

National Capital Region Transportation Planning Board

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Memorandum

March 13, 2012

To: MWAQC Technical Advisory Committee

From: Daivamani Sivasailam
Department of Transportation Planning

Subject: Effectiveness of Adopted and Potential TERMS

Staff reviewed the effectiveness of previously adopted TERMS and Potential TERMS in reducing primary PM 2.5 and pre-cursor NOx emissions by comparing them to the mobile source emissions inventories. The percentage impact of TERMS on the mobile source emissions inventory for 2040 is shown in Table 1. It should be noted that no emissions benefits can be credited for TERMS that were fully implemented prior to 2007 since the travel impacts are part of the travel demand model baseline and are therefore included in the emissions inventories.

- The details of previously adopted TERMS are listed in the TERM Tracking Sheet; they number in excess of 200 and the year of programming in the TIP ranges from 1994 to 2008. The latest emissions reductions estimates for the adopted TERMS were included in the air quality conformity determination of the 2011 CLRP (shown as attachment A). The adopted TERMS reduce mobile source emissions by 2% and 1% for PM 2.5 and pre-cursor NOx respectively in analysis year 2040.
- The region has a list of Potential TERMS which were assembled a few years back under the direction of the Travel Management Subcommittee (shown as attachment B). The 26 TERMS in the list would reduce mobile source emissions by 1% and 2% for PM 2.5 and pre-cursor NOx respectively in the analysis year 2040. The cost of implementing these TERMS would be approximately \$ 85 million annually.

Table 1. TERMS Impact Against 2040 Mobile Source Emissions Inventory

Source	PM 2.5 (Tons)	Pre-Cursor NOx (Tons)
Emissions Inventory	768.57	11840.61
TERMs in 2011 CLRP	15.53 (2%)	131.34 (1%)
26 Additional TERMS	9.32 (1%)	220.5 (2%)

Note: Estimates derived using the Mobile 6.2 emissions model
Attachments

Attachment A
TERM TRACKING SHEET
TRANSPORTATION EMISSION REDUCTION MEASURES
Part B - Yearly PM 2.5 and Precursor NOx Emissions

NOx CREDIT TAKEN	TIP	AGENCY	PROJECT	IMPLEMENTATION STATUS			ORIGINAL COMPLETION		ACTUAL COMPLETION				2016				2020		2030		2040		Project Category *
				FULL	SCALED-BACK	UNDERWAY	DATE	DATE	COMPLETION NOx	DATE	COMPLETION NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx		
																						2016	
9	X	MDOT	Park & Ride Lot - MD 210/ MD 373	X			2000	2003	0.0095	0.1374	n/a	n/a	0.0095	0.1000	0.0095	0.0830	0.0095	0.0830	0.0095	0.0689	0.0689	C	
19	X	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	n/a	n/a	n/a	n/a	n/a	C	
20	X	ALEX	King St. Metrorail access improvements	X				2006	0.0095	0.1374	0.0095	0.1000	0.0095	0.1000	0.0095	0.0830	0.0095	0.0830	0.0095	0.0689	0.0689	C	
38	X	MDOT	Signal Systems - MD 85 Executive Way to MD 365	X			1996	Pre 2000	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	TR	
39	X	MDOT	Signal Systems - MD 365, I-70 ramps to Grove Rd.	X			1996	n/a	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	TR	
44	X	MDOT	Signal Systems - MD 410, 52nd Ave. to Riverdale Rd.	X			1996	2002	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	TR	
48	X	MDOT	MARC Replacement Coaches	X			1999	2004	0.0095	0.1374	0.0095	0.1000	0.0095	0.1000	0.0095	0.0830	0.0095	0.0830	0.0095	0.0689	0.0689	C (TCM)	
49	X	MDOT	MARC Expansion Coaches	X			1999	2004	0.0891	1.2820	0.0891	0.9332	0.0891	0.9332	0.0891	0.7745	0.0891	0.7745	0.0891	0.6428	0.6428	C (TCM)	
51	X	VDOT	Alexandria Telecommuting Pilot Program	X				2000 & 2001	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	C	
52	X	VDOT	Fairfax County Bus Shelter (Fairfax Co. TDM program)	X			2000	2001	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	C	
54	X	VDOT	City of Fairfax Bus Shelters	X			1999	2004	0.0032	0.0458	0.0032	0.0333	0.0032	0.0333	0.0032	0.0277	0.0032	0.0277	0.0032	0.0230	0.0230	C (TCM)	
56	X	VDOT	Cherry Hill VRE Access	X				Jul-08	0.0764	1.0988	0.0764	0.7999	0.0764	0.7999	0.0764	0.6639	0.0764	0.6639	0.0764	0.5510	0.5510	C (TCM)	
58	X	WMATA	Bus Replacement (172 buses)	X				1998														SP (TCM)	
59	X	MCG	Shady Grove West Park and Ride	X			2010	2010	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	C	
60	X	MCG	White Oak Park and Ride	X			2010	2010	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	C	
61	X	MCG	Bicycle Facilities	X			FY99	FY99	0.0064	0.0916	0.0064	0.0667	0.0064	0.0667	0.0064	0.0553	0.0064	0.0553	0.0064	0.0459	0.0459	C	
62	X	MCG	Pedestrian Facilities to Metrorail	X					0.0255	0.3663	0.0255	0.2666	0.0255	0.2666	0.0255	0.2213	0.0255	0.2213	0.0255	0.1837	0.1837	C	
63	X	MDOT	MARC Replacement Coaches	X			1999	2004	0.0382	0.5494	0.0382	0.4000	0.0382	0.4000	0.0382	0.3319	0.0382	0.3319	0.0382	0.2755	0.2755	C	
64	X	MDOT	MARC Expansion Coaches	X			1999	2004	0.3309	4.7617	0.3309	3.4663	0.3309	3.4663	0.3309	2.8768	0.3309	2.8768	0.3309	2.3875	2.3875	C (TCM)	
66	X	VDOT	Commuter Lots - District Wide	X			varies	1995, 2001	0.1050	1.5109	0.1050	1.0599	0.1050	1.0599	0.1050	0.9128	0.1050	0.9128	0.1050	0.7576	0.7576	C	
67	X	VDOT	I-66 and Stringfellow Rd. Park and Ride	X			2000	2000 end	0.0636	0.9157	0.0636	0.6666	0.0636	0.6666	0.0636	0.5532	0.0636	0.5532	0.0636	0.4591	0.4591	C	
68	X	VDOT	Lake Ridge Park and Ride (now called Tacketts Mill lot)	X			1999/2000	1999/2000	0.0318	0.4579	0.0318	0.3333	0.0318	0.3333	0.0318	0.2766	0.0318	0.2766	0.0318	0.2296	0.2296	C	
69	X	VDOT	Bicycle Trails and Facilities (Arlington & Fairfax Co - 7 locations)	X			varies	2010-12	0.0541	0.7783	0.0541	0.5666	0.0541	0.5666	0.0541	0.4702	0.0541	0.4702	0.0541	0.3903	0.3903	C	
70	X	VDOT	Improved Access to Metrorail Stations (VRE 2 Stn)	X			varies	2000-2012	0.0032	0.0458	0.0032	0.0333	0.0032	0.0333	0.0032	0.0277	0.0032	0.0277	0.0032	0.0230	0.0230	C	
71	X	VDOT	I-66 HOV access at Monument Dr.	X				1997	0.0636	0.9157	0.0636	0.6666	0.0636	0.6666	0.0636	0.5532	0.0636	0.5532	0.0636	0.4591	0.4591	C	
72	X	DC	Bicycle Facilities	X					0.0636	0.9157	0.0636	0.6666	0.0636	0.6666	0.0636	0.5532	0.0636	0.5532	0.0636	0.4591	0.4591	C	
73	X	REGION	COG Regional Ridesharing Support	X				on-going	1.7913	24.4149	1.7913	17.8484	1.7913	17.8484	1.7913	14.9204	1.7913	14.9204	1.7913	12.3829	12.3829	C	
74	X	REGION	M-47 Integrated Ridesharing	X				on-going	0.6199	8.5312	0.6199	6.2319	0.6199	6.2319	0.6199	5.2028	0.6199	5.2028	0.6199	4.3180	4.3180	C	
75	X	REGION	M-92 Telecommuting Support	X				on-going	1.2883	18.1945	1.2883	13.2638	1.2883	13.2638	1.2883	11.0351	1.2883	11.0351	1.2883	9.1583	9.1583	C	
77	X	VDOT	Duke Street Pedestrian Bridge	X			2005	2007	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	C	
79	X	VDOT	Fairfax County Bus Shelters (30 shelters with project 885)	X			1999	Summer 2001	0.0095	0.1374	0.0095	0.1000	0.0095	0.1000	0.0095	0.0830	0.0095	0.0830	0.0095	0.0689	0.0689	C	
81	X	VDOT	Arlington County Metrocheck Program	X			1997	1997 Onwards	0.0095	0.1374	0.0095	0.1000	0.0095	0.1000	0.0095	0.0830	0.0095	0.0830	0.0095	0.0689	0.0689	C	
82	X	VDOT	Old Dominion Drive Bike Trail	X			2000	2010-11	0.0032	0.0458	0.0032	0.0333	0.0032	0.0333	0.0032	0.0277	0.0032	0.0277	0.0032	0.0230	0.0230	C	
83	X	WMATA	Bus Replacement (see line 58, above)	X				1998	Credit taken in line 58, above													SP	
85	X	VDOT	Fairfax County Bus Shelters (30 shelters with project #79)	X			1999	2001	0.0032	0.0458	0.0032	0.0333	0.0032	0.0333	0.0032	0.0277	0.0032	0.0277	0.0032	0.0230	0.0230	C	
90	X	REGION	M-47c Employer Outreach / Guaranteed Ride Home	X				on-going	3.7262	52.9524	3.7262	38.5840	3.7262	38.5840	3.7262	32.0744	3.7262	32.0744	3.7262	26.8195	26.8195	C	
91	X	REGION	M-70a Bicycle Parking	X			1999	on-going	0.0223	0.3205	0.0223	0.2333	0.0223	0.2333	0.0223	0.1936	0.0223	0.1936	0.0223	0.1607	0.1607	C	
92	X	MCG	M-92 Telecommuting Support ¹																			C	
95	X	MCG	Germentown Transit Center	X			2005	2005	0.0605	0.8699	0.0605	0.6333	0.0605	0.6333	0.0605	0.5256	0.0605	0.5256	0.0605	0.4362	0.4362	C (TCM)	

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TERM TRACKING SHEET
TRANSPORTATION EMISSION REDUCTION MEASURES
Part B - Yearly PM 2.5 and Precursor NOx Emissions**

NOs TAKEN	CREDIT	TIP	AGENCY	PROJECT	IMPLEMENTATION STATUS			ORIGINAL COMPLETION		ACTUAL COMPLETION		2016		2020		2030		2040		Project Category*
					FULL	SCALED-BACK	UNDERWAY	REM	DATE	DATE	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.5	
148	X	2003-08	DC	External Bicycle Racks on WMATA Buses in D. C. (600)	X				2005	2003	0.0206	0.2962	0.0206	0.2171	0.0206	0.1800	0.0206	0.1494	C (TCM)	
149	X	2003-08	DC	CNG Rental Cars (18)			X		2005	2005	0.3688	5.3710	0.3688	3.9106	0.3688	3.2400	0.3688	2.6889	SP	
150	X	2003-08	DC	Sidewalks in D.C. (\$ 5 million)	X				2005	2004	0.1325	1.9373	0.1325	1.4106	0.1325	1.1681	0.1325	0.9694	C	
151	X	2003-08	DC	CNG Refuse Haulers (2)	X				2005	2004	0.8145	11.8243	0.8145	8.6087	0.8145	7.1356	0.8145	5.9220	C	
152	X	2003-08	DC	Circulator /Feeder Bus Routes	X				2005	2003	0.0326	0.4503	0.0326	0.3276	0.0326	0.2735	0.0326	0.2270	C	
153	X	2003-08	MDOT	Commuter Tax Credit	X				2005	n/a	0.0704	0.9256	0.0704	0.6728	0.0704	0.5660	0.0704	0.4697	C	
154	X	2003-08	MDOT	Employer Vapour Program (WVB)			X		2005	2005	0.4574	6.3152	0.4574	4.5942	0.4574	3.8960	0.4574	3.1836	C	
155	X	2003-08	MDOT	Green Line Link					2005	n/a	0.1108	1.5063	0.1108	1.0955	0.1108	0.9168	0.1108	0.7609	C	
156	X	2003-08	MDOT	Park & Ride Lots - Southern Maryland		X			2005	2005	0.0994	0.1366	0.0994	0.0995	0.0994	0.0824	0.0994	0.0684	C	
157	X	2003-08	MDOT	Prince George's County - Bus Exp	X				2005	n/a	3.6007	51.8103	3.6007	37.7158	3.6007	31.3014	3.6007	25.9780	TR	
158	X	2003-08	MDOT	MTA - Bus Service Expansion	X				2005	n/a	0.1654	2.4082	0.1654	1.7534	0.1654	1.4527	0.1654	1.2056	C	
159	X	2003-08	MDOT	Ride-On - Super Discount		X			2004	2004	0.0765	0.9986	0.0765	0.7258	0.0765	0.6113	0.0765	0.5073	C (TCM)	
160	X	2003-08	Regional	Regional Traveler Information Systems		X			2005	n/a	0.0316	0.4617	0.0316	0.3362	0.0316	0.2784	0.0316	0.2310	C	
161	X	2003-08	MDOT	Universal Transportation Access (MD + WMATA)	X				2004	2004	0.0064	0.0930	0.0064	0.0677	0.0064	0.0561	0.0064	0.0466	C	
162	X	2003-08	MCG	Construction of 1300 additional Parking Spaces at Grosvenor Metro Garage			X		2004	2004	0.0110	0.1599	0.0110	0.1164	0.0110	0.0965	0.0110	0.0801	SP	
163	X	2003-08	MCG	Bethesda Shuttle Bus Services					2004	2004	0.1756	2.5576	0.1756	1.8622	0.1756	1.5428	0.1756	1.2804	C	
164	X	2003-08	MCG	External Bicycle Racks on Ride-On Buses in Montgomery County	X				2005	2005	0.0345	0.5169	0.0345	0.3765	0.0345	0.3107	0.0345	0.2579	C	
165	X	2003-08	MCG	New CNG Powered Light Duty Vehicle fleet in the County	X				2005	2005	0.0623	1.0184	0.0623	0.7427	0.0623	0.6058	0.0623	0.5028	C	
166	X	2003-08	MCG	Free Bus Service on Selected Routes on I-270	X				2005	2005	0.0496	0.7591	0.0496	0.5531	0.0496	0.4550	0.0496	0.3776	C	
167	X	2003-08	MCG	Annual Sidewalk Program			X		2005	2002	0.0983	1.4213	0.0983	1.0347	0.0983	0.8581	0.0983	0.7122	C	
168	X	2003-08	MDOT	Bethesda/Breze/International Express Metrobus			X		2005	2004	0.0038	0.1712	0.0038	0.1259	0.0038	0.0944	0.0038	0.0783	C	
169	X	2003-08	MDOT	Proposed Transportation Management District in Montgomery County (Rockville and Gaithersburg)			X		2005	2005	0.0033	0.1498	0.0033	0.1102	0.0033	0.0826	0.0033	0.0685	C	
170	X	2003-08	MDOT	Sidewalks (Bikes/Pedestrian) at / near Rail Stations	X				2005	2005	0.2366	3.0876	0.2366	2.2442	0.2366	1.8900	0.2366	1.5685	C	
171	X	2003-08	MDOT	Neighborhood Sidewalks Improvements (Bikes/Pedestrian)	X				2005	2005	0.0124	0.1806	0.0124	0.1315	0.0124	0.1090	0.0124	0.0904	C	
172	X	2003-08	MDOT	Neighborhood Conservation Program - Neighborhood Sidewalks Improvements (Bikes/Pedestrian)		X			2005	2005	0.0049	0.0662	0.0049	0.0496	0.0049	0.0414	0.0049	0.0344	C	
173	X	2003-08	MDOT	Maryland bus Transit Service Expansion	X				2005	2004	0.0273	0.3772	0.0273	0.2744	0.0273	0.2291	0.0273	0.1901	C	
174	X	2003-08	VDOT	Universal Transportation Access Program	X				2008 onward	2005-07	0.0880	0.1153	0.0880	0.0839	0.0880	0.0696	0.0880	0.0578	C	
175	X	2003-08	VDOT	Interactive Rideshare & Kiosk Initiative			X		2005	2005	0.0091	0.1356	0.0091	0.0988	0.0091	0.0816	0.0091	0.0677	C	
176	X	2003-08	VDOT	Mobile Commuter Stores	X				2005	2005	0.1081	1.6096	0.1081	1.1723	0.1081	0.9682	0.1081	0.8035	C	
177	X	2003-08	VDOT	Telework Incentive Program (Telework VA)					2005	2005	0.0091	0.1356	0.0091	0.0988	0.0091	0.0816	0.0091	0.0677	C	
178	X	2003-08	VDOT	Commuter Choice	X				2005	2005	0.0091	0.1356	0.0091	0.0988	0.0091	0.0816	0.0091	0.0677	C	
179	X	2003-08	VDOT	Employer Shuttle Services			X		2005	2005	0.0091	0.1356	0.0091	0.0988	0.0091	0.0816	0.0091	0.0677	C	
180	X	2003-08	VDOT	Van Start / Van Save	X				2005	2005	0.0188	0.2468	0.0188	0.1794	0.0188	0.1509	0.0188	0.1253	C	
181	X	2003-08	VDOT	Metro Shuttle Bus			X		2005	1999-2005	0.0204	0.2804	0.0204	0.2040	0.0204	0.1704	0.0204	0.1414	C	
182	X	2003-08	VDOT	VRE Mid-Day Train Service	X				2005	2002	0.0280	0.3755	0.0280	0.2730	0.0280	0.2289	0.0280	0.1900	C	
183	X	2003-08	VDOT	Employer Vapour Program (Bridge Deck)	X				2005	2004 - 2008	0.1589	2.1456	0.1589	1.5604	0.1589	1.3072	0.1589	1.0848	C	
184	X	2003-08	VDOT	Town of Leesburg P&R Lot	X				2005	2010	0.0280	0.3755	0.0280	0.2730	0.0280	0.2289	0.0280	0.1900	C	
185	X	2003-08	VDOT	District-wide P&R Lots	X				2005	2001-2005	0.1589	2.1456	0.1589	1.5604	0.1589	1.3072	0.1589	1.0848	C	

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

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NOs TAKEN	CREDIT	TIP	AGENCY	PROJECT	IMPLEMENTATION STATUS			ORIGINAL COMPLETION		ACTUAL COMPLETION				2030		2040		Project Category		
					FULL	SCALED-BACK	UNDERWAY	REM	DATE	DATE	2016		2020		2030		2040			
											PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.5		Precursor NOx	
193	X	2003-08	VDOT	Additional Parking at 4 Metro stations	X				2005	2005	0.2440	3.1849	0.2440	2.3149	0.2440	1.9495	0.2440	1.6180	C	
196	X	2003-08	WIMATA	64 CNG Buses (Purchased in 2001)	X				2005	2004									SP (TCM)	
197	X	2003-08	WIMATA	250 CNG Buses (175 buses by Dec. 2004, 75 buses by mid 2006)	X				2005	Jun-06									SP	
198	X	2003-08	WIMATA	60 Engine Replacement (MY 1992 & 1993 MY buses)	X				2004	2004									SP	
199	X	2003-08	WIMATA	Car Sharing Program	X				2005	2004	0.0133	0.1732	0.0133	0.1259	0.0133	0.1060	0.0133	0.0880	C	
200	X	2003-08	WIMATA	Bikes Racks on WIMATA Buses in VA (372 Bike Racks)	X				2005	2004	0.0128	0.1854	0.0128	0.1350	0.0128	0.1119	0.0128	0.0929	C (TCM)	
202		2003-08	MDOT	Fleet Replacement (state auto fleet, gas to hybrid, 250 vehicles)			X		2005	2005	0.0492	0.7082	0.0492	0.5155					SP	
203	X	2003-08	MDOT	Replace 55 Montgomery County 10 yr. old buses w/ new CNG buses			X		2005	Ongoing	0.6024	8.6685	0.6024	6.3103					SP	
204		2003-08	MDOT	Neighborhood Bus Shuttle (5 circulator routes)			X		2005	2005	0.0824	1.1787	0.0824	0.8580	0.0824	0.7126	0.0824	0.5914	C	
205	X	2003-08	MDOT	New Surface Parking at Transit Centers (500 spaces)			X		2005	2005	0.0436	0.5700	0.0436	0.4143	0.0436	0.3488	0.0436	0.2895	C	
206		2003-08	MDOT	Additional Bike Lockers at Metro-Stations			X		2005	2005	0.1395	2.0172	0.1395	1.4885	0.1395	1.2179	0.1395	1.0107	C	
207	X	2003-08	MDOT	Bike Facilities at P+R Lots or other similar location			X		2005	2005	0.1144	1.5933	0.1144	1.1592	0.1144	0.9667	0.1144	0.8023	C	
208		2003-08	MDOT	CNG Fueling Stations			X		2005	2005									SP	
209		2003-08	MDOT	Gas cap replacements (ROP Credit)			X		2005	2005									SP	
210		2003-08	MDOT	Gas can turnover (ROP Credit)			X		2005	2005									SP	
211	X	2003-08	MDOT	External Bicycle Racks on WIMATA Buses (486 MD buses)	X				2005	2002	0.0148	0.2137	0.0148	0.1556	0.0148	0.1290	0.0148	0.1071	C (TCM)	
212	X	2003-08	MDOT	Bike / Pedestrian Trail - Anacostia River Walk			X		2005	Ongoing	0.0022	0.0463	0.0022	0.0339	0.0022	0.0268	0.0022	0.0223	C	
213		2003-08	MDOT	Transit Prioritization - Queue Jumps			X		2005	2005	0.0225	0.3639	0.0225	0.2654	0.0225	0.2168	0.0225	0.1799	C	
214	X	2003-08	MDOT	Commuter Choice Benefit/Tax Credit - Marketing Expansion	X				2005	Ongoing	0.5732	8.3042	0.5732	6.0457	0.5732	5.0126	0.5732	4.1601	C	
215	X	2003-08	MDOT	Improvements to Pedestrian Access in TOD areas (4 locations)			X		2005	Ongoing	0.0567	0.8434	0.0567	0.6142	0.0567	0.5074	0.0567	0.4211	C	
216	X	2003-08	MDOT	Telecommuting Expansion ¹	X				2005	Ongoing	0.9466	11.6148	0.9466	8.4488	0.9466	7.0611	0.9466	5.8602	C	
217		2003-08	MDOT	Replace older Diesel Engine in Public Sector vehicles			X		2005	2005									H	
218	X	2003-08	VDOT	IMV-92 Telecommuting Program - Expanded ¹	X				2005	2005	0.9041	12.4039	0.9041	9.0228	0.9041	7.5408	0.9041	6.2584	C	
219	X	2003-08	VDOT	IMV-123 Employer Outreach for Public Sector Employees ²	X				2005	2003	0.1574	2.2923	0.1574	1.6690	0.1574	1.3828	0.1574	1.1476	C	
220	X	2003-08	REGION	Signal System Optimization	X				2005	2005	1.0065	14.4817	1.0065	10.5421	1.0065	8.7492	1.0065	7.2612	TR	
221	X	2007-12	MDOT	Two P & R Lots in Frederick County (69 spaces)	X				2007	2008	0.0121	0.1636	0.0086	0.0831	0.0086	0.0709	0.0086	0.0589	C	
222	X	2007-12	MDOT	MDOT P & R Lots at US 340 (66-99 spaces, Frederick Co.)	X				2007	2007										
223	X	2008-13	MDOT	MCG/MDOT P & R Lots at US 340 & Mt Zion Rd. (37 spaces)	X				2008	2008	0.0093	0.1256	0.0093	0.0913	0.0093	0.0765	0.0093	0.0635		
224	X	2008-13	MDOT	MCG/MDOT P & R Lots at US 340 & Mt Zion Rd. - expansion (39 spaces)			X		2011	2011										
225	X	2008-13	MDOT	MCG/MDOT P & R Lots at I 70 & MD 355 (100 spaces)			X		2010	2010	0.0123	0.1653	0.0123	0.1202	0.0123	0.1007	0.0123	0.0836		
226	X	2008-13	MDOT	MCG/MDOT P & R Lots at I 270 & MD 80 (164 spaces)	X				2009	2009	0.0201	0.2710	0.0201	0.1971	0.0201	0.1652	0.0201	0.1371		
227	X	2008-13	MDOT	MDOT Signal System Reviewing			X		2010	on-going										
228	X	2008-13	MDOT	MDOT Takoma Langley Transit Center			X		2012	2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
										Available Emissions Credits		17.655	283.411	15.744	187.199	15.141	150.310	15.141	124.747	

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

Attachment A
TRANSPORTATION EMISSION REDUCTION MEASURES (CLRP Projects Only)
Part B - Yearly PM 2.5 and Precursor NOx Emissions

NOS	CREDIT TAKEN	TIP CREDITED	AGENCY REGION	PROJECT	IMPLEMENTATION STATUS			TONS/ANNUUM REDUCTION CREDITED						ACTUAL COMPLETION DATE	PROJECTED COMPLETION DATE	Project Category		
					SCALED- UNDER-			2016		2020		2030					2040	
					FULL	BACK	WAY	PM2.5	Precursor NOx	PM2.5	Precursor NOx	PM2.5	Precursor NOx				PM2.6	Precursor NOx
221	X	1995-00 TIP	MGC	M-24 Speed Limit Adherence				1.8471	26.5777	2.1072	22.0719	0.7941	6.9030	0.7941	5.7290	TR		
222	X	1996-01 TIP	MGC	Rock Spring Park Pedestrian Amenities			X	0.0270	0.3866	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-		
223	X	1996-01 TIP	MGC	Oiney Transit Center Park and Ride				0.0540	0.7772	0.0531	0.5559	0.0147	0.1279	0.0147	0.1062	C		
224	X	1996-01 TIP	MGC	Damascus Park and Ride				0.0270	0.3866	0.0265	0.2760	0.0074	0.0640	0.0074	0.0631	C		
225	X	1996-01 TIP	DC	M-103 Taxicab Replacement (DC)			X	0.0000	0.0000	5.2412	54.8994	12.6415	109.8936	12.6415	91.2039	H		
226	X	STADIUM ANALYSIS		M-103 Taxicab Replacement (MD)			X	0.0675	0.9715	0.0663	0.6949	0.0184	0.1569	0.0184	0.1327	C		
227	X	1997-02 TIP	MDCOT	Shady Grove West Transit Center Park and Ride			X	0.0000	0.0000	0.0218	0.2280	0.0147	0.1279	0.0147	0.1062	C		
228	X	1997-02 TIP	MGC	Oiney Transit Center Park and Ride				0.1350	1.9431	0.1327	1.3898	0.0368	0.3199	0.0368	0.2655	C		
229	X	1997-02 TIP	MGC	White Oak Park and Ride				0.0000	0.0000	0.0082	0.0855	0.0055	0.0480	0.0055	0.0398	C		
230	X	1997-02 TIP	MGC	Damascus Park and Ride				0.0068	0.0972	0.0066	0.0695	0.0018	0.0160	0.0018	0.0133	C		
231	X	1997-02 TIP	MGC	Four Corners Transit Center				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-		
232	X	1997-02 TIP	MGC	Burtonsville Transit Center			X	0.0068	0.0972	0.0054	0.0570	0.0037	0.0320	0.0037	0.0265	C		
233	X	1997-02 TIP	MGC	Silver Spring Transit Access				0.1283	1.8459	0.1261	1.3204	0.0350	0.3039	0.0350	0.2522	C		
234	X	1997-02 TIP	MGC	Shady Grove Parking Construction				0.3579	31.7268	0.3604	26.0651	0.1196	7.9425	0.1196	6.5917	C		
PLAN TOTAL								18.013	315.138	16.124	213.255	15.261	158.252	15.261	131.338			

DEFINITIONS: Project Numbers implemented fully prior to 2000 were removed from the TERM Tracking Sheet

CREDIT TAKEN (X means emissions reduction credits taken);
 TIP - Emissions credits are taken for projects being implemented, according to the progress reporting schedules provided by the implementing agencies (contained in Appendix J of Conformity Document). No credit has been taken for projects in which only some components of the measure have been implemented.
 CLRP - Credit is taken for each of these elements of the CLRP according to the schedule provided by the implementing agency.

IMPLEMENTATION STATUS:
 FULL = project is completed as planned at the time of analysis.
 SCALED BACK = project is completed, but at a different level than assumed at the time of analysis (i.e., purchased 50 buses instead of 100)
 UNDERWAY = project is not complete, but is close enough that credit may be taken (i.e., under construction, NOT just out for bid)
 REMOVED = project no longer expected to be implemented or constructed

COMPLETION DATE:
 PROJECTED = project completion date originally expected (i.e., at time of emissions analysis)
 ACTUAL = actual year project was open for use, or expected to be open for use if under construction

REMOVED projects
 1 Emissions credits are not counted in total available emissions credits
 2 Line items 218, 216, 179, 92 are all credited as part of M-92 Regional Telecommute Support TERM, line item # 75
 Line item 108 & 219 credits are taken only for year 2010

Emissions Reduction From Potential TERMS

Potential TERMS	Pre-NOx (2040)	PM2.5 (2040)	Annual Cost Estimate
	tons/day	tons/day	
M-07A Voluntary Employer Parking Cash-Out Subsidy	13.8814	0.8541	\$ 160,314
M-24 Speed Limit Adherence (accelerated)	73.2133	0.0000	\$ 6,100,180
M-47c Employer Outreach for Private Sector Employers (expanded)	1.1022	0.0678	\$ 853,106
M-93 Improve Pedestrian Facilities Near Rail Stations	1.1897	0.0732	\$ 1,413,803
M-103 150 Taxicab Replacement Program - CNG (expanded)	16.2128	1.0441	\$ 725,718
M-103a 150 Taxicab Replacement Program - conventional vehicles	13.9766	0.9001	\$ 581,328
M-110 10 Transit Stores in Maryland	3.4149	0.2149	\$ 123,923
M-113 6 Kiosks in Maryland	0.0158	0.0010	\$ 158,420
M-123 Employer Outreach for Public Sector Employers	9.0976	0.5597	\$ 816,348
M-132 Vanpool Incentive Program (expanded M-77b)	5.7676	0.3672	\$ 1,842,401
M-133 Metrorail Feeder Bus Service	0.3107	0.0200	\$ 340,630
M-134 Implement Neighborhood Circulator Buses (10)	2.4994	0.1538	\$ 1,124,693
M-135 Construction of 1000 Parking Spaces at Metrorail Stations	1.0617	0.0684	\$ 1,335,908
M-142E 100 CNG Buses in place of Old Diesel Buses	13.7370	0.8847	\$ 3,340,024
M-142F 100 Hybrid Buses in place of Old Diesel Buses	16.7320	1.0775	\$ 2,804,397
M-142G 100 New Diesel Buses in place of Old Diesel Buses	13.5453	0.8723	\$ 1,707,455
M-143 Real Time Bus Schedule Information	1.0264	0.0631	\$ 122,160
M-146 Purchase 185 WMATA buses (ridership growth)	15.7209	0.9672	\$ 3,658,270
M-148 WMATA Bus Information Displays with Maps (2000 cases)	1.8412	0.1133	\$ 100,024
M-150 Enhanced Commuter Services- (HOV Facilities)	2.6556	0.1710	\$ 2,130,462
M-151 Enhanced Commuter Services-US 1 (Reverse Commute)	1.5960	0.0982	\$ 2,014,959
M-152 Enhanced Commuter Services- (Rail Relief)	3.7527	0.2417	\$ 6,435,664
M-155 Expand Carsharing Program	0.2416	0.0149	\$ 141,698
M-156 Free bus-to-rail/ rail-to-bus transfers (Similar to NYC pricing structure)	4.2489	0.2614	\$ 29,530,275
M-158 Free Bus Service Off-Peak (10:00 AM to 2:00 PM Mid-Day and Weekends)	3.5691	0.2196	\$ 17,454,383
M-165 Bike Stations at Rail Station	0.0875	0.0054	\$ 181,571
	220.4978	9.3146	\$ 85,198,115