



Technical Committee
Item #2

August 27, 2004

Memorandum

To: TPB Technical Committee

From: Daivamani Sivasailam
Principal Transportation Engineer

Subject: Update on Transportation Emissions Reduction Measures (TERM) Analysis

As part of the conformity determination of the 2004 constrained long range plan (CLRP) and FY 2005-FY 2010 transportation improvement program (TIP), a parallel effort is underway to update the effectiveness of previously implemented emissions reduction measures, and analyze potential TERMS which could be adopted as emissions reduction measures if needed.

Previously implemented emissions reduction programs and TERMS

The region has been tracking the status and emissions reduction effectiveness of previously implemented emissions reduction measures and documenting results in the TERM Tracking Sheet. All the agencies that are implementing emissions reduction projects and programs have provided updates for measures which the region has taken credit in the past. For the TERMS that are implemented through the Commuter Connections program evaluations have been completed and the effectiveness of each has been adjusted.

During the 2004 state of the commute survey completed by Commuter Connections the definition of Telecommuting was refined to exclude workers who work part of the day at home or off-site and the remainder at their regular work place, and those who work at client sites and not their regular work site. (see attached memorandum of July 21, 2004 from Nicholas Ramfos to the TPB) This definitional change had the effect of reducing the total percentage of telecommuters by a few percentage points. When the same definition was applied to the 2001 survey the percentage of telecommuters also went down by a few percentage points. However, there was still significant positive growth in telecommuting between 2001 and 2004. (Note that the effectiveness of the telecommuting TERMS was not affected by this definitional change since the impact of these TERMS has always been quantified as the growth in telecommuting in terms of the refined definition between the base year and the analysis year). With the refined definition and the latest emissions factors telecommuting in the region will reduce VOC and NOx emissions by 0.289 tons/day and 0.614 tons/day in 2005.

District of Columbia
Bowie
College Park
Frederick County
Gaithersburg
Greenbelt
Montgomery County
Prince George's County
Rockville
Takoma Park
Alexandria
Arlington County
Fairfax
Fairfax County
Falls Church
Loudoun County
Manassas
Manassas Park
Prince William County

Another change introduced to the tracking sheet was the use of 2000 as base year for all programs. After incorporating all the changes to previously implemented TERMS the region can take credit in 2005 for 3.89 tons/day of VOC reduction and 8.03 tons/day of NOx emissions reduction as shown in attachment B. (By comparison, the 2005 credit taken for the 2003 CLRP and FY 2004-2009 TIP in December of 2003 was 4.0 tons/day of VOC and 8.3 tons/day of Nox.)

Potential TERMS

With the assistance and review of the Travel Management Subcommittee staff has been updating the list of "Potential TERMS". Travel demand changes based on the FY 2003 CLRP and FY 2004-2009 TIP conformity analysis, and Mobile 6 emissions factors were used to update the emissions reduction potential of the TERMS that are on the List of Potential TERMS. This work has been completed and a final review will be undertaken by the subcommittee during its September 21, 2004 meeting. The list of Potential TERMS is included as attachment C.

Attachments

A- July 21, 2004 Memorandum from Nicholas Ramfos to TPB

B- TERM Tracking Sheet

C- List of Potential TERMS

MEMORANDUM

TO: National Capital Region Transportation Planning Board
FROM: Nicholas Ramfos, Chief,
Alternative Commute Programs
DATE: July 21, 2004
SUBJECT: 2004 State of the Commute Survey Results for Telecommuting, and
Adjustment to 2001 Telecommuting Estimate to Reflect 2004
Definition of Telecommuting

Issue

In the 2004 State of the Commute (SOC) survey conducted by Commuter Connections, the definition of telecommuting was changed from the definition used in the 2001 SOC survey. The change was made to reflect a more accurate representation of what Commuter Connections considers telecommuting. The 2004 definition was narrower in scope than the 2001 definition and excluded some commuters who were counted as telecommuters in 2001.

Change in Definition

2004 Definition: *“wage and salary employees who at least occasionally work at home or at a telework or satellite center during an entire work day, instead of traveling to their regular work place.”*

2001 Definition: *“wage and salary employees who at least occasionally work at home or at a location other than their central work place during their normal work hours.”*

Likely Overrepresentations in 2001

The 2001 definition likely included several groups of commuters who would not have been counted in 2004:

- Workers, such as sales or equipment repair staff, who travel to multiple customer locations during the course of the day
- Workers who telecommute at client sites inside or outside of the Washington region
- Workers who worked a portion of the normal workday at home or another location, but traveled to the regular workplace for another part of the day; for example, a respondent who worked at home in the morning while waiting for a delivery or worked at a job site for part of a day.

Summary of Telecommute Adjustments

The table below summarizes the proposed adjustments to the 2001 telecommute estimate. The base (no adjustment) case included 386,650 telecommuters. When all the recoding was completed, the total number of telecommuters in 2001 dropped from 386,650 to 290,319, a reduction of 96,331. With the revised numbers, telecommuters accounted for 11.3% of regional commuters (workers who were not self-employed and full-time home-based).

	Adjustment	Total Telecommuters	% of commuters
2001 Base (no adj)		386,650	15.1%
2001 Adjusted	- 96,331	290,319	11.3%
2004		318,130	12.8%

Additionally, the percentage of Federal telecommuters increased significantly from 2001 to 2004 from 6.9% to 11.8%. These results track closely with recently released data from the Office of Personnel Management. Non-federal telecommuters accounted for 12.6% of telecommuting in 2001 and 13.4% in 2004. The following table summarizes the results for federal, non-federal, and total telecommuters:

	Percent of Commuters That Telecommute		
	Federal	Non-Federal	Total
2001			
(Adjusted)	6.9%	12.6%	11.3%
2004	11.8%	13.4%	12.8%

Demographics and Travel Characteristics of 2004 Telecommuting

The following table provides demographic and travel characteristics for regional telecommuters in 2004 based on the 2004 State of the Commute survey:

Demographic Group	Percentage of Group Who Telecommute
Commute Distance	
Less than 10 miles	10%
10-29 miles	14%
30 or more miles	17%
Annual HH Income	
Less than \$30,000	4%
\$30,000 – \$59,999	6%
\$60,000 – \$99,999	12%
\$100,000 – \$139,999	17%
\$140,000+	21%
State of Residence	
District of Columbia	10%
Maryland	12%
Virginia	13%
State of Employment	
District of Columbia	13%
Maryland	11%
Virginia	13%

Source – 2004 State of the Commute Survey, Metropolitan Washington Council of Governments

TERM TRACKING SHEET - CURRENT MEASURES
IMPLEMENTATION: YEAR 2000 AND LATER
Credits are taken in Air Quality Conformity Analysis FY 2004-09

* Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type, TCM - Transportation Control Measures

* NOS	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	TONS/DAY REDUCTION CREDITED								Project Category *
					FULL	SCALED- BACK	UNDER- WAY	REM			2005		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
9	X	1994-99	MDOT	Park & Ride Lot - MD 210/ MD 373	X				2000	2003	0.001	0.003	0.0005	0.0013	0.0004	0.0006	0.0004	0.0006	C
19		1994-99	PRTC	VRE Woodbridge Parking Expansion (add 500 spaces)	X					2002-2003	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-
20	X	1994-99	ALEX	King St. Metrorail access improvements				X		2002, '04, '05	0.0018	0.0026	0.0009	0.0013	0.0008	0.0009	0.0008	0.0009	C
38	X	1995-00	MDOT	Signal Systems - MD 85 Executive Way to MD 355	X				1996	Pre 2000							0.0000	0.0000	TR
39	X	1995-00	MDOT	Signal Systems - MD 355 ,I-70 ramps to Grove Rd.	X				1996	n/a							0.0000	0.0000	TR
44		1995-00	MDOT	Signal Systems - MD 410, 62nd Ave. to Riverdale Rd.				X	1996	2002							0.0000	0.0000	TR
48	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.001	0.003	0.0009	0.0027	0.0012	0.0019	0.0012	0.0018	C (TCM)
49	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.008	0.024	0.0074	0.0242	0.0055	0.0153	0.0054	0.0145	C (TCM)
51	X	1995-00	VDOT	Alexandria Telecommuting Pilot Program	X					2000 & 2001									C
52	X	1995-00	VDOT	Fairfax County Bus Shelter (Fairfax Co. TDM program)				X	2000	2001									C
54	X	1995-00	VDOT	City of Fairfax Bus Shelters				X	1999	2004	0.0000	0.0009	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	C (TCM)
56	X	1995-00	VDOT	Cherry Hill VRE Access				X		2007	0.0065	0.0206	0.0033	0.0090	0.0024	0.0050	0.0023	0.0047	C (TCM)
57	X	1995-00	DC	Right Turn on Red				X		1999	0.0414	0.0499	0.0202	0.0218	0.0165	0.0113	0.0162	0.0102	TR
58	X	1995-00	WMATA	Bus Replacement (172 buses)	X				1998	1998	0.0690	0.2520	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP (TCM)
59	X	1995-00	MCG	Shady Grove West Park and Ride				X	2010		0.0000	0.0000	0.0000	0.0045	0.0000	0.0031	0.0000	0.0030	C
60	X	1995-00	MCG	White Oak Park and Ride				X	2010		0.0000	0.0000	0.0000	0.0090	0.0000	0.0062	0.0000	0.0059	C
61	X	1995-00	MCG	Bicycle Facilities				X	FY99		0.0028	0.0017	0.0014	0.0009	0.0012	0.0006	0.0012	0.0006	C
62	X	1995-00	MCG	Pedestrian Facilities to Metrorail				X			0.0046	0.0069	0.0019	0.0031	0.0016	0.0022	0.0015	0.0021	C
63	X	1995-00	MDOT	MARC Replacement Coaches	X				1999	2004	0.0037	0.0103	0.0033	0.0099	0.0031	0.0062	0.0031	0.0059	C
64	X	1995-00	MDOT	MARC Expansion Coaches	X				1999	2004	0.0296	0.0894	0.0284	0.0636	0.0287	0.0508	0.0283	0.0482	C (TCM)
66	X	1995-00	VDOT	Commuter Lots - District Wide				X	varies	1995, 2000	0.0102	0.0284	0.0065	0.0193	0.0063	0.0165	0.0062	0.0157	C
67	X	1995-00	VDOT	I-66 and Stringfellow Rd. Park and Ride	X				2000	2000 end	0.0092	0.0172	0.0047	0.0090	0.0039	0.0062	0.0039	0.0059	C
68	X	1995-00	VDOT	Lake Ridge Park and Ride (now called Tacketts Mill lot)	X					1999/2000	0.0000	0.0086	0.0000	0.0045	0.0000	0.0031	0.0000	0.0030	C
69	X	1995-00	VDOT	Bicycle Trails and Facilities				X	varies	varies	0.0018	0.0146	0.0093	0.0076	0.0075	0.0056	0.0074	0.0053	C
70	X	1995-00	VDOT	Improved Access to Metrorail Stations					varies	2000-2010	0.0005	0.0009	0.0005	0.0009	0.0004	0.0006	0.0004	0.0006	C
71	X	1995-00	VDOT	I-66 HOV access at Monument Dr.	X					1997	0.0092	0.0172	0.0047	0.0090	0.0004	0.0062	0.0004	0.0059	C
72		1995-00	DC	Bicycle Facilities		X					0.0222	0.0172	0.0116	0.0094	0.0094	0.0069	0.0093	0.0065	C
73	X	1995-00	REGION	COG Regional Ridesharing Support	X					on-going	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C

TERM TRACKING SHEET - CURRENT MEASURES
IMPLEMENTATION: YEAR 2000 AND LATER
Credits are taken in Air Quality Conformity Analysis FY 2004-09

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					FULL	SCALED- BACK	UNDER- WAY	REM			2005		2015		2025		2030		
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
74	X	1995-00	REGION	M-47 Integrated Ridesharing	X					on-going	0.0431	0.0897	0.0180	0.0295	0.0141	0.0180	0.0139	0.0172	C
75	X	1995-00	REGION	M-92 Telecommuting Support	X					on-going	0.2886	0.6135	0.1794	0.3002	0.1788	0.2327	0.1889	0.2374	C
77		1996-01	VDOT	Duke Street Pedestrian Bridge				2005		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-
79	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #85)				1999		Summer 2001	0.0018	0.0026	0.0009	0.0013	0.0008	0.0009	0.0008	0.0009	C
81	X	1996-01	VDOT	Arlington County Metrocheck Program	X			1997		1997 Onwards	0.0018	0.0026	0.0010	0.0030	0.0010	0.0030	0.0004	0.0009	C
82	X	1996-01	VDOT	Old Dominion Drive Bike Trail				2000		2004	0.0009	0.0009	0.0005	0.0004	0.0004	0.0003	0.0004	0.0003	C
83	X	1996-01	WMATA	Bus Replacement (see line 58, above)	X					1998	Credit taken in line 58, above								SP
85	X	1996-01	VDOT	Fairfax County Bus Shelters (30 shelters with project #79)				1999		2001	0.0009	0.0009	0.0005	0.0013	0.0004	0.0009	0.0004	0.0009	C
90	X	1996-01	REGION	M-47c Employer Outreach / Guaranteed Ride Home	X					on-going	0.5595	1.0434	0.2347	0.3449	0.1807	0.2095	0.1777	0.1989	C
91	X	1996-01	REGION	M-70a Bicycle Parking				1999			0.0065	0.0060	0.0047	0.0045	0.0039	0.0031	0.0039	0.0030	C
92	X			M-92 Telecommuting Support	Combined with item #75														C
95	X	1997-02	MCG	Germantown Transit Center				2004			0.0046	0.0163	0.0023	0.0085	0.0020	0.0056	0.0019	0.0053	C (TCM)
102	X	1997-02	PG	Prince George's County Bus Replacement	X			1998		1998	0.0030	0.0090	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP (TCM)
106	X	1997-02	VDOT	PRTC Employer Commuting Outreach Program	X					1977 on-going	0.0018	0.0004	0.0009	0.0000	0.0008	0.0000	0.0008	0.0000	C
107	X	1997-02	VDOT	PRTC Multimodal Strategic Marketing Implementation Plan	X					1977 on-going	0.0000	0.0004	0.0000	0.0004	0.0000	0.0003	0.0000	0.0003	C
108	X	1997-02	MDOT	M-103 Taxicab Replacement in Maryland				1999		on-going	0.0797	0.2675	0.1453	0.2155	0.1228	0.1498	0.3120	0.4810	SP
109	X	1997-02	REGION	M-70b Employer Outreach for Bicycles	X			1998		on going	0.0011	0.0013	0.0005	0.0004	0.0003	0.0003	0.0003	0.0002	C
110	X	1997-02	VDOT	M-77b Vanpool Incentive Programs in Virginia				1999		delayed	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	C
111	X	1998-03	WMATA	Bus Replacement (108 buses)	X			1999		1999	0.0450	0.1617	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
112	X	1998-03	MCG	Montgomery County Bus Replacement	X						0.0080	0.0270	0.0020	0.0070	0.0000	0.0000	0.0000	0.0000	SP
113	X	1998-03	PG	Prince George's County Bus Replacement	X			1998		1998	0.0010	0.0020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
114	X	1998-03	FDC	Frederick County Bus Replacement	X						0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP
117	X	1998-03	VDOT	Arlington County Four Mile Run Bike Trail				1999		delayed	0.0009	0.0009	0.0005	0.0004	0.0004	0.0003	0.0004	0.0003	C
118	X	1998-03	VDOT	Northern Virginia Turn Bays	X			2000		1998	0.0009	0.0015	0.0009	0.0007	0.0008	0.0004	0.0008	0.0003	TR
119	X	1998-03	VDOT	Fairfax City Bus Replacement				2001		2003	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	SP
121	X	1998-03	WMATA	WMATA Bus Replacement (252 buses)	X			2001		2001	0.1060	0.3860	0.0900	0.3420	0.0000	0.0000	0.0000	0.0000	SP
122	X	97 & 98 TIP	REGION	M-101a Mass Marketing Campaign (Consumer)						ongoing	0.1191	0.2119	0.1015	0.1594	0.0980	0.1069	0.0752	0.0807	C
123	X	1999-04	MDOT	Various Park and Ride Lots(I-270/MD124, 450 & I-170/MD-75, 54 spaces)	X			2001/1999		2001	0.0074	0.0310	0.0047	0.0188	0.0039	0.0143	0.0039	0.0136	C

TERM TRACKING SHEET - CURRENT MEASURES
IMPLEMENTATION: YEAR 2000 AND LATER
Credits are taken in Air Quality Conformity Analysis FY 2004-09

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					FULL	SCALED- BACK	UNDER- WAY	REM			2005		2015		2025		2030			
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX		
124	X	1999-04	MDOT	Signal Systems (197/MD-198, MD-382 TO US-301,US301)	x				2000	2002	0.0110	-0.0030	0.0061	-0.0021	0.0080	-0.0015	0.0079	-0.0014	TR	
125	X	1999-04	VDOT	Transit Center at 7 Corners					2002		0.0009	0.0017	0.0005	0.0009	0.0004	0.0006	0.0004	0.0006	C	
126	X	1999-04	VDOT	Falls Church Clean Diesel Bus Service					2000	2003	0.0040	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SP	
127	X	1999-04	VDOT	VA 234 Bike Trail					2001	2007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C	
128	X	1999-04	VDOT	PRTC Ridesharing	X				on-going	2000 ongoing	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	C	
130	X	1996-01	VDOT	M-14: I-66 Feeder Bus Fare Buy Down	X					1998 onward	0.0231	0.0473	0.0102	0.0206	0.0083	0.0131	0.0081	0.0124	C	
131	X	2000-05	MDOT	Various park and Ride Lots	x				2002	2003	0.0064	0.0280	0.0043	0.0175	0.0038	0.0140	0.0038	0.0119	C	
132	X	2000-05	MDOT	Signal Systems	X				Varies	on-going	0.0028	0.0000	0.0012	0.0000	0.0007	0.0000	0.0007	0.0000	TR	
133	X	2000-05	VDOT	450 Spaces at Gambrell/Hoopes Rds. Park and Ride					2002	2004	0.0065	0.0155	0.0028	0.0069	0.0022	0.0043	0.0021	0.0041	C	
134	X	2000-05	VDOT	300 Spaces at Backlick Rd					2003	2006	0.0046	0.0112	0.0021	0.0049	0.0015	0.0031	0.0015	0.0030	C	
135	X	2000-05	VDOT	Accotink-Gateway Connector Trail					2002	2005	0.0065	0.0086	0.0028	0.0038	0.0019	0.0021	0.0018	0.0020	C	
136	X	2000-05	VDOT	Columbia Pike Trail					2000	2001, 2005	0.0055	0.0069	0.0023	0.0029	0.0015	0.0016	0.0014	0.0015	C	
137	X	2000-05	VDOT	Lee Highway trail					2000	2005	0.0028	0.0034	0.0012	0.0016	0.0006	0.0008	0.0006	0.0008	C	
138	X	2000-05	VDOT	Arlington Bus Shelter Improvements					2005	2005	0.0009	0.0009	0.0005	0.0004	0.0002	0.0002	0.0002	0.0002	C	
139	X	2000-05	VDOT	Pentagon Metrostation Improvements	X					2003	0.0074	0.0146	0.0033	0.0063	0.0022	0.0035	0.0022	0.0033	C	
140	X	2000-05	MDOT	East/West Intersection Improvements					2005	2006 Expect.	0.0379	0.0215	0.0640	0.0327	0.0874	0.0355	0.0859	0.0337	C	
141	X	2001-06	Feds	Federal Transit/Ridesharing subsidy	X				on-going		0.0942	0.1642	0.0386	0.0555	0.0291	0.0330	0.0286	0.0313	C	
142	X	2002-07	WMATA	100 CNG buses	X				2002		0.0000	0.1358	0.0000	0.1358	-	-	-	-	SP (TCM)	
143	X	2002-07	WMATA	ULSD with CRT filters					on-going		0.2100	0.0000	0.4300	0.0000	0.4300	0.0000	0.4300	0.0000	H (TCM)	
144	X	2003-08	DC	Replace 23 Taxicabs with CNG cabs					2005		0.0177	0.0314	-	-	-	-	-	-	H	
145	X	2003-08	DC	D.C.Incident Response & TrafficManagement System					2005		0.0254	0.0746	-	0.0341	-	0.0185	-	0.0168	TR	
146	X	2003-08	DC	Bicycle Lane in D. C. (35 Mile) *					2005	2005	0.0154	0.0153	0.0065	0.0053	0.0047	0.0031	0.0046	0.0029	C (TCM)	
147	X	2003-08	DC	Bicycle Racks in D. C. (500) *					2005	2005	0.0021	0.0017	0.0009	0.0006	0.0006	0.0003	0.0006	0.0003	C (TCM)	
148	X	2003-08	DC	External Bicycle Racks on WMATA Buses in D. C. (600) *	x				2005	2003	0.0031	0.0056	0.0013	0.0019	0.0010	0.0011	0.0010	0.0011	C (TCM)	
149	X	2003-08	DC	CNG Rental Cars (18) *					2005		0.0000	0.0002	-	-	-	-	-	-	SP	
150	X	2003-08	DC	Sidewalks in D.C. (\$ 5 million)					2005		0.0578	0.1008	0.0243	0.0334	0.0185	0.0202	0.0182	0.0192	C	
151	X	2003-08	DC	CNG Refuse Haulers (2) *	x				2005	2004	0.0001	0.0020	0.0001	0.0020	-	-	-	-	H (TCM)	
152	X	2003-08	DC	Circulator /Feeder Bus Routes	x				2005	2003	0.0211	0.0363	0.0089	0.0121	0.0067	0.0073	0.0066	0.0069	C	

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											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
153	X	2003-08	MDOT	Commuter Tax Credit			x		2005	n/a	0.1262	0.2219	0.0530	0.0736	0.0405	0.0445	0.0398	0.0422	C
155		2003-08	MDOT	Employer Vanpool Program (WWB)				x	2005		0.0030	0.0075	0.0012	0.0024	0.0010				C
156	X	2003-08	MDOT	Green Line Link			x		2005	n/a	0.0041	0.0085	0.0017	0.0028	0.0013	0.0017	0.0013	0.0016	C
157	X	2003-08	MDOT	Park & Ride Lots - Southern Maryland *			x		2005	2003/2005	0.0080	0.0197	0.0033	0.0064	0.0027	0.0040	0.0026	0.0038	C
158	X	2003-08	MDOT	Prince George's County- Bus Exp			x		2005	n/a	0.0578	0.1191	0.0242	0.0392	0.0189	0.0239	0.0186	0.0228	C
159	X	2003-08	MDOT	MTA - Bus Service Expansion			x		2005	n/a	0.0131	0.0285	0.0055	0.0093	0.0043	0.0057	0.0042	0.0054	C
160	X	2003-08	MDOT	Ride- On - Super Discount			x		2005	n/a	0.0015	0.0026	0.0006	0.0009	0.0005	0.0005	0.0005	0.0005	C
161	X	2003-08	Regional	Regional Traveler Information Systems					2005		0.1596	0.9730	0.0816	0.4451	0.0697	0.2418	0.0686	0.2195	TR
162	X	2003-08	MDOT	Universal Transportation Access (MD + WMATA)			x		2005	n/a	0.0259	0.0452	0.0109	0.0150	0.0083	0.0091	0.0082	0.0086	C
163	X	2003-08	MCG	Construction of 1300 additional Parking Spaces at Grosvenor Metro Garage	x				2004		0.0074	0.0189	0.0030	0.0062	0.0025	0.0038	0.0025	0.0036	C (TCM)
164	X	2003-08	MCG	Bethesda Shuttle Bus Services	x				2004		0.0050	0.0087	0.0021	0.0029	0.0016	0.0017	0.0016	0.0016	C
165	X	2003-08	MCG	External Bicycle Racks on Ride-On Buses in Montgomery County	x				2004		0.0010	0.0017	0.0004	0.0006	0.0003	0.0004	0.0003	0.0003	C
166	X	2003-08	MCG	New CNG Powered Light Duty Vehicle fleet in the County	x				2004		0.0000	0.0001	-	-	-	-	-	-	SP
167	X	2003-08	MCG	Free Bus Service on Selected Routes on I-270	x				2004		0.0017	0.0030	0.0007	0.0010	0.0006	0.0006	0.0005	0.0006	C
168	X	2003-08	MCG	Annual Sidewalk Program	x				2004		0.0275	0.0480	0.0116	0.0159	0.0088	0.0096	0.0087	0.0091	C
169	X	2003-08	MDOT	Bethesda Breeze/International Express Metrobus	x		x		2005	n/a	0.0060	0.0097	0.0025	0.0032	0.0019	0.0019	0.0019	0.0018	C
170	X	2003-08	MDOT	Bethesda-8, Silver Spring Downtown Dasher and Prince Georges Co. Shuttles at 3 PNR lot			x		2005	n/a	0.0142	0.0189	0.0060	0.0064	0.0044	0.0038	0.0043	0.0036	C
171	X	2003-08	MDOT	Proposed Transportation Management District in Montgomery County (Rockville and Gaithersburg)				X	2005	n/a	0.0093	0.0142	0.0039	0.0047	0.0029	0.0028	0.0029	0.0027	C
172	X	2003-08	MDOT	Sidewalks (Bikes/Pedestrian) at / near Rail Stations	x				2005	2002	0.0150	0.0267	0.0063	0.0088	0.0048	0.0054	0.0047	0.0051	C
173	X	2003-08	MDOT	Neighborhood Sidewalks Improvements (Bike/Pedestrian)	X				2005	2004	0.0052	0.0030	0.0023	0.0011	0.0016	0.0006	0.0015	0.0005	C
174	X	2003-08	MDOT	Neighborhood Conservation Program - Neighborhood Sidewalks Improvements (Bikes/Pedestrian)		X			2005	n/a	0.0046	0.0026	0.0020	0.0010	0.0014	0.0005	0.0013	0.0005	C
175	X	2003-08	MDOT	Maryland bus Transit Service Expansion	X				2005	2004	0.0228	0.0586	0.0094	0.0191	0.0077	0.0118	0.0076	0.0112	C
176	X	2003-08	VDOT	Universal Transportation Access Program					2005	2005	0.0019	0.0034	0.0008	0.0011	0.0006	0.0007	0.0006	0.0006	C
177	X	2003-08	VDOT	Interactive Rideshare & Kiosk Initiative					2005		0.0006	0.0013	0.0003	0.0004	0.0002	0.0003	0.0002	0.0002	C
178	X	2003-08	VDOT	Mobile Commuter Stores					2005		0.0035	0.0071	0.0014	0.0023	0.0011	0.0014	0.0011	0.0014	C
179	X	2003-08	VDOT	Telework Incentive Program (Telework VA)			X		2005	2001	0.0012	0.0022	0.0005	0.0007	0.0004	0.0004	0.0004	0.0004	C
180	X	2003-08	VDOT	Commuter Choice					2005		0.0015	0.0025	0.0007	0.0008	0.0005	0.0005	0.0005	0.0005	C
181	X	2003-08	VDOT	Employer Shuttle Services					2005		0.0184	0.0301	0.0077	0.0100	0.0058	0.0060	0.0057	0.0057	C

TERM TRACKING SHEET - CURRENT MEASURES
IMPLEMENTATION: YEAR 2000 AND LATER
Credits are taken in Air Quality Conformity Analysis FY 2004-09

* Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type, TCM - Transportation Control Measures

* NOS	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL COMPLETION DATE	ACTUAL COMPLETION DATE	TONS/DAY REDUCTION CREDITED								Project Category *	
					FULL	SCALED- BACK	UNDER- WAY	REM			2005		2015		2025		2030			
											VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX		
184	X	2003-08	VDOT	Van Start / Van Save			X		2005	till 2006	0.0022	0.0047	0.0009	0.0015	0.0007	0.0009	0.0007	0.0009	C	
185	X	2003-08	VDOT	Metro Shuttle Bus			X		2005	1999-2005	0.0019	0.0047	0.0008	0.0015	0.0006	0.0009	0.0006	0.0009	C	
187	X	2003-08	VDOT	VRE Mid-Day Train Service	X				2005	2002	0.0025	0.0053	0.0011	0.0017	0.0008	0.0011	0.0008	0.0010	C	
190	X	2003-08	VDOT	Employer Vanpool Program (Bridge deck)			X		2005	2004 - 2008	0.0015	0.0034	-	-	-	-	-	-	C	
191	X	2003-08	VDOT	Town of Leesburg P&R Lot			X		2005	2004	0.0031	0.0071	0.0013	0.0023	0.0010	0.0014	0.0010	0.0014	C	
192	X	2003-08	VDOT	District-wide P&R Lots	X		X		2005	2001-2005	0.0182	0.0406	0.0076	0.0133	0.0060	0.0082	0.0059	0.0078	C	
193	X	2003-08	VDOT	Additional Parking at 4 Metro stations			X		2005	2001, 2005	0.0235	0.0604	0.0097	0.0197	0.0079	0.0122	0.0078	0.0116	C	
196	X	2003-08	WMATA	64 CNG Buses (Purchased in 2001)	X				2005	2004	0.0021	0.0870	0.0021	0.0870	-	-	-	-	SP (TCM)	
197	X	2003-08	WMATA	250 CNG Buses (175 buses by Dec. 2004; 75 buses by mid 2006)			X		2005	2004-2006	0.0083	0.3400	0.0083	0.3400	-	-	-	-	SP	
198	X	2003-08	WMATA	60 Engine Replacement (MY 1992 & 1993 MY buses)	X				2004	2004	0.0138	0.0755	0.0138	0.0755	-	-	-	-	SP	
199	X	2003-08	WMATA	Car Sharing Program	X				2005	2004	0.0013	0.0033	0.0005	0.0011	0.0004	0.0007	0.0004	0.0006	C	
200	X	2003-08	WMATA	Bikes Racks on WMATA Buses in VA (372 Bike Racks)	X				2005	2004	0.0020	0.0035	0.0008	0.0012	0.0006	0.0007	0.0006	0.0007	C (TCM)	
202		2003-08	MDOT	Fleet Replacement (state auto fleet, gas to hybrid, 250 vehicles)				x	2005		0.0055	0.013	0.0055	0.013					SP	
203	X	2003-08	MDOT	Replace 55 Montgomery County 10 yr. old buses w/ new CNG buses			x		2005	n/a		0.2861		0.2861	-	-	-	-	SP	
204		2003-08	MDOT	Neighborhood Bus Shuttle (5 circulator routes)				x	2005		0.0121	0.0221	0.0051	0.007	0.00	0.004	0.0038	0.0042	C	
205	X	2003-08	MDOT	New Surface Parking at Transit Centers (500 spaces)			x		2005	n/a	0.0042	0.0108	0.0017	0.0035	0.0014	0.0022	0.0014	0.0021	C	
206	X	2003-08	MDOT	Additional Bike Lockers at Metro-Stations				x	2005	n/a	0.0213	0.0379	0.0090	0.0125	0.0068	0.0076	0.0067	0.0072	C	
207	X	2003-08	MDOT	Bike Facilities at PnR Lots or other similar location			x		2005	n/a	0.0150	0.0300	0.0063	0.0099	0.0049	0.0060	0.0048	0.0057	C	
208	X	2003-08	MDOT	CNG Fueling Stations				x	2005	n/a	0.1270	0.1170	-	-	-	-	-	-	SP	
209		2003-08	MDOT	Gas cap replacements (ROP Credit)				x	2005		N/A	N/A	-	-	-	-	-	-	SP	
210		2003-08	MDOT	Gas can turnover (ROP Credit)				x	2005		N/A	N/A	-	-	-	-	-	-	SP	
211	X	2003-08	MDOT	External Bicycle Racks on WMATA Buses (486 MD buses)	x				2005	2002	0.0023	0.0040	0.0009	0.0013	0.0007	0.0008	0.0007	0.0008	C (TCM)	
212	X	2003-08	MDOT	Bike \ Pedestrian Trail - Anacostia River Walk			X		2005	n/a	0.0009	0.0008	0.0004	0.0003	0.0003	0.0002	0.0003	0.0002	C	
213		2003-08	MDOT	Transit Prioritization - Queue Jumps				x	2005		0.0050	0.0068	0.0021	0.002	0.002	0.001	0.0015	0.0013	C	
214	X	2003-08	MDOT	Commuter Choice Benefit/Tax Credit - Marketing Expansion			x		2005	n/a	0.0881	0.1559	0.0370	0.0517	0.0283	0.0313	0.0278	0.0297	C	
215	X	2003-08	MDOT	Improvements to Pedestrian Access in TOD areas (4 locations)			x		2005	n/a	0.0096	0.0158	0.0040	0.0053	0.0031	0.0032	0.0030	0.0030	C	
216	X	2003-08	MDOT	Telecommuting Expansion			x		2005	n/a	0.1041	0.2192	0.0435	0.0721	0.0341	0.0441	0.0336	0.0419	C	
217	X	2003-08	MDOT	Replace older Diesel Engine in Public Sector vehicles				x	2005	n/a	0.0237	0.1300	0.0237	0.1300	-	-	-	-	H	

TERM TRACKING SHEET - CURRENT MEASURES
IMPLEMENTATION: YEAR 2000 AND LATER
Credits are taken in Air Quality Conformity Analysis FY 2004-09

* Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type, TCM - Transportation Control Measures

* NOs	CREDIT TAKEN	TIP CREDITED	AGENCY	PROJECT	IMPLEMENTATION STATUS				ORIGINAL	ACTUAL	TONS/DAY REDUCTION CREDITED								Project Category *
					FULL	SCALED- BACK	UNDER- WAY	REM	COMPLETION	COMPLETION	2005		2015		2025		2030		
									DATE	DATE	VOC	NOX	VOC	NOX	VOC	NOX	VOC	NOX	
218	X	2003-08	VDOT	MV-92 Telecommuting Program - Expanded ¹			X		2005	2003	0.1112	0.2341	0.0464	0.0769	0.0365	0.0471	0.0359	0.0447	C
219	X	2003-08	VDOT	MV-123 Employer Outreach for Public Sector Employees ¹			X		2005	2003	0.0247	0.0430	0.0104	0.0143	0.0079	0.0086	0.0078	0.0082	C
220	X	2003-08	REGION	Signal System Optimization			X		2005	2005	0.6737	0.2720	0.3447	0.1244	0.2945	0.0676	0.2896	0.0613	TR
Available Emissions Credits											3.892	8.030	2.319	4.034	1.935	1.682	2.092	1.914	

* Projects numbers refer to the sequence of projects contained in previous Tracking Sheet updates

Potential TERMS
For Consideration During Conformity Assessment of the
2004 CLRP & FY 2005-2010 TIP

Potential TERMS	VT (2005)	VMT (2005)	NOx (2005)	VOC (2005)	Cost Effectiveness		Project Category *
			tons/day	tons/day	Nox (\$/t)	VOC (\$/t)	
M-07A Voluntary Employer Parking Cash-Out Subsidy	13856	214772	0.1807	0.1001	3,547	6,401	C
M-24 Speed Limit Adherence (accelerated)		-	0.9167	-	26,618	-	TR
M-47c Employer Outreach for Private Sector Employers (expanded)	1300	20155	0.0170	0.0094	200,466	361,774	C
M-93 Improve Pedestrian Facilities Near Rail Stations	1270	19683	0.0166	0.0092	114,310	206,292	C
M-103 150 Taxicab Replacement Program - CNG (expanded)			0.2030	0.1307	14,300	22,210	SP
M-103a 150 Taxicab Replacement Program - conventional vehicles		-	0.1750	0.1136	13,300	20,450	SP
M-110 10 Transit Stores in Maryland	1072	33248	0.0268	0.0127	18,505	38,971	C
M-111 Replace Traffic Signals with Lesser Controls		-	-	-	-	-	TR
M-113 6 Kiosks in Maryland	13	233	0.0002	0.0001	3,053,870	5,725,743	C
M-123 Employer Outreach for Public Sector Employers	13416	207947	0.1750	0.0970	18,668	33,689	C
M-132 Vanpool Incentive Program (expanded M-77b)	1755	109161	0.0861	0.0372	85,579	197,879	C
M-133 Metrorail Feeder Bus Service	0	5924	0.0046	0.0018	389,684	1,003,255	C
M-134 Implement Neighborhood Circulator Buses (10)	2950	45725	0.0385	0.0213	332,658	600,337	C
M-135 Construction of 1000 Parking Spaces at Metrorail Stations	0	20336	0.0157	0.0061			C
M-142e 100 CNG Buses in place of Old Diesel Buses [†]	-	-	-	-	-	-	SP
M-142f 100 Hybrid Buses in place of Old Diesel Buses [†]	-	-	-	-	-	-	SP
M-142g 100 New Diesel Buses in place of Old Diesel Buses [†]	-	-	-	-	-	-	SP
M-143 Real Time Bus Schedule Information	1212	18786	0.0158	0.0088	30,862	55,696	C
M-146 Purchase 185 WMATA buses (ridership growth)	18550	287525	0.2420	0.1341	437,145	788,901	C
M-148 WMATA Bus Information Displays with Maps (2000 cases)	2172	33666	0.0283	0.0157	14,142	25,521	C
M-150 Enhanced Commuter Services- (HOV Facilities)	0	48660	0.0375	0.0146	227,484	585,666	C
M-151 Enhanced Commuter Services-US 1 (Reverse Commute)	1916	50360	0.0409	0.0200	197,134	402,635	C
M-152 Enhanced Commuter Services- (Rail Relief)	0	67205	0.0518	0.0201	497,288	1,280,283	C
M-155 Expand Carsharing Program	285	4418	0.0037	0.0021	150,870	272,279	C
M-156 Free bus-to-rail/ rail-to-bus transfers (Similar to NYC pricing structure)	5013	77702	0.0654	0.0362	1,804,646	3,256,790	C
M-158 Free Bus Service Off-Peak (10:00 AM to 2:00 PM Mid-Day and Weekends)	4284	66402	0.0559	0.0310	1,251,644	2,258,800	C
M-159 W15-590 - Diesel Fuel Additive	-	-	0.1330	-	2,700	-	H
M-160 Bose Automobile Anti-Air Pollutant and Energy Conservation System	-	-	0.6100	-	1,000	-	H
M-161 Diesel Emulsion Fuel Additive (Non-road or Highway)**	-	-	0.1800	-	12,000	-	H
M-162 Early Engine Retirement (Pre-88) **	-	-	0.9000	-	2,200	-	H
M-163 Truck Idling (Truck Stops and Auxiliary Power Unit)**	-	-	0.4000	-	4,600	-	H
M-164 International Green Diesel Retrofit	-	-	0.1400	-	141,000	-	H
M-165 Bike Stations at Rail Station	105	1628	0.0014	0.0008	496,372	895,862	C

Potential TERMS	VT (2005)	VMT (2005)	NOx (2005)	VOC (2005)	Cost Effectiveness		Project Category *
			tons/day	tons/day	Nox (\$/t)	VOC (\$/t)	
New TERMS (Revenue generating)							
M-144 Parking Impact Fees	116266	1802123	1.5165	0.8403	1,019,847	1,840,485	C
Other Suggested Measures- Under Development					-	-	
Transit Oriented Development	-	-	-	-	-	-	C
Heavy Duty Truck Pollution	-	-	-	-	-	-	H
Government Actions (ozone action day similar to snow day)	-	-	-	-	-	-	C
M-153 Remove 125 Trash Trucks	-	-	0.4860	-	-	-	H
M-166 Monthly Transit Pass	-	-	-	-	-	-	C
TERMs Suggested by Bicycle and Pedestrian Subcommittee					-	-	
Safe Route to School	-	-	-	-	-	-	C
On-line Bicycle Routing Software	-	-	-	-	-	-	C
Regional Bike Racks	-	-	-	-	-	-	C
Bike Lockers ate Park & Ride Lots	-	-	-	-	-	-	C
Subsidized Off-street Bicycle Parking	-	-	-	-	-	-	C
					-	-	

* Project Category: TR - Traffic Stream, C - Commute, H - Heavy Duty Vehicles (Engine Technology), SP- Specific Vehicle Type

** EPA Certified Technology available † Emission estimation under revision