	4,743	0.0015	0.0052	0.0041	0.0093	0.0108
ARCHIVES	0	12	0	12	13	0	4.5	60	57	43	34	26	0.0000	0.0000	0.0000	0.0001	0.0001
ARLING	0	10	0	10	11	0	4.5	50	57	43	29	22	0.0000	0.0000	0.0000	0.0000	0.0001
BALLSTON	0	1175	0	1175	1311	0	4.5	5,900	57	43	3,363	2,537	0.0017	0.0028	0.0022	0.0050	0.0067
BENN.RD	0	520	0	520	580	0	4.5	2,611	57	43	1,488	1,123	0.0007	0.0012	0.0010	0.0022	0.0029
BETH	0	395	0	395	441	0	4.5	1,983	57	43	1,131	853	0.0006	0.0009	0.0007	0.0017	0.0022
BRADD RD	0	10	0	**10**	11	0	4.5	50	57	43	29	22	0.0000	0.0000	0.0000	0.0000	0.0001
BROOKLAND	0	27	0	**27**	30	0	4.5	136	57	43	77	58	0.0000	0.0001	0.0001	0.0001	0.0002
CHEVERLY	0	557	0	**557**	622	0	4.5	2,797	57	43	1,594	1,203	0.0008	0.0013	0.0010	0.0024	0.0032
CLARENDON	0	554	0	554	618	0	4.5	2,782	57	43	1,586	1,196	0.0008	0.0013	0.0010	0.0024	0.0031
CLEVELAND PK	0	366	0	366	408	0	4.5	1,838	57	43	1,048	790	0.0005	0.0009	0.0007	0.0016	0.0021
COURT HOUSE	0	256	0	256	286	0	4.5	1,285	57	43	733	553	0.0004	0.0006	0.0005	0.0011	0.0015
CRYSTAL CITY	0	347	0	347	387	0	4.5	1,742	57	43	993	749	0.0005	0.0008	0.0006	0.0015	0.0020
DEANWOOD	0	194	0	**194**	216	0	4.5	974	57	43	555	419	0.0003	0.0005	0.0004	0.0008	0.0011
DUN LORING 10%	10	1220	136	**1355**	1361	151	4.5	6,804	57	43	3,878	2,926	0.0018	0.0032	0.0025	0.0058	0.0076
DUPONT CIRCLE	0	165	0	165	184	0	4.5	829	57	43	472	356	0.0002	0.0004	0.0003	0.0007	0.0009
EASTERN MKT	0	178	0	178	199	0	4.5	894	57	43	509	384	0.0003	0.0004	0.0003	0.0008	0.0010
EAST FALLS CH	0	442	0	**442**	493	0	4.5	2,219	57	43	1,265	954	0.0006	0.0011	0.0008	0.0019	0.0025
EIS	0	352	0	352	393	0	4.5	1,767	57	43	1,007	760	0.0005	0.0008	0.0007	0.0015	0.0020
FARRAGUT NORTH	0	102	0	102	114	0	4.5	512	57	43	292	220	0.0001	0.0002	0.0002	0.0004	0.0006
FARRAGUT WEST	0	221	0	221	247	0	4.5	1,110	57	43	633	477	0.0003	0.0005	0.0004	0.0009	0.0013
FEDERAL CENTER	0	75	0	75	84	0	4.5	377	57	43	215	162	0.0001	0.0002	0.0001	0.0003	0.0004
FEDERAL TRI	0	54	0	54	60	0	4.5	271	57	43	155	117	0.0001	0.0001	0.0001	0.0002	0.0003
FOGGY	0	102	0	102	114	0	4.5	512	57	43	292	220	0.0001	0.0002	0.0002	0.0004	0.0006
FORT TROTTEN	0	445	0	**445**	497	0	4.5	2,234	57	43	1,274	961	0.0006	0.0011	0.0008	0.0019	0.0025
FRH.HEIGHTS	0	679	0	679	758	0	4.5	3,409	57	43	1,943	1,466	0.0010	0.0016	0.0013	0.0029	0.0038
GALLERY PLACE	0	124	0	124	138	0	4.5	623	57	43	355	268	0.0002	0.0003	0.0002	0.0005	0.0007
GROSVENOR	0	716	0	**716**	799	0	4.5	3,595	57	43	2,049	1,546	0.0010	0.0017	0.0013	0.0030	0.0041
HUNT NORTH 40%	40	1873	1249	**3122**	2090	1393	7.5	26,127	57	43	14,893	11,235	0.0035	0.0124	0.0097	0.0221	0.0257
JUD SQUARE	0	110	0	110	123	0	4.5	552	57	43	315	238	0.0002	0.0003	0.0002	0.0005	0.0006
KING ST	0	30	0	**30**	33	0	4.5	151	57	43	86	65	0.0000	0.0001	0.0001	0.0001	0.0002
								0									
								0									
LANDOVER 25%	25	1410	470	**1880**	1573	524	7.5	15,733	57	43	8,968	6,765	0.0023	0.0075	0.0059	0.0133	0.0156
L'ENFANT PLAZA	0	296	0	296	330	0	4.5	1,486	57	43	847	639	0.0004	0.0007	0.0006	0.0013	0.0017
MCPHERSON SQ	0	52	0	52	58	0	4.5	261	57	43	149	112	0.0001	0.0001	0.0001	0.0002	0.0003
MEDICAL CENTER	0	14	0	**14**	16	0	4.5	70	57	43	40	30	0.0000	0.0000	0.0000	0.0001	0.0001
METRO CENTER	0	177	0	177	198	0	4.5	889	57	43	507	382	0.0003	0.0004	0.0003	0.0008	0.0010
MINNES	0	353	0	**353**	394	0	4.5	1,773	57	43	1,010	762	0.0005	0.0008	0.0007	0.0015	0.0020
NAT AIR	0	87	0	87	97	0	4.5	437	57	43	249	188	0.0001	0.0002	0.0002	0.0004	0.0005
NEW CARROL 50%	50	1049	1049	**2097**	1170	1170	7.5	17,549	57	43	10,003	7,546	0.0022	0.0083	0.0065	0.0149	0.0171
PRNTAGON	0	561	0	561	626	0	4.5	2,817	57	43	1,606	1,211	0.0008	0.0013	0.0010	0.0024	0.0032
PENTAGON CITY	0	381	0	381	425	0	4.5	1,913	57	43	1,090	823	0.0005	0.0009	0.0007	0.0016	0.0022
POTOMAC AVE	0	533	0	533	595	0	4.5	2,676	57	43	1,526	1,151	0.0008	0.0013	0.0010	0.0023	0.0030

2009 NOx AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
FY2006-2011 TIP AND 2005 CLRP AIR QUALITY CONFORMITY

													E M I S S I O N S				
LOCATION	OUTSIDE MSA (%)	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2008 INSIDE Growth Rate	2008 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile)	RUNNING Arterial Rate (gm/mile)	RUNNING Freeway Rate (gm/mile)	Total Running Emission (tons/day)	TOTAL (tons/day)
					1.12	1.12							0.5757	0.3773	0.3927		
ROCKVILLE	0	667	0	**667**	744	0	4.5	3,349	57	43	1,909	1,440	0.0009	0.0016	0.0012	0.0028	0.0038
ROSSLYN	0	356	0	356	397	0	4.5	1,788	57	43	1,019	769	0.0005	0.0008	0.0007	0.0015	0.0020
SHADY GROVE 10%	10	3903	434	**4337**	4355	484	7.5	36,295	57	43	20,688	15,607	0.0058	0.0172	0.0135	0.0307	0.0366
SILVER SPRING	0	44	0	**44**	49	0	4.5	221	57	43	126	95	0.0001	0.0001	0.0001	0.0002	0.0002
SMITH MALL	0	120	0	120	134	0	4.5	603	57	43	343	259	0.0002	0.0003	0.0002	0.0005	0.0007
STADIUM ARM	0	976	0	976	1089	0	4.5	4,901	57	43	2,793	2,107	0.0014	0.0023	0.0018	0.0041	0.0055
TAKOMA PK	0	146	0	**146**	163	0	4.5	733	57	43	418	315	0.0002	0.0003	0.0003	0.0006	0.0008
TENLEYTON	0	17	0	**17**	19	0	4.5	85	57	43	49	37	0.0000	0.0000	0.0000	0.0001	0.0001
TWINBROOK	0	1136	0	**1136**	1268	0	4.5	5,704	57	43	3,251	2,453	0.0016	0.0027	0.0021	0.0048	0.0064
UNION STAT	0	378	0	378	422	0	4.5	1,898	57	43	1,082	816	0.0005	0.0009	0.0007	0.0016	0.0021
VAN NESS	0	343	0	343	383	0	4.5	1,722	57	43	982	741	0.0005	0.0008	0.0006	0.0015	0.0019
VIENNA 25%	25	2798	933	**3731**	3122	1041	7.5	31,224	57	43	17,798	13,426	0.0046	0.0148	0.0116	0.0264	0.0311
VA SQUARE	0	642	0	642	716	0	4.5	3,224	57	43	1,837	1,386	0.0009	0.0015	0.0012	0.0027	0.0036
WEST FALLS CHURCH	0	2183	0	**2183**	2436	0	4.5	10,961	57	43	6,248	4,713	0.0031	0.0052	0.0041	0.0093	0.0124
WHITE FLINT	0	1633	0	1633	1822	0	4.5	8,200	57	43	4,674	3,526	0.0023	0.0039	0.0031	0.0069	0.0093
WOODLEY	0	68	0	68	76	0	4.5	341	57	43	195	147	0.0001	0.0002	0.0001	0.0003	0.0004
RHODE ISLAND 30%	30	266	114	**380**	297	127	7.5	3,180	57	43	1,813	1,367	0.0005	0.0015	0.0012	0.0027	0.0031
								0									
BUS & CAR POOL LOTS								0									
								0									
CARTER BARRON	0	798	0	798	890	0	4.5	4,007	57	43	2,284	1,723	0.0011	0.0019	0.0015	0.0034	0.0045
PG PLAZA	0	47	0	47	52	0	4.5	236	57	43	135	101	0.0001	0.0001	0.0001	0.0002	0.0003
PENN MAR SHOPP.	0	100	0	**100**	112	0	4.5	502	57	43	286	216	0.0001	0.0002	0.0002	0.0004	0.0006
CAP PLAZA	0	100	0	**100**	112	0	4.5	502	57	43	286	216	0.0001	0.0002	0.0002	0.0004	0.0006
EASTOVER	0	100	0	**100**	112	0	4.5	502	57	43	286	216	0.0001	0.0002	0.0002	0.0004	0.0006
FOUR MILE RUN	0	28	0	**28**	31	0	4.5	141	57	43	80	60	0.0000	0.0001	0.0001	0.0001	0.0002
SPRINGFIELD MALL	0	580	0	**580**	647	0	4.5	2,912	57	43	1,660	1,252	0.0008	0.0014	0.0011	0.0025	0.0033
SPRINGFIELD METH CH	0	48	0	**48**	54	0	4.5	241	57	43	137	104	0.0001	0.0001	0.0001	0.0002	0.0003
FRED ARMORY	0	33	0	**33**	37	0	7.5	276	57	43	157	119	0.0000	0.0001	0.0001	0.0002	0.0003
MYERSVILLE	0	65	0	**65**	73	0	7.5	544	57	43	310	234	0.0001	0.0003	0.0002	0.0005	0.0006
ROSEMONT	0	45	0	**45**	50	0	7.5	377	57	43	215	162	0.0001	0.0002	0.0001	0.0003	0.0004
URBANA	0	193	0	**193**	215	0	7.5	1,615	57	43	921	695	0.0003	0.0008	0.0006	0.0014	0.0016
JEFFERSON	0	40	0	**40**	45	0	7.5	335	57	43	191	144	0.0001	0.0002	0.0001	0.0003	0.0003
NORBECK RD	0	248	0	**248**	277	0	7.5	2,075	57	43	1,183	892	0.0004	0.0010	0.0008	0.0018	0.0021
MONTROSE RD	0	650	0	**650**	725	0	7.5	5,440	57	43	3,101	2,339	0.0009	0.0026	0.0020	0.0046	0.0055
BRIGG CHENNY 50%	50	215	215	**430**	240	240	7.5	3,599	57	43	2,051	1,547	0.0005	0.0017	0.0013	0.0030	0.0035
COMUS ROAD	0	30	0	**30**	33	0	7.5	251	57	43	143	108	0.0000	0.0001	0.0001	0.0002	0.0003
LAKEFOREST MALL	0	300	0	**300**	335	0	7.5	2,511	57	43	1,431	1,080	0.0004	0.0012	0.0009	0.0021	0.0025
BURTONSVILLE	0	500	0	**500**	558	0	7.5	4,184	57	43	2,385	1,799	0.0007	0.0020	0.0016	0.0035	0.0042
FORCEY MEM.	0	200	0	**200**	223	0	7.5	1,674	57	43	954	720	0.0003	0.0008	0.0006	0.0014	0.0017
TECH ROAD	0	155	0	**155**	173	0	7.5	1,297	57	43	739	558	0.0002	0.0006	0.0005	0.0011	0.0013
BELTWAY	0	265	0	**265**	296	0	7.5	2,218	57	43	1,264	954	0.0004	0.0011	0.0008	0.0019	0.0023
LAUREL VAN DUSEN	0	62	0	**62**	69	0	7.5	519	57	43	296	223	0.0001	0.0002	0.0002	0.0004	0.0005
ACCOKEEK	0	450	0	**450**	502	0	7.5	3,766	57	43	2,147	1,619	0.0006	0.0018	0.0014	0.0032	0.0038
ABC DRIVE IN	0	100	0	**100**	112	0	7.5	837	57	43	477	360	0.0001	0.0004	0.0003	0.0007	0.0008
BOWIE 20%	20	526	131	**657**	586	147	7.5	5,498	57	43	3,134	2,364	0.0008	0.0026	0.0020	0.0047	0.0055
CLINTON 50%	50	212	212	**424**	237	237	7.5	3,548	57	43	2,023	1,526	0.0005	0.0017	0.0013	0.0030	0.0035
OXON HILL 20%	20	519	130	**649**	579	145	7.5	5,431	57	43	3,096	2,335	0.0008	0.0026	0.0020	0.0046	0.0054
EQUESTRIAN CENTER	50	150	150	**300**	167	167	7.5	2,511	57	43	1,431	1,080	0.0003	0.0012	0.0009	0.0021	0.0024
BOWIE MARKET PLACE	0	50	0	**50**	56	0	7.5	418	57	43	239	180	0.0001	0.0002	0.0002	0.0004	0.0004
FT.WASHINGTON	0	412	0	**412**	460	0	7.5	3,448	57	43	1,965	1,483	0.0006	0.0016	0.0013	0.0029	0.0035
MONTPELIER REC PAR	0	70	0	**70**	78	0	7.5	586	57	43	334	252	0.0001	0.0003	0.0002	0.0005	0.0006
RESTON	0	1547	0	**1547**	1726	0	7.5	12,946	57	43	7,379	5,567	0.0022	0.0061	0.0048	0.0110	0.0131
GREENBRIAR	0	55	0	**55**	61	0	7.5	460	57	43	262	198	0.0001	0.0002	0.0002	0.0004	0.0005
FAIR OAKS	0	150	0	**150**	167	0	7.5	1,255	57	43	716	540	0.0002	0.0006	0.0005	0.0011	0.0013
ROLLING VALLEY	0	628	0	**628**	701	0	7.5	5,256	57	43	2,996	2,260	0.0009	0.0025	0.0020	0.0044	0.0053
SPRINGFIELD PLAZA	0	230	0	**230**	257	0	7.5	1,925	57	43	1,097	828	0.0003	0.0009	0.0007	0.0016	0.0020

EXHIBIT 5

2009 NOx AIR QUALITY EMISSIONS INVENTORY
AUTO ACCESS TO TRANSIT
(8-HOUR OZONE AREA)
FY2006-2011 TIP AND 2005 CLRP AIR QUALITY CONFORMITY

LOCATION	OUTSIDE MSA (%)	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2008 INSIDE Growth Rate	2008 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	EMISSIONS COLD START Rate (gm/mile)	EMISSIONS RUNNING Arterial Rate (gm/mile)	EMISSIONS RUNNING Freeway Rate (gm/mile)	EMISSIONS RUNNING Total Running Emission (tons/day)	EMISSIONS TOTAL (tons/day)
					1.12	1.12							0.5757	0.3773	0.3927		
FAIRLANES BOWL	0	35	0	**35**	39	0	7.5	293	57	43	167	126	0.0000	0.0001	0.0001	0.0002	0.0003
NOTTOWAY PARK	0	14	0	**14**	16	0	7.5	117	57	43	67	50	0.0000	0.0001	0.0000	0.0001	0.0001
HORNER RD	0	2397	0	**2397**	2675	0	7.5	20,060	57	43	11,434	8,626	0.0034	0.0095	0.0075	0.0170	0.0204
LAKE RIDGE	0	555	0	**555**	619	0	7.5	4,645	57	43	2,647	1,997	0.0008	0.0022	0.0017	0.0039	0.0047
MINNIEVILLE RD 40%	40	336	224	560	375	250	7.5	4,687	57	43	2,671	2,015	0.0006	0.0022	0.0017	0.0040	0.0046
GORDON BLVD	0	156	0	156	174	0	7.5	1,306	57	43	744	561	0.0002	0.0006	0.0005	0.0011	0.0013
HILLENDALE	0	248	0	**248**	277	0	7.5	2,075	57	43	1,183	892	0.0004	0.0010	0.0008	0.0018	0.0021
POTOMAC MILLS	0	946	0	**946**	1056	0	7.5	7,917	57	43	4,513	3,404	0.0013	0.0038	0.0029	0.0067	0.0080
								0									
								0									
PARK-AND-RIDE LOTS - MARYLAND								0									
CALVERT COUNTY								0									
Dunkirk	25	32	11	42	35	12	7.5	351	57	43	200	151	0.0001	0.0002	0.0001	0.0003	0.0003
Huntingtown	25	26	9	35	29	10	7.5	293	57	43	167	126	0.0000	0.0001	0.0001	0.0002	0.0003
Lord Calvert Bowling Alley	25	83	28	110	92	31	7.5	921	57	43	525	396	0.0001	0.0004	0.0003	0.0008	0.0009
Lusby	25	23	8	30	25	8	7.5	251	57	43	143	108	0.0000	0.0001	0.0001	0.0002	0.0002
North Beach VFD	25	53	18	70	59	20	7.5	586	57	43	334	252	0.0001	0.0003	0.0002	0.0005	0.0006
Prince Frederick	25	53	18	70	59	20	7.5	586	57	43	334	252	0.0001	0.0003	0.0002	0.0005	0.0006
St. Leonard	25	38	13	50	42	14	7.5	418	57	43	239	180	0.0001	0.0002	0.0002	0.0004	0.0004
Sunderland	25	80	27	106	89	30	7.5	887	57	43	506	381	0.0001	0.0004	0.0003	0.0008	0.0009
PARK-AND-RIDE LOTS - MARYLAND								0									
CHARLES COUNTY								0									
301 Park & Ride	25	287	96	383	321	107	7.5	3,205	57	43	1,827	1,378	0.0005	0.0015	0.0012	0.0027	0.0032
Charles County Governm	25	26	9	35	29	10	7.5	293	57	43	167	126	0.0000	0.0001	0.0001	0.0002	0.0003
Food Lion Shopping Cent	25	38	13	50	42	14	7.5	418	57	43	239	180	0.0001	0.0002	0.0002	0.0004	0.0004
La Plata Armory	25	15	5	20	17	6	7.5	167	57	43	95	72	0.0000	0.0001	0.0001	0.0001	0.0002
Laurel Springs Regional F	25	38	13	50	42	14	7.5	418	57	43	239	180	0.0001	0.0002	0.0002	0.0004	0.0004
Life Wesleyan Church	25	38	13	50	42	14	7.5	418	57	43	239	180	0.0001	0.0002	0.0002	0.0004	0.0004
Mattawoman-Beantown R	25	435	145	580	485	162	7.5	4,854	57	43	2,767	2,087	0.0007	0.0023	0.0018	0.0041	0.0048
Smallwood Village	25	75	25	100	84	28	7.5	837	57	43	477	360	0.0001	0.0004	0.0003	0.0007	0.0008
St. Charles Towne	25	263	88	350	293	98	7.5	2,929	57	43	1,670	1,259	0.0004	0.0014	0.0011	0.0025	0.0029
PARK-AND-RIDE LOTS - MARYLAND								0									
FREDERICK COUNTY								0									
Frederick (north)	25	123	41	164	137	46	7.5	1,372	57	43	782	590	0.0002	0.0007	0.0005	0.0012	0.0014
Frederick (south)	25	173	58	230	192	64	7.5	1,925	57	43	1,097	828	0.0003	0.0009	0.0007	0.0016	0.0019
Monacacy Marcst	25	600	200	800	670	223	7.5	6,695	57	43	3,816	2,879	0.0010	0.0032	0.0025	0.0057	0.0067
PARK-AND-RIDE LOTS - MARYLAND								0									
MONTGOMERY COUNTY								0									
Colesville	0	190	0	190	212	0	7.5	1,590	57	43	906	684	0.0003	0.0008	0.0006	0.0013	0.0016
Damascus	50	0	0		0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Gaithersburg	50	259	259	517	288	288	7.5	4,327	57	43	2,466	1,860	0.0005	0.0021	0.0016	0.0037	0.0042
Gaithersburg	50	175	175	350	195	195	7.5	2,929	57	43	1,670	1,259	0.0004	0.0014	0.0011	0.0025	0.0029
Germantown Town	50	0	0		0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Greencastle	50	75	75	150	84	84	7.5	1,255	57	43	716	540	0.0002	0.0006	0.0005	0.0011	0.0012
Milestone Shopping	50	88	88	175	98	98	7.5	1,465	57	43	835	630	0.0002	0.0007	0.0005	0.0012	0.0014
PARK-AND-RIDE LOTS - MAYLAND								0									
PRINCE GEORGE'S COUNTY								0									
Hampton Mall	0	100	0	100	112	0	4.5	502	57	43	286	216	0.0001	0.0002	0.0002	0.0004	0.0006
Laurel (south)	25	513	171	684	572	191	7.5	5,724	57	43	3,263	2,461	0.0008	0.0027	0.0021	0.0048	0.0057
PARK-AND-RIDE LOTS - VIRGINIA								0									
ARLINGTON COUNTY								0									
Ballston Public Parking G	25	375	125	500	418	139	7.5	4,184	57	43	2,385	1,799	0.0006	0.0020	0.0016	0.0035	0.0042
Washington-Lee	50	178	178	356	199	199	7.5	2,979	57	43	1,698	1,281	0.0004	0.0014	0.0011	0.0025	0.0029
PARK-AND-RIDE LOTS - VIRGINIA								0									
FAIRFAX COUNTY								0									
American Legion	50	50	50	100	56	56	7.5	837	57	43	477	360	0.0001	0.0004	0.0003	0.0007	0.0008
Canterbury Woods Pk	50	17	17	34	19	19	7.5	285	57	43	162	122	0.0000	0.0001	0.0001	0.0002	0.0003
Centreville	50	185	185	370	206	206	7.5	3,096	57	43	1,765	1,331	0.0004	0.0015	0.0012	0.0026	0.0030
Centreville United Method	50	74	74	147	82	82	7.5	1,230	57	43	701	529	0.0002	0.0006	0.0005	0.0010	0.0012
Fairfax County Governme	50	85	85	170	95	95	7.5	1,423	57	43	811	612	0.0002	0.0007	0.0005	0.0012	0.0014
Greenbriar Park	50	28	28	55	31	31	7.5	460	57	43	262	198	0.0001	0.0002	0.0002	0.0004	0.0004
Herndon-Monroe	50	873	873	1,745	974	974	7.5	14,603	57	43	8,324	6,280	0.0019	0.0069	0.0054	0.0124	0.0142
Michael's	50	100	100	200	112	112	7.5	1,674	57	43	954	720	0.0002	0.0008	0.0006	0.0014	0.0016
Packwood Baptist	50	9	9	18	10	10	7.5	151	57	43	86	65	0.0000	0.0001	0.0001	0.0001	0.0001

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													E M I S S I O N S				
LOCATION	OUTSIDE MSA (%)	2002 INSIDE MSA	2002 OUTSIDE MSA	2002 Total	2008 INSIDE Growth Rate	2008 OUTSIDE Growth Rate	AVERAGE TRIP LENGTH	VMT	ARTERIAL %	FREEWAY %	ARTERIAL VMT	FREEWAY VMT	COLD START Rate (gm/mile)	RUNNING Arterial Rate (gm/mile)	RUNNING Freeway Rate (gm/mile)	RUNNING Total Running Emission (tons/day)	TOTAL (tons/day)
					1.12	1.12							0.5757	0.3773	0.3927		
South Run District Pk	50	170	170	340	190	190	7.5	2,845	57	43	1,622	1,224	0.0004	0.0013	0.0011	0.0024	0.0028
St Paul Chung Catholic C	50	50	50	100	56	56	7.5	837	57	43	477	360	0.0001	0.0004	0.0003	0.0007	0.0008
Stringfellow Rd	50	181	181	361	201	201	7.5	3,021	57	43	1,722	1,299	0.0004	0.0014	0.0011	0.0026	0.0029
Sully Station	50	70	70	140	78	78	7.5	1,172	57	43	668	504	0.0001	0.0006	0.0004	0.0010	0.0011
Sydenstricker Rd	50	84	84	167	93	93	7.5	1,398	57	43	797	601	0.0002	0.0007	0.0005	0.0012	0.0014
Wakefield Chapel Pk	50	25	25	50	28	28	7.5	418	57	43	239	180	0.0001	0.0002	0.0002	0.0004	0.0004
PARK-AND-RIDE LOTS - VIRGINIA								0									
LOUDOUN COUNTY								0									
Ashburn Farm	50	10	10	20	11	11	7.5	167	57	43	95	72	0.0000	0.0001	0.0001	0.0001	0.0002
Ashburn Village	50	20	20	40	22	22	7.5	335	57	43	191	144	0.0000	0.0002	0.0001	0.0003	0.0003
Cascades	50	28	28	55	31	31	7.5	460	57	43	262	198	0.0001	0.0002	0.0002	0.0004	0.0004
Dulles North Transit	50	375	375	750	418	418	7.5	6,277	57	43	3,578	2,699	0.0008	0.0030	0.0023	0.0053	0.0061
Hamilton	50	25	25	50	28	28	7.5	418	57	43	239	180	0.0001	0.0002	0.0002	0.0004	0.0004
Innovation Avenue	50	38	38	75	42	42	7.5	628	57	43	358	270	0.0001	0.0003	0.0002	0.0005	0.0006
Leesburg	50	25	25	50	28	28	7.5	418	57	43	239	180	0.0001	0.0002	0.0002	0.0004	0.0004
Leesburg Kohls	50	600	600	1200	670	670	7.5	10,043	57	43	5,724	4,318	0.0013	0.0048	0.0037	0.0085	0.0098
Purcellville	50	18	18	35	20	20	7.5	293	57	43	167	126	0.0000	0.0001	0.0001	0.0002	0.0003
Sterling Park SC	50	23	23	45	25	25	7.5	377	57	43	215	162	0.0000	0.0002	0.0001	0.0003	0.0004
Sterling Shaw Rd	50	24	24	48	27	27	7.5	402	57	43	229	173	0.0001	0.0002	0.0001	0.0003	0.0004
PARK-AND-RIDE LOTS - VIRGINIA								0									
PRINCE WILLIAM COUNTY								0									
Brittany	50	48	48	95	53	53	7.5	795	57	43	453	342	0.0001	0.0004	0.0003	0.0007	0.0008
Dale City	50	294	294	587	327	327	7.5	4,912	57	43	2,800	2,112	0.0006	0.0023	0.0018	0.0042	0.0048
Harbor Drive	50	100	100	200	112	112	7.5	1,674	57	43	954	720	0.0002	0.0008	0.0006	0.0014	0.0016
Lindendale	50	108	108	216	121	121	7.5	1,808	57	43	1,030	777	0.0002	0.0009	0.0007	0.0015	0.0018
Montclair	50	25	25	50	28	28	7.5	418	57	43	239	180	0.0001	0.0002	0.0002	0.0004	0.0004
PRTC Transit Center	50	93	93	185	103	103	7.5	1,548	57	43	882	666	0.0002	0.0007	0.0006	0.0013	0.0015
Tackett's Mill	50	85	85	169	94	94	7.5	1,414	57	43	806	608	0.0002	0.0007	0.0005	0.0012	0.0014
Triangle	50	15	15	29	16	16	7.5	243	57	43	138	104	0.0000	0.0001	0.0001	0.0002	0.0002
I-95 / Rt 123	50	282	282	563	314	314	7.5	4,712	57	43	2,686	2,026	0.0006	0.0022	0.0018	0.0040	0.0046
US 1 / VA 234	50	137	137	274	153	153	7.5	2,293	57	43	1,307	986	0.0003	0.0011	0.0009	0.0019	0.0022
MARC TRAIN COMMUTER LOTS								0									
College Park	25	431	144	574	480	160	7.5	4,804	57	43	2,738	2,066	0.0007	0.0023	0.0018	0.0041	0.0048
Frederick	0	0	0	0	0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Greenbelt	60	1346	2018	3364	1501	2252	7.5	28,153	57	43	16,047	12,106	0.0033	0.0133	0.0105	0.0238	0.0272
Harpers Ferry		98	0	98	109	0	7.5	820	57	43	467	353	0.0001	0.0004	0.0003	0.0007	0.0008
Muirkirk	60	260	390	650	290	435	7.5	5,440	57	43	3,101	2,339	0.0006	0.0026	0.0020	0.0046	0.0052
Seabrook	0	264	0	264	295	0	4.5	1,326	57	43	756	570	0.0004	0.0006	0.0005	0.0011	0.0015
Silver Spring	0	0	0	0	0	0	4.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Union Station	0	781	0	781	871	0	7.5	6,536	57	43	3,726	2,810	0.0011	0.0031	0.0024	0.0055	0.0066
VIRGINIA RAILWAY EXPRESS COMMUTER LOTS								0									
Backlick Road	50	110	110	220	123	123	7.5	1,841	57	43	1,049	792	0.0002	0.0009	0.0007	0.0016	0.0018
Broad Run	50	198	198	396	221	221	7.5	3,314	57	43	1,889	1,425	0.0004	0.0016	0.0012	0.0028	0.0032
Burke Center	50	275	275	550	307	307	7.5	4,603	57	43	2,624	1,979	0.0006	0.0022	0.0017	0.0039	0.0045
Franconia/Springfield (op	50	1900	1900	3800	2120	2120	7.5	31,801	57	43	18,127	13,675	0.0040	0.0151	0.0118	0.0269	0.0310
Lorton	50	100	100	200	112	112	7.5	1,674	57	43	954	720	0.0002	0.0008	0.0006	0.0014	0.0016
Manassas	50	187	187	374	209	209	7.5	3,130	57	43	1,784	1,346	0.0004	0.0015	0.0012	0.0026	0.0030
Manassas Park	50	150	150	300	167	167	7.5	2,511	57	43	1,431	1,080	0.0003	0.0012	0.0009	0.0021	0.0024
Quantico	50	109	109	217	121	121	7.5	1,816	57	43	1,035	781	0.0002	0.0009	0.0007	0.0015	0.0018
Rippon	50	150	150	300	167	167	7.5	2,511	57	43	1,431	1,080	0.0003	0.0012	0.0009	0.0021	0.0024
Rolling Road	50	185	185	370	206	206	7.5	3,096	57	43	1,765	1,331	0.0004	0.0015	0.0012	0.0026	0.0030
Woodbridge	50	294	294	588	328	328	7.5	4,921	57	43	2,805	2,116	0.0006	0.0023	0.0018	0.0042	0.0048
METRORAIL PARKING LOTS		0	0		0	0	7.5	0	57	43	0	0	0.0000	0.0000	0.0000	0.0000	0.0000
Anacostia	25	861	287	1148	961	320	7.5	9,607	57	43	5,476	4,131	0.0014	0.0046	0.0036	0.0081	0.0096

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					1.12	1.12							0.5757	0.3773	0.3927		
Branch Avenue	50	1611	1611	3222	1798	1798	7.5	26,964	57	43	15,370	11,595	0.0034	0.0128	0.0100	0.0228	0.0262
Capitol Heights	50	194	194	387	216	216	7.5	3,239	57	43	1,846	1,393	0.0004	0.0015	0.0012	0.0027	0.0032
College Park	25	465	155	620	519	173	7.5	5,189	57	43	2,958	2,231	0.0008	0.0025	0.0019	0.0044	0.0052
Congress Heights	0	66	0	66	74	0	4.5	331	57	43	189	143	0.0001	0.0002	0.0001	0.0003	0.0004
Deanwood	0	194	0	194	216	0	7.5	1,624	57	43	925	698	0.0003	0.0008	0.0006	0.0014	0.0016
East Falls Church	50	221	221	442	247	247	7.5	3,699	57	43	2,108	1,591	0.0005	0.0018	0.0014	0.0031	0.0036
Forest Glen	50	329	329	658	367	367	7.5	5,507	57	43	3,139	2,368	0.0007	0.0026	0.0020	0.0047	0.0054
Franconia - Springfield	50	1987	1987	3973	2217	2217	4.5	19,949	57	43	11,371	8,578	0.0042	0.0095	0.0074	0.0169	0.0211
Glenmont	50	925	925	1850	1032	1032	4.5	9,289	57	43	5,295	3,994	0.0020	0.0044	0.0035	0.0079	0.0098
Greenbelt	50	1783	1783	3565	1989	1989	7.5	29,835	57	43	17,006	12,829	0.0038	0.0141	0.0111	0.0253	0.0290
Naylor Road	50	216	216	431	240	240	7.5	3,607	57	43	2,056	1,551	0.0005	0.0017	0.0013	0.0031	0.0035
Prince George's Plaza	25	927	309	1236	1034	345	7.5	10,344	57	43	5,896	4,448	0.0015	0.0049	0.0039	0.0088	0.0103
Southern Avenue	50	1090	1090	2180	1216	1216	4.5	10,946	57	43	6,239	4,707	0.0023	0.0052	0.0041	0.0093	0.0116
Suitland	50	1033	1033	2065	1152	1152	4.5	10,369	57	43	5,910	4,459	0.0022	0.0049	0.0039	0.0088	0.0110
Van Dorn Street	50	204	204	407	227	227	4.5	2,044	57	43	1,165	879	0.0004	0.0010	0.0008	0.0017	0.0022
West Hyattsville	25	453	151	604	505	168	7.5	5,055	57	43	2,881	2,174	0.0007	0.0024	0.0019	0.0043	0.0050
Wheaton	25	759	253	1012	847	282	7.5	8,469	57	43	4,827	3,642	0.0013	0.0040	0.0032	0.0072	0.0084
				108,310				794,156					0.1324	0.3765	0.2956	0.6722	0.8045

Bold figures: New numbers taken from P & R directory
Figures in bracket: Carry forward figures from conformity doc.

Park lot Growth Rate	
transit trips 2009	992427
transit trips 2000	863783
Annual growth rate	0.0165479
Growth factor (2002-2009)	1.1158352