Memorandum

September 23, 2008

To: Travel Management Subcommittee

From: Daivamani Sivasailam
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Subject: CO_2 /Greenhouse Gas Emissions Reduction Measures

In order to proceed with further analysis of CO_2 reduction strategies, i.e., going beyond the
TERM Tracking Sheet data analyzed and shown below, staff have assembled the following
two lists of candidate measures and they include (1) Potential TERMs Under Consideration
For Emissions Reduction, (2) Recommended Transportation and Land Use measures from
the COG Board's Climate Change Report. Using the two staff has prepared a table of
common measures shown as Table 3.

Number	Category Description	Cost Effectiveness Range
1	Access Improvements to Transit/ HOV	$100 to $400
2	Bicycle / Pedesrian projects	$50 to $100
3	Transit Service improvements	$100 to $800
4	Rideshare Assistance Programs	$30 to $300
5	Park & Ride Lots (Transit and HOV)	$100 to $500
6	Telecommute Programs	$10 to $40
7	Traffic Improvements/TSM	$ 30 to $ 50
8	Engine Technology/Alternative Fuel Programs	$ 525 to $ 725

Table 1 - Measures from TERMs Report
POTENTIAL TERMS UNDER CONSIDERATION FOR EMISSIONS REDUCTION

Potential TERMs	Project Category
	Category *
M-07A Voluntary Employer Parking Cash-Out Subsidy	C
M-24 Speed Limit Adherence (accelerated)	TR
M-47c Employer Outreach for Private Sector Employers (expanded)	C
M-93 Improve Pedestrian Facilities Near Rail Stations	C
M-103 150 Taxicab Replacement Program - CNG (expanded)	SP
M-103a 150 Taxicab Replacement Program - conventional vehicles	SP
M-110 10 Transit Stores in Maryland	C
M-111 Replace Traffic Signals with Lesser Controls	TR
M-113 6 Kiosks in Maryland	C
M-123 Employer Outreach for Public Sector Employers	C
M-132 Vanpool Incentive Program (expanded M-77b)	C
M-133 Metrorail Feeder Bus Service	C
M-134 Implement Neighborhood Circulator Buses (10)	C
M-135 Construction of 1000 Parking Spaces at Metrorail Stations	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	C
M-146 Purchase 185 WMATA buses (ridership growth)	C
M-148 WMATA Bus Information Displays with Maps (2000 cases)	C
M-150 Enhanced Commuter Services- (HOV Facilities)	C
M-151 Enhanced Commuter Services-US 1 (Reverse Commute)	C
M-152 Enhanced Commuter Services- (Rail Relief)	C
M-155 Expand Carsharing Program	C
M-156 Free bus-to-rail/ rail-to-bus transfers (Similar to NYC pricing structure)	C
M-158 Free Bus Service Off-Peak (10:00 AM to 2:00 PM Mid-Day and Weekends)	C
M-159 W15-590 - Diesel Fuel Additive [#]	H
M-160 Bose Automobile Anti-Air Pollutant and Energy Conservation System [#]	H
M-161 Diesel Emulsion Fuel Additive (Non-road or Highway) **	H
M-162 Early Engine Retirement (Pre-88) **	H
M-163 Truck Idling (Truck Stops and Auxiliary Power Unit) **	H
M-164 International Green Diesel Retrofit [#]	H
M-165 Bike Stations at Rail Station	C
M-144 Parking Impact Fees [1]	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   [#] No EPA certification Available [1] *This is a revenue*

Table 2 - Measures From COG Board's Climate Change Report   ITEM # 7

Table 8. Recommendations: Summary and Preliminary Assessment

Recommendations	Emission Impact	Implementation Timing	Cost	Economic Co-Benefits	Potential Partners
III. Transportation and Land Use					
1. Promote adoption of clean vehicles, including CAL LEV II	High	Immediate-Midrange	Medium-High	High	COG Members, State Legislature, Fleet Managers, Auto Manufacturers
2. Provide incentives for early vehicle retirement	Low-Medium	Immediate-Midrange	Medium-High	Low-Medium	COG Members, Local and State Govt, Auto Dealers
3. Green fleet policy	Medium-High	Immediate-Midrange	Medium-High	Medium-High	COG Members,
4. Traffic engineering and roadway improvements	Low-Medium	Midrange-Long Term	Varies	High	COG Members, DOTs, TPB
5. Anti-idling initiatives: rules and enforcement	Low-Medium	Immediate	Low-Medium	Low-Medium	COG Members, Local Govt, Police
6. VMT Reduction: goals	Medium-High	Midrange-Long Term	Medium-High	Low-Medium	COG Members, TPB, DOTs, Local Govt, Transit Authorities
7. VMT Reduction: shift short trips	Low-Medium	Immediate-Midrange	Low	Medium-High	COG Members, Local Govt, Transit Authorities, Commuter Connections
8. VMT Reduction: financial incentives	Low-Medium	Immediate-Midrange	Medium-High	Low	COG Members, State and Local Govt
9. VMT Reduction: car sharing	Low-Medium	Immediate-Midrange	Medium-High	Low-Medium	COG Members, Local Govt, Zipcar, Flexcar
10. VMT Reduction: parking policies	Low-Medium	Immediate-Midrange	Medium-High	Low-Medium	COG Members, State and Local Govt
11. VMT Reduction: financial and other incentives	Low-Medium	Immediate-Midrange	Medium-High	Medium-High	COG Members, State and Local Govt, Private Sector
12. Develop conformity process for GHGs	Medium-High	Midrange-Long Term	Medium-High	Low	COG Members, TPB, DOTs
13. Stated goal of GHG reduction in transportation planning	Medium-High	Midrange-Long Term	Medium-High	Low	COG Members, TPB, MDPC, DOTs, WMATA
14. Direct development to activity centers	Low-Medium	Midrange-Long Term	Varies	High	COG Members, Planning Directors, MDPC, TPB, Board of Trade, DOTs, WMATA
15. Expand transit infrastructure and use	Medium-High	Midrange-Long Term	Medium-High	Medium-High	COG Members, Transit Authorities, TPB, DOT
16. Alternative Modes: exclusive transit routes	Low-Medium	Midrange-Long Term	Medium-High	Medium-High	COG Members, TPB, DOTs, State and Federal Govt, Transit Authorities
17. Alternative Modes: promote increase transit use	Low-Medium	Immediate-Midrange	Low-Medium	Medium-High	COG Members, Commuter Connections, TPB, DOTs, Local Govt, Transit Authorities
18. Targets for shifting modes	Low-Medium	Midrange-Long Term	Medium-High	Medium-High	COG Members, Private Sector
19. Alternative Modes: enhance access	Low-Medium	Immediate-Midrange	Medium-High	Medium-High	COG Members, TPB, DOTs, Local Govt, Transit Authorities
20. Travel management plan for new developments	Medium	Midrange-Long Term	Low-Medium	Low-Medium	COG Members, Private Sector, Planning Directors, MDPC
21. Equalize transit and parking benefits	Low	Immediate-Midrange	Low	Low	COG Members, State and Local Govt
22. Bicycle/pedestrian programs	Low-Medium	Immediate-Midrange	Medium-High	Medium-High	COG Members, TPB, DOTs, Local Govt, WMATA
23. Land Use Planning: Tree canopy preservation	Low-Medium	Midrange-Long Term	Low-Medium	High	COG Members, State and Local Forestry Agencies, U.S. Forest Service, Casey Trees, Center for Chesapeake Communities
24. Land Use Planning: Promote location & design of new development around regional activity centers	Medium-High	Immediate-Midrange	Low-Medium	High	COG Members, Local Planning Agencies, Local Developers, Greater Washington 2050
25. Land Use Planning: Promote walkable communities and affordable housing near transit	Medium-High	Midrange-Long Term	Medium	High	COG Members, MDPC, Planning Directors, Local Planning Agencies, Local Developers, WMATA
26. Evaluate LEED-ND Standards	Medium-High	Immediate-Midrange	Medium	Varies	COG Members, Planning Directors, MDPC, TPB, Board of Trade, DOTs, WMATA
27. Comprehensive Planning: best practices	Low-Medium	Immediate-Midrange	Low-Medium	Medium-High	COG Members, MDPC, Planning Directors, Local Planning Agencies, Local Developers
28. Comprehensive Planning: environmental review	Low-Medium	Immediate-Midrange	Low-Medium	Low-Medium	COG Members, MDPC, Planning Directors, Local Planning Agencies, Local Developers

Table 3 - Listing of Candidate Strategies for Reducing CO2 / GHG Emissions (Improving Travel Efficiency)

Recommended Strategies from Climate Change Report	Tracking Sheet TERMs	Potential TERMs
Support expand transit infrastructure and use.		
With WMATA, MARC, VRE, and the local transit operators, evaluate the greenhouse gas reduction benefits of specific incremental expansion of transit capacity and commuter rail service.	**155**, **156**	**M150, M151, M152, M156, M157**
Evaluate the greenhouse gas reduction benefits of expanding existing and establishing new exclusive bus transit routes, lanes, on-ramps, corridors, and intercity high-speed rail.	56, 140, **152, 158, 159, 167, 169, 170, 175, 181, 184, 185, 187, 213**	**M134, M133**
Examine options to promote the increased use of existing transit capacity.	52, 54, 79, 85, 95, 125, 139, **161, 164,**	**M110, M113, M135**
Evaluate funding requirements for transit incentives and an expanded metrocheck program.	141, 1**60, 190, 214, 219**	**M47C, M07A, M123**
Building on the accomplishments of the Commuter Connections Program, develop specific targets for shifting modes from single-occupancy vehicles to transit, walking, and bicycling for commuting and noncommuting trips.	73	
Promote transit-supportive street designs.	**176, 177, 178**	
Expand existing and fund new programs to enhance access to transit and alternative modes, commuter connections, guaranteed ride home, telework programs, bike/pedestrian access, and park/ride lots.	**M-77B,** 9,51,59,60,66,67,68,73,74,75,81,90,91,92,106,107,110,122,123,128,131,133,134,1**57,179,191,192,193,199,205,216,218,221**	**M132, M135**
Encourage new commercial construction to include a "travel management plan."	171	
Promote the equalization of transit and parking benefits. Advocate for federal income tax benefits for transit use that equal or exceed the benefits for employer provided/subsidized parking.	**153**	**M07, M47C**
Bicycle/Pedestrian	19, 20, 61, 62,69, 70, 72,77,82,117,127,135,136,137,109,**146,147,148,150,162,163,168,172,173,174,**206,**207,211,212,**	
Fully fund the construction of bicycle/pedestrian paths in the region, as outlined in the regional bicycle/pedestrian plan.	91	**M93, M165**
Provide incentives to developments that speed improvements in bicycle/pedestrian access, including improvements in		
Promote regional implementation of SmartBike program similar to the "zip car" concept.	109-M-70b	