

7.0 REASONABLY AVAILABLE CONTROL MEASURE (RACM) ANALYSIS

7.1 RACM Analysis

Section 172(c)(1) of the Clean Air Act requires state implementation plans (SIPs) to include an analysis of reasonably available control measures (RACM). This analysis is designed to ensure that the Washington region is implementing all RACM in order to demonstrate attainment with the 1-hour ozone standard on the earliest date possible. This chapter presents a summary of analyses conducted to determine whether the SIP includes all such measures. Full details of the analysis are included in Appendix I. The Metropolitan Washington Council of Governments (MWCOG) conducted this RACM evaluation in coordination with the District of Columbia Department of Environment (DC-DOE), Maryland Department of the Environment (MDE) and the Virginia Department of Environmental Quality (VA DEQ).

7.1.1 Analysis Overview and Criteria

The RACM requirement is rooted in Section 172(c)(1) of the Clean Air Act, which directs states to “provide for implementation of all reasonably available control measures as expeditiously as practicable”. In its 1992 General Preamble for implementation of the 1990 Clean Air Act Amendments (57 FR 13498) EPA explains that it interprets Section 172(c)(1) as a requirement that states incorporate in a SIP all RACM that would advance a region’s attainment date. However, regions are obligated to adopt only those measures that are reasonably available for implementation in light of local circumstances. In the Preamble, EPA laid out guidelines to help states determine which measures should be considered reasonably available:

If it can be shown that one or more measures are unreasonable because emissions from the sources affected are insignificant (i.e. de minimis), those measures may be excluded from further consideration...the resulting available control measures should then be evaluated for reasonableness, considering their technological feasibility and the cost of control in the area to which the SIP applies...In the case of public sector sources and control measures, this evaluation should consider the impact of the reasonableness of the measures on the municipal or other government entity that must bear the responsibility for their implementation.

In its opinion on *Sierra Club v. EPA*, decided July 2, 2002, the U.S. Court of Appeals for the DC Circuit upheld EPA’s definition of RACM, including the consideration of economic and technological feasibility, ability to cause substantial widespread and long-term adverse impacts, collective ability of the measures to advance a region’s attainment date, and whether an intensive or costly effort will be required to implement the measures. Consistent with EPA guidance and the U.S. District Court’s opinion, the region

has developed specific criteria for evaluation of potential RACM measures. Individual measures must meet the following criteria:

- Will reduce emissions by the beginning of the Washington region's 2008 ozone season (May 1, 2008) ¹
- Enforceable
- Technically feasible
- Economically feasible (proposed as a cost of \$3,500-\$5,000 per ton or less)
- Would not create substantial or widespread adverse impacts within the region
- Emissions from the source being controlled exceed a *de minimis* threshold, proposed as 0.1 tons per day

An explanation of these criteria is given in succeeding sections.

7.1.2 Implementation Date

EPA has traditionally instructed regions to evaluate RACM measures on their ability to advance the region's attainment date. This means that implementation of a measure or a group of measures must enable the region to reduce ozone levels to the 84 ppb required to attain the 8-hour ozone standard at least one year earlier than expected. As the Washington region currently expects to reduce ozone levels to 84 ppb during the 2009 ozone season, any RACM must enable the region to meet the 84 ppb standard by May 1, 2008, the beginning of the 2008 ozone season.

7.1.3 Enforceability

When a control measure is added to a SIP, the measure becomes legally binding, as are any specific performance targets associated with the measure. If the state or local government does not have the authority necessary to implement or enforce a measure, the measure is not creditable in the SIP and therefore cannot be declared a RACM. A measure is considered enforceable when all state or local government agencies responsible for funding, implementation and enforcement of the measure have committed in writing to its implementation and enforcement.

In addition to theoretical enforceability, a measure must also be practically enforceable. If a measure cannot practically be enforced because the sources are unidentifiable or cannot be located, or because it is otherwise impossible to ensure that the sources will implement the control measure, the measure cannot be declared a RACM. One exception is voluntary measures, such as those implemented under EPA's Voluntary Measures Guidance.

7.1.4 Technological Feasibility

All technology-based control measures must include technologies that have been verified by EPA. The region cannot take SIP credit for technologies that do not produce EPA-verified reductions.

7.1.5 Economic Feasibility and Cost Effectiveness

EPA guidance states that regions should consider both economic feasibility and cost of control when evaluating potential RACM. Therefore, the Washington region has specified a cost-effectiveness threshold for all possible RACM. Measures for which the cost of compliance exceeds this threshold will not be considered RACM.

In setting this threshold, the region took into consideration two major factors. First, EPA has issued guidance regarding the relationship between RACT and RACM. In its RACM analysis for the Dallas/Forth Worth nonattainment area, EPA states:

“RACT is defined by EPA as the lowest emission rate achievable considering economic and technical feasibility. RACT level control is generally considered RACM for major sources.”

In the Washington region, installation of Reasonably Available Control Technology (RACT) costs are as low as approximately \$3,500 per ton of emissions reduced. Therefore, it seems reasonable to adopt this cost effectiveness for area, nonroad and mobile sources in addition to stationary. Secondly, the National Capital Region Transportation Planning Board (TPB) frequently adopts Transportation Emissions Reduction Measures (TERMs) to offset mobile emissions for the purpose of conformity. The majority of TERMS adopted by TPB in the past ten years for the express purpose of reducing mobile emissions have cost less than \$10,000 per ton.¹

The region proposes a threshold of \$3,500-\$5,000 for cost effectiveness. All measures costing under \$5,000 per ton NO_x or VOC reduced will be evaluated against the remaining criteria to determine whether they meet the requirements for a RACM.

7.1.6 Substantial and Widespread Adverse Impacts

Some candidate RACM have the potential to cause substantial and widespread adverse impacts to a particular social group or sector of the economy. Due to environmental justice concerns, measures that cause substantial or widespread adverse impacts will not be considered RACM.

7.1.7 *De Minimis* Threshold

In the General Preamble, EPA allows regions to exclude from the RACM analysis measures that control emissions from insignificant sources and measures that would impose an undue administrative burden. Under moderate area RACT requirements, the smallest major source subject to RACT emits 25 tpy, or approximately 0.1 tpd. Following

¹ Though several expensive TERMS have been adopted in recent years, these measures were designed for congestion mitigation or other transportation purposes. Emission reductions were credited as an ancillary benefit, and the projects would have proceeded even if no emission credits were generated.

these requirements and the precedent set by the San Francisco RACM analysis, the region will not consider control measures affecting source categories that produce less than 0.1 tpd NO_x or VOC emissions.

7.1.8 Advancing Achievement of 84 ppb Standard

In order for measures to be collectively declared RACM, implementation of the measures must enable the region to demonstrate attainment of the 84 ppb ozone standard one full ozone season earlier than currently expected. As discussed in Section 7.1.1, the Washington region currently expects to demonstrate attainment in 2009. Therefore, any RACM would need to enable the region to meet the 84 ppb standard during the 2008 ozone season.

Photochemical modeling performed as part of the Washington region's attainment demonstration has not yet been completed. It is impossible to determine how many additional tons the region would need to reduce in order to ensure that attainment is met in 2008. Preliminary modeling results indicate that any RACM would need to collectively reduce more than 20-40 per day (tpd) of NO_x and/or VOC emission in order to advance the attainment date by one year.

7.1.9 Intensive and Costly Effort

When considered together, the implementation requirements of any RACM cannot be so great as to preclude effective implementation and administration given the budget and staff resources available to the Washington region.

7.2 RACM Measure Analysis

7.2.1 Analysis Methodology

Over the last decade, the Metropolitan Washington Air Quality Committee (MWAQC) has compiled an extensive list of potential control measures. MWCOG has also researched measures used as air quality control strategies in other metropolitan regions. These lists of control measures were compiled into a master list of candidate measures for the RACM analysis. The sources of strategies analyzed for the Metropolitan Washington region include the following:

- Clean Air Act Section 108(f) measures (Transportation Control Measures)
- Transportation Emissions Reduction Measures (TERMs) listed in recent Transportation Improvement Programs (TIPs) for the Metropolitan Washington region
- Measures identified in 1993 and 2003 MWAQC review of Air Pollution Control Measures
- Measures considered in Baltimore, Atlanta and Houston RACM analyses

These measures were then evaluated against the criteria discussed in Section 7.1 as documented in Appendix I.

7.2.2 Analysis Results

Table 7-1 provides lists, organized by source sector, of potential measures evaluated against the RACM criteria. The table shows which measures were determined to meet the individual measure criteria described in Sections 7.1.1 through 7.1.6. For each measure, the table lists whether the measure is considered RACM, and provides a rationale for each individual determination.

7.3 RACM Determination

If implemented collectively, any group of potential RACM would need to provide reductions of 20-4 tpd of NO_x and/or VOC by the 2008 ozone season. The region has reviewed all of the potential control measures to determine if collectively they could meet these criteria. Several mandatory programs are available that can provide moderate levels of emission reductions, however, none of these measures can provide benefits by the 2008 ozone season, and the total overall reduction that could be provided by these measures is below 20-40 tpd. While there are potential voluntary measures that can be implemented before 2008, together these voluntary measures will not provide sufficient creditable emission reductions to advance the attainment date by one year. Therefore, there are no reasonably (RACM) appropriate for the Washington region's moderate area SIP.

Though the measures listed in Table 7-1 did not meet the criteria for RACM, many of the measures are worthwhile measures that reduce emissions. These measures will be considered potential control measures for future SIPs prepared for the Washington region.

Table 7-1. Potential RACM Measures

List #	Measure	Description	RACM: Implementation by May 2008?	RACM: Enforceable?	RACM: Technologically Feasible?	RACM: Economically Feasible?	RACM: No Adverse Impacts?	RACM: Reductions >0.1tpd?	RACM: Yes/No?	RACM: Explanation
Stationary Sources										
S 1	Reductions from EGUs: OTC Model Rule	Adopt OTC Multipollutant Model Rule for EGUs.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
S 2	Reductions from EGUs Plant RACT/Technology-Based Approach	Identify and Require Additional Power Plant-Specific Emission Reduction Technologies.	-	Yes	Yes	-	-	Yes	No	No creditable emission reductions
S 3	OTC Model Rule: Distributed Generation Rule	Adopt OTC Model Rule to Require Additional Controls on Distributed Generation Sources.	No	Yes	Yes	-	No	Yes	No	Will not provide reductions by May 2008
S 4	OTC Model Rule: Peaking Unit Rule	Adopt OTC Model Rule to Require Additional Controls on EGU Peaking Units.	No	Yes	-	-	No	Yes	No	Will not provide reductions by May 2008
S 5	OTC Model Rule: ICI Boiler Standards	Adopt OTC Model Rule on Standards for Industrial, Commercial, and Institutional Boilers.	No	Yes	Yes	Yes	No	Yes	No	Will not provide reductions by May 2008
S 6	Control Asphalt and Concrete Facilities	Require NOx emission limits on asphaltic concrete production facilities.	No	Yes	Yes	No	No	Yes	No	Will not provide reductions by May 2008
S 7	Control Portland Cement Facilities	Adopt OTC Model Rule on RACT Update for Portland Cement Facilities.	No	Yes	Yes	Yes	No	Yes	No	Will not provide reductions by May 2008
S 8	Mineral Products Industry Controls: Glass and Fiberglass	Control Glass and Fiberglass Facility Emissions.	No	Yes	Yes	Yes	Yes	No	No	Will not provide reductions by May 2008
S 9	Controls on Municipal Solid Waste Incinerators	Adopt OTC Model Rule on RACT Update for MSW Incineration Facilities.	No	Yes	Yes	-	Yes	Yes	No	Will not provide reductions by May 2008
S 10	Control VOC Emissions from Chemical Manufacturing	Chemical Manufacturing: More stringent standards on the manufacture of polystyrene, formica, polyester resin, wood and paper, other polymers, pharmaceuticals, paints, varnishes, soaps, detergents, inks, solvents, fuel additives, acids, fertilizers, and resins.	No	Yes	Yes	-	No	No	No	Will not provide reductions by May 2008
S 11	Local Cap and Trade Program	Implement cap and trade program for VOC sources in region. Consider California RECLAIM program.	No	Yes	Yes	-	No	Yes	No	Will not provide reductions by May 2008
S 12	Statewide Emission Registration Program	Require a mandatory statewide registration program for all NOx and VOC emission sources.	No	Yes	Yes	No	No	Yes	No	Not economically feasible
S 13	Clear Skies Act	Implement Clear Skies Legislation.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
S 14	State Multipollutant Legislation	Adopt State Multipollutant Legislation.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008

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S 15	Emission Reduction Credit Retirement Program	Establish program to retire emission reduction credits for stationary sources.	No	Yes	Yes	Yes	-	Yes	No	Will not provide reductions by May 2008
S 16	Episodic Mandatory Facility Reductions	Require mandatory facility reductions on Air Quality Action Days. Require Curtailment Plan.	No	Yes	Yes	-	No	No	No	No creditable emission reductions
S 17	Enhanced Enforcement/Rule Compliance at Existing Stationary Sources	Step up enforcement of and compliance with existing rules for emissions control by stationary sources.	Yes	Yes	Yes	No	Yes	No	No	No creditable emission reductions
S 18	Low NOx Fuel Oil for Stationary Sources	Require oil-burning stationary sources to burn ThermoNOx, a low-NOx No. 2 fuel oil emulsion, during ozone season.	No	-	Yes	-	Yes	-	No	Will not provide reductions by May 2008
S 19	Energy Efficiency Programs	Increase Adoption of Energy Efficient Technology by Government and the Private Sector with Commensurate Retirement of EGU NOx Allowances.	-	Yes	Yes	-	Yes	-	No	Will not advance attainment date
S 20	Energy Efficiency: Energy Efficiency Standards	Establish requirements for minimum energy efficiency, with Commensurate Retirement of EGU NOx Allowances.	-	Yes	Yes	-	Yes	-	No	Will not advance attainment date
S 21	Renewable Energy: Renewable Portfolio Standards	Increase Purchases of Renewable Energy by Government and the Private Sector, with Commensurate Retirement of EGU NOx Allowances.	-	Yes	Yes	-	Yes	-	No	Will not advance attainment date
S 22	Renewable Energy: Solar Photovoltaic Programs	Increase Purchases and Installation of Renewable Energy sources by Government and the Private Sector, with Commensurate Retirement of EGU NOx Allowances. Consider Incentive Programs.	-	Yes	Yes	-	Yes	-	No	Will not advance attainment date
S 23	Renewable Energy: Wind Energy Purchases	Increase Purchases of Renewable Energy by Government and the Private Sector, with Commensurate Retirement of EGU NOx Allowances.	-	Yes	Yes	No	Yes	-	No	Will not advance attainment date
S 24	Renewable Energy: Solar Hot Water Heating	Increase Use of Solar Hot Water Heating by Government and the Private Sector, with Commensurate Retirement of EGU NOx Allowances.	-	Yes	Yes	-	Yes	-	No	Will not advance attainment date

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S 25	Energy Efficiency: Energy Performance Contracting Program	Increase Use of Energy Performance Contracts in the Public and/or Private sector to Reduce Energy Consumption, with Commensurate Retirement of EGU NOx Allowances.	-	Yes	Yes	-	Yes	-	No	Will not advance attainment date
S 26	Energy Efficiency Programs: LED Traffic Signal Retrofit Program	Increase Use Energy Efficient LED Traffic Signals.	-	Yes	Yes	Yes	Yes	-	No	Will not advance attainment date
S 27	Energy Efficiency: Green Building Code Program	Establish energy efficiency standards for building codes, with Commensurate Retirement of EGU NOx Allowances.	-	Yes	Yes	-	Yes	-	No	Will not advance attainment date
S 28	Energy Efficiency: Ground Source Heat Pump Initiative	Increase Purchases and Installation of Ground Source Heat Pumps in the Public and/or Private Sector, with Commensurate Retirement of EGU NOx Allowances.	-	Yes	Yes	-	Yes	-	No	Will not advance attainment date
S 29	Energy Efficiency Programs: LED Street Light Retrofit Program	Increase Use of Energy Efficient LED Street Lights.	-	Yes	-	-	Yes	-	No	Will not advance attainment date
S 30	Energy Efficiency: Energy Star Exit Signs	Increase market penetration of Energy Efficient Lighting (EXIT Signs).	-	Yes	Yes	-	Yes	-	No	Will not advance attainment date
S 31	Chemical Industry Controls	Reduce upwind NOx emissions limits in the manufacture of chemicals.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
S 32	Upwind NOx Controls: Expand NOx RACT to Upwind Counties	Expand NOx RACT Requirements.	No	Yes	-	Yes	Yes	Yes	No	Will not provide reductions by May 2008
S 33	Metallurgical Industry Controls: Iron and Steel	Control Upwind Iron and Steel Production Emissions.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
S 34	Metallurgical Industry Controls: Lead	Control Upwind Lead Smelter Emissions.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
S 35	Metallurgical Industry Controls: Aluminum	Control Upwind Aluminum Production Emissions.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
S 36	Metallurgical Industry Controls: Zinc/Copper	Control Upwind Zinc/Copper Smelter Emissions.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
S 37	Mineral Products Industry Controls: Lime	Control Upwind Lime Facility Emissions.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
S 38	Mineral Products Industry Controls: Phosphate	Control Upwind Phosphate Rock Plant Emissions.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
S 39	Forest Product Industry Controls	Control Upwind Wood, Paper and Pulp Production Emissions.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008

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S 40	Upwind VOC Controls: Plant-by-Plant BACT Controls	Identify and Require Additional Facility-Specific Emission Reduction Technologies.	No	Yes	-	-	-	Yes	No	Will not provide reductions by May 2008
S 41	Upwind VOC Controls: Expand VOC RACT to Upwind Counties	Expand VOC RACT Requirements.	No	Yes	-	Yes	Yes	Yes	No	Will not provide reductions by May 2008
S 42	Upwind NOx Controls: Plant-by-Plant BACT Controls	Identify and Require Additional Facility-Specific Emission Reduction Technologies.	No	Yes	-	-	-	Yes	No	Will not provide reductions by May 2008
S 43	Upwind RACT Update: Refineries	Update RACTs for Refineries in Upwind Contributing Areas.	No	Yes	-	-	Yes	Yes	No	Will not provide reductions by May 2008
Area Sources										
A 1	Control VOC Content of Adhesives and Sealants	Adopt OTC Model Rule. Reduce VOC limits for adhesives and sealants.	No	Yes	Yes	-	-	Yes	No	Will not provide reductions by May 2008
A 2	Low-Emission Asphalt	Adopt SCAQMD Rules 1108: Cutback Asphalt (less than 0.5% VOC evaporating at 260F) and 1108.1: Emulsified Asphalt (less than 3% VOC evaporating at 260F).	No	Yes	-	-	Yes	No	No	De minimis
A 3	Expand Coverage of OTC Consumer Products Rule (Phase II)	Expand Number of Products Covered by OTC Consumer Product Rule. Require Lower VOC Content of Products Already Covered.	No	Yes	-	-	-	Yes	No	Will not provide reductions by May 2008
A 4	Expand Coverage of OTC AIMs Rule (Phase II)	Expand Number of Products Covered by OTC AIMs Rule. Require Lower VOC Content of Products Already Covered.	No	Yes	-	-	-	Yes	No	Will not provide reductions by May 2008
A 5	Green Procurement Policy	Establish procurement policies that foster emission reduction (paints, solvents, coatings, asphalt, roofs, building materials, AFVs, EE office equipment, ULSD).	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
A 6	Control Growth and Development: Land Use Restrictions	Implement land use restrictions to control residential, commercial, and industrial development in the nonattainment area.	-	No	Yes	-	No	-	No	No creditable reductions
A 7	Control Growth and Development: Mitigate New Development	Mitigate emissions from new development.	-	No	Yes	-	No	-	No	No creditable reductions
A 8	Implement Programs to Reduce the Urban Heat Island Effect: Forestry.	Increase Urban Tree Canopy	No	No	Yes	-	Yes	No	No	No creditable emission reduction
A 9	Implement Programs to Reduce the Urban Heat Island Effect: Roofs.	Increase Green and Cool Roof Market Penetration	No	No	Yes	-	Yes	No	No	No creditable emission reduction

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A 10	Implement Programs to Reduce the Urban Heat Island Effect: Pavement.	Increase Cool Pavement Market Penetration	No	No	Yes	-	Yes	No	No	No creditable emission reduction
A 11	Expand Stage I Vapor Recovery	Expand Requirements for Stage I Vapor Recovery to Upwind Counties.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
A 12	Expand Stage II Vapor Recovery	Expand requirements for Stage II Vapor Recovery to Upwind Counties.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
A 13	Upwind Fuels Controls	Expand Use of Reformulated Gasoline to Upwind Counties. Consider OTC Regional Fuels Initiative.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
A 14	Expand OTC Consumer Products Rule	Expand OTC Consumer Product Rule to Upwind Counties.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
A 15	Expand OTC Mobile Equipment Repair and Refinishing Rule	Expand OTC Mobile Equipment Repair and Refinishing Rule to Upwind Counties.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
A 16	Expand OTC Portable Fuel Containers Rule	Expand OTC Portable Fuel Containers Rule to Upwind Counties.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
A 17	Expand OTC Solvent Cleaning Rule	Expand OTC Solvent Cleaning Rule to Upwind Counties.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
A 18	Expand OTC AIMS Rule	Expand OTC AIMS Rule to Upwind Counties.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
A 19	Control Upwind Port Emissions	Pursue approaches to reduce land based port emissions.	No	Yes	Yes	Yes	Yes	Yes	No	Will not provide reductions by May 2008
A 20	Control Drycleaning Facilities	Ban transfer systems in Petroleum Dry Cleaning.	No	Yes	Yes	-	No	Yes	No	Will not provide reductions by May 2008
A 21	Expand Seasonal Open Burning Restrictions	Expand prohibitions on seasonal open burning.	No	Yes	Yes	Yes	Yes	No	No	No creditable reductions
A 22	Enhanced Enforcement: Environmental Partnerships/Pollution Prevention Initiatives	Voluntary compliance audits, encourage low emitting technology (swap out solvent machines)	Yes	No	Yes	-	Yes	No	No	No creditable emission reductions
A 23	Control Agricultural Sources	Encourage agricultural best practices, including those that reduce pesticide use.	Yes	No	Yes	-	No	Yes	No	No creditable emission reduction
A 24	RACT Update: Control Industrial Incineration	Implement programs to reduce emissions from industrial incineration.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
A 25	Home Heating Oil Standards	Adopt OTC model rule on standards for home heating oils.	No	Yes	Yes	-	No	-	No	Will not provide reductions by May 2008
A 26	Control Fermentation Sources (wineries/breweries)	Reduce evaporative VOC emissions from the fermentation process at wineries and/or breweries.	No	Yes	Yes	-	No	-	No	Will not provide reductions by May 2008

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A 27	Control Landfills and Wastewater Facilities	Reduce the NOx and VOC emission limits for flares.	No	Yes	Yes	No	Yes	No	No	De minimis
A 28	Control Wastewater Treatment Facilities	Require capture and control of VOC emissions from facilities treating industrial wastewater and domestic sewage. Adopt SCAQMD Rule 1176: Sumps and Wastewater Separators.	No	Yes	-	-	No	-	No	Will not provide reductions by May 2008
A 29	Control VOC Emissions from Fuel Facilities	Reduce the VOC emission limits for bulk plants/terminal, including storage tanks. Adopt SCAQMD Rule 1178: Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities.	No	Yes	-	-	No	Yes	No	Will not provide reductions by May 2008
A 30	Control VOC Emissions from Construction and Maintenance	Reduce VOC emissions from roofing kettles.	No	Yes	No	No	No	-	No	Will not provide reductions by May 2008
A 31	Control Residential Wood Burning	Implement voluntary program to reduce emissions from wood-burning fireplaces and wood stoves.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
A 32	Low-Emission Natural Gas Water Heaters	Adopt SCAQMD Rule 1121: Control of NOx from Residential Type Natural Gas Fired Water Heaters.	No	No	Yes	Yes	No	No	No	De minimis
A 33	Low-Emission Natural Gas Furnaces	Adopt SCAQMD Rule 1111: NOx Emissions from Natural Gas Fired, Fan-Type Central Furnaces (no more than 40 nanograms of NOx per joule of useful heat).	No	No	Yes	Yes	No	No	No	De minimis
A 34	Control Restaurant Sources	Implement programs to reduce emissions from restaurants, including charbroil operations and deep fat fryers.	No	No	Yes	No	No	No	No	Will not provide reductions by May 2008
A 35	"Cash for Clunkers" Gasoline Containers Replacement Program	Accelerate the Replacement of Older Gasoline Cans with CARB Compliant Containers. Offer incentives for consumers to turn in old gas cans and obtain new ones.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
A 36	Enhanced Enforcement of Area Source Regs: Open Burning	Enhance enforcement of seasonal open burning restrictions.	Yes	Yes	Yes	-	Yes	No	No	No creditable emission reductions
A 37	Enhanced Enforcement of Area Source Regs: Solvent Cleaning	Enhance enforcement of surface cleaning rules.	Yes	Yes	Yes	-	Yes	No	No	No creditable emission reductions
A 38	Mitigation Fees: Preempted Sources	Charge emission mitigation fee to federally preempted sources.	No	-	Yes	-	Yes	-	No	Will not provide reductions by May 2008

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A 39	Pesticide Application: Best Practices	Establish best practices for pesticide application.	Yes	-	Yes	-	No	-	No	No creditable emission reduction
A 40	Control Bakeries	Adopt SCAQMD Rule 1153: Commercial Bakery Ovens. Reduce exemption level and set standards for unregulated bakeries.	No	Yes	Yes	No	No	No	No	Will not provide reductions by May 2008
A 41	Government Actions (Air Quality Action day similar to snow day)	Implement a liberal leave policy for local, state and federal employees on Air Quality Action Days, permitting employees to work from home or take unscheduled leave.	Yes	No	Yes	Yes	Yes	Yes	No	No creditable emission reduction
A 42	Clean Air Partners: Public Outreach and Education	Implement Strategic Communication Campaigns to Increase Public Awareness (target lawnmowers, paints, refueling).	Yes	No	Yes	Yes	Yes	Yes	No	No creditable emission reduction
A 43	Local Government Education Campaign	Encourage local governments to adopt Air Quality Action Day policies (target lawnmowers, paints, refueling).	Yes	No	Yes	Yes	Yes	Yes	No	No creditable emission reduction
A 44	Mass Marketing Campaign	Marketing effort involving business-to-business advertising campaign in print media and on world wide web.	Yes	No	Yes	Yes	Yes	Yes	No	No creditable emission reduction
A 45	Public Outreach and Education: Fueling	Educate to improve fueling practices.	Yes	No	Yes	Yes	Yes	Yes	No	No creditable emission reduction
A 46	Public Outreach and Education: Sources	Public Education on NOx and ROG sources in Schools and Small Businesses.	Yes	No	Yes	Yes	Yes	Yes	No	No creditable emission reduction
A 47	Episodic limits on asphalt paving and traffic marking activities	Prohibit road paving and traffic marking on Air Quality Action days.	Yes	Yes	Yes	Yes	Yes	-	No	No creditable emission reduction
A 48	No Fuel Policy on Air Quality Action Days	Voluntary reduction in fueling activities on Air Quality Action Days.	Yes	No	Yes	Yes	No	-	No	No creditable emission reduction
A 49	Episodic Pesticide Application Ban	Ban pesticide application on Code Red Air Quality Action Days.	Yes	-	Yes	-	No	-	No	Adverse impacts
A 50	Episodic Voluntary Pesticide Application Reduction	Encourage voluntary restrictions on pesticide application on Code Red Air Quality Action Days.	Yes	-	Yes	-	No	-	No	Adverse impacts
A 51	Clean Air Partners: Air Quality Action Days	Take a variety of actions on Air Quality Action Days to reduce emissions and improve air quality (target lawnmowers, paints, refueling).	Yes	No	Yes	Yes	Yes	Yes	No	No creditable emission reduction
Non-road Sources										

Table 7-1. Potential RACM Measures

List #	Measure	Description	RACM: Implementation by May 2008?	RACM: Enforceable?	RACM: Technologically Feasible?	RACM: Economically Feasible?	RACM: No Adverse Impacts?	RACM: Reductions >0.1tpd?	RACM: Yes/No?	RACM: Explanation
N 1	Clean Air Construction Initiative: Road Construction Projects	Develop alternative programs for state and local governments (public entities) to reduce on-road and off-road construction and maintenance related emissions. Episodic: no work or idling restrictions. Non-episodic: Control retrofits.	Yes	No	Yes	-	-	Yes	No	No creditable emission reduction
N 2	Clean Air Construction Initiative: Off-Road Construction Projects	Develop alternative programs for state and local governments (public entities) to reduce on-road and off-road construction and maintenance related emissions. Episodic: no work or idling restrictions. Non-episodic: Control retrofits.	Yes	No	Yes	-	-	Yes	No	No creditable emission reduction
N 3	Clean Air Maintenance Initiative: Road Maintenance Contracts	Develop alternative programs for state and local governments (public entities) to reduce on-road and off-road construction and maintenance related emissions. Episodic: no work or idling restrictions. Non-episodic: Control retrofits.	Yes	No	Yes	-	-	Yes	No	No creditable emission reduction
N 4	Clean Air Construction Initiative: Preference for Low-emissions Industrial Equipment	In bids for government contracts, award extra points to bidders using low-emission industrial equipment.	Yes	No	Yes	-	-	Yes	No	No creditable emission reduction
N 5	Control Construction Emissions	Limitations and Fleet Rules for Construction Equipment.	No	Yes	-	No	No	Yes	No	Not economically feasible
N 6	Non-Road Diesel Engine Retrofit Program: Voluntary	Develop voluntary program encouraging retrofit of non-road diesel equipment in public and/or private fleets.	Yes	No	Yes	-	Yes	Yes	No	No creditable emission reduction
N 7	Non-Road Diesel Engine Retrofit Program: Mandatory	Develop mandatory program requiring retrofit of non-road diesel equipment in public and/or private fleets.	No	Yes	Yes	-	-	Yes	No	Will not provide reductions by May 2008
N 8	Retrofit/Repower Locomotives	Provide financial incentives to retrofit or repower locomotives operating in the nonattainment area for cleaner burning diesel or alternative fuels.	Yes	No	-	-	Yes	-	No	No creditable emission reduction
N 9	Locomotive Idling Reduction	Support Installation of Idling Reduction Technologies on Locomotives.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
N 10	Control Off-Road Diesel Engines (smoke test)	Implement mandatory smoke testing program for heavy-duty (>50 hp) off-road diesel engines.	No	Yes	Yes	No	Yes	-	No	Will not provide reductions by May 2008

Table 7-1. Potential RACM Measures

List #	Measure	Description	RACM: Implementation by May 2008?	RACM: Enforceable?	RACM: Technologically Feasible?	RACM: Economically Feasible?	RACM: No Adverse Impacts?	RACM: Reductions >0.1tpd?	RACM: Yes/No?	RACM: Explanation
N 11	Airport Emission Cap	Establish Agreement with Airports Authority to Cap or Reduce Emissions.	Yes	No	-	-	Yes	Yes	No	No creditable emission reduction
N 12	Airport Emissions Cap in Upwind Counties	Voluntary Agreement to Cap Airport Emissions Outside the Nonattainment Area.	Yes	No	-	-	Yes	Yes	No	No creditable emission reduction
N 13	Airport Electric GSE	Subsidize adoption of electric ground service equipment.	Yes	Yes	Yes	Yes	Yes	Yes	No	Will not advance attainment date
N 14	Airport GSE Retrofits	Subsidize the retrofit of airport ground service equipment.	Yes	Yes	Yes	Yes	Yes	Yes	No	Will not advance attainment date
N 15	Airport GSE Idling Controls	Develop voluntary program to encourage operators to limit idling of airport ground service equipment.	Yes	Yes	Yes	Yes	Yes	Yes	No	Will not advance attainment date
N 16	Airport APU Initiatives	Seek voluntary agreement to reduce use of aircraft APUs through use of gate-provided services or other strategies	Yes	Yes	Yes	Yes	Yes	Yes	No	Will not advance attainment date
N 17	Locomotive Engine Standards	Encourage new federal locomotive engine emission standards (EPA 2012)	No	-	-	-	Yes	Yes	No	Will not provide reductions by May 2008
N 18	Marine Diesel Engine Standards	Encourage new federal marine engine emission standards (EPA 2012).	No	-	-	-	Yes	Yes	No	Will not provide reductions by May 2008
N 19	Control Off-Road Diesel Engines (Blue Sky)	Encourage the use of engines that are included in EPA's voluntary "Blue Sky Series" engine program.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
N 20	Control Spark Ignition Engines	Retrofit controls and 3-way catalyst for spark ignition engines.	-	Yes	-	-	Yes	-	No	No creditable emission reductions
N 21	Industrial Equipment Replacement	Subsidize replacement of fossil-fuel fired industrial equipment with electric industrial equipment.	Yes	No	-	-	No	-	No	No creditable emission reductions
N 22	Light Commercial Equipment Retrofits	Require light commercial equipment to be retrofitted with emissions controls.	No	No	-	No	-	-	No	Not economically feasible
N 23	Control Light Commercial Equipment	Retrofit portable engines and generators.	No	No	-	No	Yes	-	No	Not economically feasible
N 24	Recreational Equipment Retrofits	Require recreational equipment to be retrofitted with particulate filterers and/or oxidation catalysts.	No	Yes	-	-	-	-	No	Not economically feasible
N 25	Control Recreational Marine Emissions	Provide incentives for newer boats and engines.	Yes	No	Yes	No	Yes	-	No	No creditable emission reductions
N 26	Idling Restrictions for Lawn & Garden Equipment	Limit idling by commercial lawn & garden equipment.	No	No	Yes	No	-	-	No	Not enforceable

Table 7-1. Potential RACM Measures

List #	Measure	Description	RACM: Implementation by May 2008?	RACM: Enforceable?	RACM: Technologically Feasible?	RACM: Economically Feasible?	RACM: No Adverse Impacts?	RACM: Reductions >0.1tpd?	RACM: Yes/No?	RACM: Explanation
N 27	Agricultural Equipment Retrofits	Require agricultural equipment to be retrofitted with emissions controls.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
N 28	Agricultural Equipment Use Restrictions	Ban use of agricultural equipment on Air Quality Action Days.	Yes	No	Yes	No	No	-	No	Not feasible
N 29	Low-emissions Agricultural Equipment	Require sale of low-emissions agricultural equipment in region.	No	Yes	-	No	No	-	No	Will not provide reductions by May 2008
N 30	Industrial Equipment Retrofits	Require industrial equipment to be retrofitted with emissions controls.	No	Yes	-	-	No	-	No	Will not provide reductions by May 2008
N 31	Low-emissions Commercial and Industrial Equipment	Require sale of low-emissions commercial and industrial equipment in region.	No	Yes	-	-	-	Yes	No	Will not provide reductions by May 2008
N 32	Idling Restrictions for Commercial and Industrial Equipment	Limit idling by commercial and industrial equipment.	No	No	Yes	No	Yes	Yes	No	Not economically feasible
N 33	Control Light Commercial Equipment	Require zero emission forklifts where feasible.	No	No	-	No	Yes	No	No	Not economically feasible
N 34	Control Commercial Marine Sources	Tug/Push Boat Activity Reductions.	No	Yes	Yes	No	No	-	No	Potential adverse impacts
N 35	Biodiesel for Off-Road Equipment	Increase use of biodiesel in off-road diesel equipment during ozone season.	Yes	No	-	-	-	-	No	No creditable emission reduction
N 36	High Cetane Fuel	Require High Cetane Diesel Fuel for Off-road Vehicles.	No	Yes	Yes	No	Yes	-	No	Will not provide reductions by May 2008
N 37	Require low-NOx fuel for recreational equipment	Require recreational equipment to use low-NOx fuel additives during ozone season.	Yes	Yes	Yes	Yes	-	-	No	Will not advance attainment date
N 38	Low-NOx Fuel for Lawn & Garden Equipment	Require diesel-fired lawn & garden equipment to use low-NOx fuel additives during ozone season.	No	No	-	No	Yes	-	No	No creditable emission reduction
N 39	Low-NOx Fuel for Recreational Marine Equipment	Require diesel-fired recreational marine equipment to use low-NOx fuel additives during ozone season.	Yes	Yes	Yes	Yes	Yes	-	No	No creditable emission reduction
N 40	Require Low-NOx Fuel for Airport GSE	Require airport GSE to use low-NOx fuel additives during ozone season.	Yes	Yes	Yes	Yes	Yes	-	No	No creditable emission reduction
N 41	Require Low-NOx Fuel for Industrial Equipment	Require industrial equipment to use low-NOx fuel additives during ozone season.	Yes	Yes	Yes	Yes	Yes	-	No	No creditable emission reduction
N 42	Require Low-NOx Fuel for Light Commercial Equipment	Require light commercial equipment to use low-NOx fuel during ozone season, if applicable.	Yes	Yes	Yes	Yes	Yes	-	No	No creditable emission reduction

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N 43	Episodic Low-NOx Fuel for Construction Equipment	Require diesel-fired construction equipment operating in region to use low-NOx fuel additives during ozone season.	Yes	Yes	Yes	Yes	Yes	-	No	No creditable emission reduction
N 44	Episodic Low-NOx Fuel for Construction Equipment	Require diesel-fired construction equipment operating on state or local government contracts to use low-NOx fuel additives during ozone season.	Yes	Yes	Yes	Yes	Yes	-	No	No creditable emission reduction
N 45	Episodic Low-NOx Fuel for Construction Equipment	Voluntary use of low-NOx fuel additives by diesel-fired construction equipment during ozone season.	Yes	Yes	Yes	Yes	Yes	-	No	No creditable emission reduction
N 46	Control Recreational Equipment Emissions	Increase registration fee on recreational vehicles (dedicate fee to clean air fund).	No	Yes	Yes	No	Yes	-	No	Not economically feasible
N 47	Control Upwind Port Emissions	Emission Fee Program for Port-Related Mobile Sources	No	Yes	Yes	-	Yes	-	No	No creditable emission reductions
N 48	Graduated registration fees for recreational boats	Levee additional registration fee for registration of boats with old, high-emission engines.	No	Yes	Yes	No	-	-	No	Will not provide reductions by May 2008
N 49	Airport Congestion Pricing	Charge higher aircraft landing fees during busy times of day to reduce airport delays and congestion.	No	Yes	Yes	No	Yes	Yes	No	Not economically feasible
N 50	Gas Tax Increase	Implement a fuel tax on off-road gasoline.	No	Yes	Yes	No	-	-	No	Not economically feasible
N 51	Diesel Tax Increase	Implement a fuel tax on off-road diesel.	No	Yes	Yes	No	-	-	No	Not economically feasible
N 52	Episodic Restrictions on Lawn & Garden Equipment (mandatory)	Restrict use of lawn and garden equipment during Air Quality Action days.	No	-	Yes	-	No	Yes	No	No creditable emission reduction
N 53	Episodic Restrictions on Recreational Equipment Use (mandatory)	Restrict use of recreational equipment during Air Quality Action days.	No	-	Yes	-	No	Yes	No	No creditable emission reduction
N 54	Episodic Restrictions on Use of Commercial and Industrial Equipment (mandatory)	Restrict use of commercial and industrial equipment during Air Quality Action Days.	No	-	Yes	-	No	Yes	No	No creditable emission reduction
N 55	Episodic Commercial Lawn & Garden Equipment Use Restrictions (voluntary)	Encourage restricted use of commercial lawn and garden equipment on Air Quality Action Days.	Yes	No	Yes	-	Yes	Yes	No	No creditable emission reduction
N 56	Episodic Residential Lawn & Garden Equipment Use Restrictions (voluntary)	Encourage restricted use of residential lawn & garden equipment on Air Quality Action Days.	Yes	No	Yes	-	Yes	Yes	No	No creditable emission reduction

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N 57	Episodic Commercial and Industrial Equipment Use Restrictions (voluntary)	Encourage restricted use of commercial and industrial equipment during Air Quality Action Days.	Yes	No	Yes	-	Yes	Yes	No	No creditable emission reduction
N 58	Episodic No Mow Policy on Code Red Days (voluntary)	Voluntary reduction in mowing on Code Red Days.	Yes	No	Yes	-	Yes	Yes	No	No creditable emission reduction
N 59	Episodic Recreational Marine Equipment Use Restrictions (mandatory)	Ban use of recreational marine equipment on Code Red Air Quality Action Days.	Yes	Yes	Yes	No	No	-	No	Potential adverse impacts
N 60	Episodic Recreational Marine Equipment Use Restrictions (voluntary)	Encourage restricted use of all recreational marine equipment on Air Quality Action Days.	Yes	No	Yes	Yes	Yes	-	No	Will not advance attainment date
N 61	Episodic Recreational Marine Idling Restrictions (mandatory)	Ban idling by recreational marine equipment on Code Red Air Quality Action Days.	Yes	Yes	Yes	No	Yes	-	No	Will not advance attainment date
N 62	Episodic Recreational Marine Idling Restrictions (voluntary)	Encourage reduced idling by recreational marine equipment on Air Quality Action Days.	No	No	Yes	No	Yes	-	No	No creditable emission reductions
N 63	Episodic Recreational Marine Idling Restrictions (mandatory)	Ban idling by recreational marine equipment during ozone season.	Yes	Yes	Yes	No	Yes	-	No	Will not advance attainment date
N 64	Recreational Marine Idling Restrictions	Ban idling by recreational marine equipment year-round.	Yes	Yes	Yes	No	Yes	-	No	Will not advance attainment date
N 65	"Cash for Clunkers" 2-cycle Engines	Implement a 2-cycle Engine Replacement Program.	Yes	No	Yes	No	Yes	-	No	No creditable emission reductions
N 66	"Cash for Clunkers" Lawn & Garden Equipment	Offer cash for consumers to turn in lawnmowers or lawn tractors and purchase electric or push mowers.	Yes	No	Yes	No	Yes	-	No	No creditable emission reductions
N 67	"Cash for Clunkers" Outboard Motors	Offer cash for consumers to turn in old outboard motors and purchase new ones.	Yes	No	Yes	No	Yes	-	No	No creditable emission reductions
N 68	"Cash for Clunkers" Recreational Equipment Program	Offer small cash reward for owners to turn in old, high-emission recreational equipment.	Yes	No	Yes	No	Yes	-	No	No creditable emission reductions
N 69	Control Emissions from Lawn and Garden Equipment (xeriscaping)	Adopt measures to reduce lawn area and mower usage. Xeriscaping.	Yes	No	Yes	Yes	Yes	-	No	No creditable emission reductions
N 70	Agricultural Equipment Use Restrictions (voluntary)	Voluntary moratorium on use of agricultural equipment on Air Quality Action Days.	Yes	No	Yes	No	Yes	-	No	No creditable emission reductions
N 71	Low Maintenance Landscape Initiative	"Lawn Care for Cleaner Air": increase use of low maintenance landscapes.	Yes	No	Yes	Yes	Yes	-	No	No creditable emission reduction
Mobile Sources										
M 1	Voluntary Diesel Retrofit Program: Local Vehicles	Retrofit diesel local vehicles.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction

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M 2	Voluntary Diesel Retrofit Program: Commercial Vehicles	Retrofit diesel commercial vehicles.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 3	Low-emission Vehicle Purchase Program: Buses	Accelerate adoption of low-emission vehicles. Consider hybrid and CNG buses.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 4	Low-emission Vehicle Purchase Program: Refuse Haulers	Accelerate Adoption of Low-emission Vehicles. Consider CNG refuse haulers instead of new diesel.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 5	Voluntary Diesel Retrofit Program: School Buses	Retrofit diesel school buses.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 6	Voluntary Diesel Retrofit Program: State Vehicles	Retrofit diesel state vehicles.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 7	Voluntary Diesel Retrofit Program: International Green Diesel Retrofit	Fit transit buses running on ultra low sulfur diesel with a quad-catalytic filter.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 8	Low-emission Vehicle Purchase Program: State and Local Fleets	Accelerate adoption of low-emission vehicles, including hybrids. Focus on state and local fleets.	Yes	No	Yes	Yes	Yes	-	No	Not enforceable
M 9	Low-emission Vehicle Purchase Program: Private Owners Fleet	Accelerate adoption of low-emission vehicles. Consider use of tax incentives.	Yes	No	Yes	-	Yes	-	No	Not enforceable
M 10	Electric Vehicle Tax Incentives	Establish incentives to purchase electric vehicles.	Yes	No	Yes	-	Yes	-	No	Not enforceable
M 11	Low-emission Vehicle Purchase Program: Rental Cars	Accelerate Adoption of Low-emission Vehicles. Target rental car fleets.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 12	Low-emission Vehicle Purchase Program: Taxicabs	Accelerate Adoption of Low-emission Vehicles. Target taxicab fleets.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 13	OTC Corridor Strategy	Implement truck stop electrification projects and Heavy-Duty Engine Engine Control Module (ECM) Recalibration (chip reflash) along the I-95 corridor.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 14	Truck Idling Reduction: Truck Stop Electrification (TSE)	Implement projects to electrify truck stops.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 15	Truck Idling Reduction: Auxilliary Power Units (APU)	Increase market penetration of APUs to reduce truck idling.	Yes	No	Yes	Yes	Yes	-	No	No creditable emission reduction
M 16	Control Bus Emissions	Provide electrified parking spaces or APUs for tour buses.	Yes	No	-	-	Yes	-	No	No creditable emission reductions

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M 17	Smart Growth and Infill Development Programs	Encourage development/redevelopment of land in designated growth areas, encouraging local governments to place greater emphasis on land development near transit stations.	Yes	No	Yes	-	Yes	No	No	No creditable emission reductions
M 18	Incentives for Mixed Use at Transit Centers	Include incentives for mixed-use development at transit centers to reduce sprawl and VMT.	No	Yes	Yes	-	Yes	Yes	No	Will not provide reductions by May 2008
M 19	Infill Development	Implement an infill development program throughout the Washington region.	No	No	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 20	Convenience Commercial Centers in Residential Areas	Change zoning ordinances to allow neighborhood-serving retail establishments in residential areas.	No	Yes	Yes	-	No	-	No	Will not provide reductions by May 2008
M 21	Control Growth and Development	Encourage mixed-use development.	Yes	No	Yes	-	Yes	Yes	No	No creditable emission reductions
M 22	Proximity Commute: Job Swap	Encourage employees of the same firm to swap jobs, permitting each to work at a location closer to home.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 23	Proximity Commute: Live Near Your Work	Provides financial incentives to homebuyers moving to designated neighborhoods near their workplaces.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 24	Telecommuting Centers and Telework Program	Telecommuting centers, including marketing activity, consultant support, commuter and employer information and assistance.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 25	Telecourses at Local Colleges and Universities	Encourage local colleges and universities to offer telecourses to reduce vehicle trips.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 26	Safe Routes to School Program	Implement a safe pedestrian and bicycle routes to school program to reduce VMT.	-	No	Yes	-	Yes	No	No	No creditable emission reduction
M 27	Commuter Operations Center	Provides commuter assistance services, including carpool and vanpool ride-matching.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 28	Guaranteed Ride Home	Provides free rides home in event of unexpected emergency or unscheduled overtime to commuters using public transport.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 29	Access to Jobs Program	Identifies gaps in transit service between places of residence and places of work for low wage workers.	-	No	Yes	-	Yes	No	No	No creditable emission reduction

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M 30	Integrated Rideshare	Provides transit, park & ride, and telecenter information to all commuters on a matchlist.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 31	Interactive Rideshare Kiosks	Transportation Information Kiosks in Maryland, Virginia and the District of Columbia.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 32	Vanpool Programs	Create programs and incentives designed to increase the number of vanpools in the region.	Yes	-	Yes	-	Yes	Yes	No	No creditable emission reduction
M 33	Free Parking for Carpools/Vanpools	Provide free reserved parking spaces for all carpools or vanpools.	Yes	No	Yes	No	Yes	-	No	No creditable emission reductions
M 34	Employer Metro Shuttle Bus Services	Provide incentives for businesses to provide employee shuttle service to the nearest rail or transit stop.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 35	Improvements to Bicycle and Pedestrian Access	Provide incentives to developments that speed improvements to bicycle/pedestrian access. This includes improvements to sidewalks, curb ramps, crosswalks, lighting, etc.	-	No	Yes	-	Yes	No	No	No creditable emission reduction
M 36	Bicycle Racks in DC	Install bicycle racks at various locations throughout the region.	Yes	No	Yes	-	Yes	No	No	No creditable emission reductions
M 37	Bike Lockers at Metro Stations, Park & Ride Lots, Other Locations	Expand existing bike lockers at Metrorail stations, install bicycle storage spaces in parking lots.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 38	Bike Racks on Transit Buses	Provide external bike racks on WMATA and other local transit buses.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 39	Bike to Work Day	Conduct a one-day bike to work event. Provide outreach activities, education on the bike-to-work option, and assistance in trying bike-to-work.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 40	Bike/Pedestrian Paths	Fund construction of additional bicycle/pedestrian paths in the region.	No	No	Yes	-	Yes	No	No	No creditable emission reduction
M 41	Employers Provide Free Bicycles for Midday Use	Require employers to provide one bicycle per 50 employees for mid-day business or personal use.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 42	Car Sharing Program	Fund incentives for new car sharing customers (i.e., Flexcar or Zipcar services).	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 43	Vehicle Share Programs: Transit Stations	Develop a transit station car/low emission vehicle share program.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction

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M 44	Vehicle Share Programs: Neighborhoods	Implement a neighborhood electric vehicle share program.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 45	Clean Commute/Try Transit Week	Promotes use of alternative transportation, including transit, by daily commuters for one week per year.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 46	Student & staff based college & university rideshare programs	Create rideshare program focused on students and staff at regional universities.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 47	Establish Restricted Zones in Downtown Areas and Transit Centers	Restrict private vehicle use in certain areas during business hours, encouraging pedestrian, bicycle, and transit use.	No	Yes	Yes	-	No	Yes	No	Will not provide reductions by May 2008
M 48	4 Day Work Week/Flexible Work Schedules	Encourage employers to adopt a shorter work week, with employees working 4 10-hour days.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 49	Expand Peak Period Metrorail Service	Extend peak-period service on Metrorail so trains run more frequently between 6-11 am and 3-8 pm.	No	No	-	-	Yes	-	No	Will not provide reductions by May 2008
M 50	Expand VRE Train Service	Expand VRE train service to include additional departures.	No	No	-	-	Yes	-	No	Will not provide reductions by May 2008
M 51	Support Rail to Dulles and BWI Airports	Provide funding to expand metro rail services to Dulles and BWI airports.	No	No	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 52	Increase Commuter Rail Frequency	Increase frequency of MARC service to every 15 minutes on Penn and Camden lines and every 10 min on the Brunswick line. Increase VRE frequency to every 15 minutes.	No	No	-	-	Yes	-	No	Will not provide reductions by May 2008
M 53	Provide Additional Transit Service to Core	Increase funding for transit services to expand core service.	No	No	-	-	Yes	-	No	Will not provide reductions by May 2008
M 54	Provide Additional Transit Service Access	Increase funding for enhancing access to transit services.	Yes	No	Yes	-	Yes	No	No	No creditable emission reductions
M 55	Regional Bus Service Expansion	Expansion of Metrobus and other regional bus services.	No	No	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 56	Express Buses From Outlying Areas	Implement direct bus service from outlying Park & Ride lots and far suburbs to major work centers.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 57	Express Reverse Commuter Buses	Implement reverse commute express buses from the District to major outlying work centers.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 58	New Surface Parking at Transit Centers	Add new parking spaces at transit centers (bus, Metrorail, MARC, VRE) parking lots.	No	No	Yes	-	Yes	No	No	No creditable emission reductions

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M 59	Build Park & Ride Lots at Major Intersections of Commuter Highways	Construct new park & ride commuter lots along HOV facilities.	Yes	Yes	Yes	-	Yes	-	No	No creditable emission reductions
M 60	Shorter Distance from Buildings to Bus Stops	For existing buildings, re-route traffic to allow buses to come closer to the building. For new buildings, alter setback requirements to allow closer bus access.	No	No	-	-	Yes	-	No	No creditable emission reductions
M 61	New MARC Coaches	Purchase additional coaches for MARC to accommodate increased ridership.	No	No	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 62	Additional Transit Stores	Establish additional stationary transit stores in the region.	Yes	No	Yes	-	Yes	No	No	No creditable emission reductions
M 63	ATM Machines Installed at Metro Stations	Install ATMs near metro stations for rider convenience.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 64	Traffic Signal Optimization	Regularly optimize traffic signals to reduce idling and low-speed emissions.	Yes	Yes	Yes	-	Yes	-	No	No creditable emission reductions
M 65	Transit Prioritization -- Queue Jumps	Provide queue jumps for buses at over-capacity signalized intersections throughout the region. Queue jumps allow buses to use a shoulder or other designated lane to bypass intersection queues and move forward towards the stop line.	Yes	No	Yes	-	Yes	No	No	No creditable emission reductions
M 66	Manage Roadway Usage: Traffic Incident Management	Regional Travel Information System/Driver Assistance. Enhance real time traffic information to allow drivers to make better decisions about when and where to travel.	-	No	-	-	Yes	-	No	No creditable emission reductions
M 67	Replace Traffic Signals with Lesser Controls	Install roundabouts in place of signals at low volume intersections.	No	Yes	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 68	Signals to Flashing Yellow 12am-5am	From midnight until 5am, set intersection signals to flashing yellow in predominant direction and flashing red in minor direction for all low volume intersections where safety permits.	Yes	Yes	Yes	-	Yes	-	No	No creditable emission reductions
M 69	Extend Ramp Metering	Install signals to control flow of vehicles at selected freeway ramp entrances to maintain level of service.	Yes	Yes	Yes	-	-	No	No	No creditable emission reductions
M 70	Expand HOV Network on the Freeway System	Construct additional HOV lanes on regional freeways.	No	-	Yes	-	Yes	-	No	Will not provide reductions by May 2008

Table 7-1. Potential RACM Measures

List #	Measure	Description	RACM: Implementation by May 2008?	RACM: Enforceable?	RACM: Technologically Feasible?	RACM: Economically Feasible?	RACM: No Adverse Impacts?	RACM: Reductions >0.1tpd?	RACM: Yes/No?	RACM: Explanation
M 71	Manage Roadway Usage: Dedicated Bus Lanes	Dedicate roadway lanes for use by buses.	No	Yes	Yes	-	No	-	No	Potential adverse impacts
M 72	Value Pricing (HOT lanes)	Implement value pricing strategies on busy freeways during rush hour.	No	Yes	Yes	-	-	-	No	Will not provide reductions by May 2008
M 73	Green Curb Initiative	Restricted Access/ "Green Curb". Differential fees and access permits applied during periods of high congestion. Target delivery/loading zones and carpool/vanpool pickup areas.	No	Yes	Yes	-	-	No	No	Will not provide reductions by May 2008
M 74	Congestion Pricing on Low Occupancy Vehicles	Impose a fee on vehicles containing two or fewer persons that use designated roadways, tunnels, and bridges during the peak AM periods.	No	Yes	Yes	-	-	-	No	Will not provide reductions by May 2008
M 75	Establish Clean Air Fund	Sell Clean Air License Plates to fund air quality programs (similar to "Save the Bay" tags).	No	Yes	Yes	Yes	Yes	-	No	Will not provide reductions by May 2008
M 76	Electronic Tolling	Expand interoperability of electronic tolling systems.	Yes	Yes	Yes	-	Yes	-	No	No creditable emission reductions
M 77	Annual Gasoline Vehicle Pollution Fee	Levy an annual fee on petroleum-powered vehicles based on mileage driven and emission rates (odometer tax).	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
M 78	VMT-Based Car Tax	Charge VMT fee for all vehicles registered or garaged in the region.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
M 79	Graduated Car Tax: Additional Vehicles	Charge higher car tax on each additional vehicle registered by a household.	No	Yes	Yes	-	-	-	No	Will not provide reductions by May 2008
M 80	Graduated Car Tax: Miles Per Gallon	Charge graduated car taxes based on a vehicle's EPA miles per gallon rating.	No	-	-	-	-	-	No	Will not provide reductions by May 2008
M 81	Graduated Car Tax: Petroleum-Based Vehicles only	Implement region-wide car tax for petroleum-fueled vehicles.	No	Yes	Yes	-	-	-	No	Will not provide reductions by May 2008
M 82	Graduated Vehicle Registration Fee Based on Number of Vehicles	Assess graduated vehicle registration fee/car tax on every privately owned vehicle in the region. Households with multiple vehicles pay higher tax on each additional vehicle.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
M 83	Pay-as-you-drive auto insurance (\$/gal)	Offer auto insurance rates linked to number of gallons of fuel consumed by vehicle.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008

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M 84	Mobile Source Mitigation Fees: Vehicle Garage	Collect a fee from each homeowner with a vehicle garage.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
M 85	Mobile Source Mitigation Fees: Ozone Season VMT Surcharge	Require a surcharge to be paid by drivers during the summer season based on the number of driving miles.	No	Yes	-	-	-	-	No	Will not provide reductions by May 2008
M 86	Area Pricing: Entry Fees	Collect fees from drivers to enter a pre-defined area.	No	Yes	Yes	-	-	-	No	Will not provide reductions by May 2008
M 87	Gas Tax Increase	Implement a fuel tax on on-road gasoline.	No	Yes	Yes	-	No	-	No	Will not provide reductions by May 2008
M 88	Diesel Tax Increase	Implement a fuel tax on on-road diesel.	No	Yes	Yes	-	No	-	No	Will not provide reductions by May 2008
M 89	Commuter Parking Tax: Employees	Implement daily tax on employees using commuter parking spaces.	No	No	Yes	No	No	-	No	Will not provide reductions by May 2008
M 90	Commuter Parking Tax: Employers with No Discounted Commuter Parking Spaces	Implement daily tax on employers providing free or discounted commuter parking spaces.	No	No	Yes	No	No	-	No	Will not provide reductions by May 2008
M 91	Commuter Parking Tax: Employers with No Transit Benefits	Implement daily tax on employers who do not provide transit benefits to employees.	No	Yes	Yes	No	No	-	No	Potential adverse impacts
M 92	Market Based Parking Charge at Federal Facilities	Negotiate agreement with federal government to charge market rate for daily parking for all employees.	No	No	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 93	Parking Impact Fee: All Parking	Levy annual impact fee on every parking space in nonattainment area.	No	No	Yes	-	No	-	No	Will not provide reductions by May 2008
M 94	Parking Impact Fee: Commuter Parking	Levy an annual fee on every commuter parking space in the Washington nonattainment area.	No	No	Yes	No	No	-	No	Will not provide reductions by May 2008
M 95	Tax Parking Spaces Above Code Minimum	Discourage developers from providing parking in excess of code minimum by imposing a graduated tax on excess spaces.	No	No	Yes	No	No	-	No	Will not provide reductions by May 2008
M 96	Episodic Parking Fee Increases	Increase fees for parking garages and meter during episodes.	No	No	Yes	No	No	-	No	Will not provide reductions by May 2008
M 97	Universal Transportation Access	SmarTrip card will allow users to pay fares on all rail and bus systems in the region (including parking in Metrorail lots) using one electronic card.	-	No	-	-	Yes	-	No	Will not provide reductions by May 2008
M 98	Commuter Choice - State & Local Government Employees	Provide the region's local, state and municipal employees with transit benefits.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions

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M 99	Reduce Parking Fees at Facilities Outside the Beltway Adjacent to Metro	Reduce parking fees at Metro parking facilities or county/city managed facilities outside of the Beltway that are located near Metro stations.	Yes	No	Yes	No	Yes	No	No	No creditable emission reductions
M 100	Metrorail Feeder Bus Service & Fare Buydown	Improve Metrorail feeder bus service at underutilized park & ride lots, implement fare buydown program.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 101	Flat Fare For All Transit Trips	Single price all public transit services with free transfers all day, 7 days per week.	-	No	-	-	Yes	-	No	Will not provide reductions by May 2008
M 102	Subsidize Transit Usage	Expand MetroChek to all public sector employees	Yes	No	Yes	-	Yes	-	No	Will not advance attainment date
M 103	Free Bus Service Off-Peak	Institute free off-peak bus service from 10-2 on weekdays and all day on weekends.	-	No	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 104	Free bus-to-rail / rail-to-bus transfers	Institute free bus-to-rail transfer similar to free rail-to-bus transfer currently in place.	-	No	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 105	Free Rail Use 10-3	Free Metrorail trips for all riders from 10AM-3PM on weekdays.	-	No	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 106	Employer Parking Cash-Out: Voluntary	Implement voluntary program encouraging employers to provide the value of subsidized parking to employees who use alternative commute strategies.	Yes	No	Yes	-	No	-	No	No creditable emission reductions
M 107	Free Transit Passes to Students	Free transit passes for high school and college students, subsidized by schools or through student registration fee.	-	No	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 108	Half Price Fares on Feeder Bus Service	All metro bus and local bus services to Metrorail and commuter rail stations reduce fares by half.	-	No	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 109	College 33 Pass System	Expand Baltimore college bus fare program to DC area. Program allows students to receive reduced fares near 19 participating schools in the region.	Yes	No	Yes	-	Yes	-	No	Will not advance attainment date
M 110	Discount Multi-Trip Bus Fares	Introduce discount programs reducing cost of multiple bus rides through purchase of pass books (e.g. 10-trip tickets).	Yes	No	Yes	-	Yes	-	No	Will not advance attainment date
M 111	Vanpool Insurance	Establish a special risk pool to underwrite the cost of vanpool insurance.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction

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M 112	Commuter Choice Tax Credit	Employers subsidize employees' monthly transit or vanpool costs and receive a tax credit for incurred expenses.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 113	Rebate for Purchase of Hybrid Vehicles	Issue rebate for purchase and registration of hybrid vehicles.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 114	Real-Time Bus Schedule Information	Expand trials of real-time bus schedule information to local transit providers.	Yes	No	Yes	-	Yes	No	No	No creditable emission reductions
M 115	Automatic Bus Locator System	System would provide bus location information to transit dispatchers. This would decrease wait time and improve on-time arrival/departure.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 116	WMATA Bus Information Displays with Maps	Install additional information boxes with maps and schedule information. Would include schedules in languages other than English in neighborhoods where most residents speak another language.	Yes	No	Yes	-	Yes	No	No	No creditable emission reductions
M 117	CAL LEV II Standards	Adopt CAL LEV II Standards, which will require increased zero emission vehicles with marginal VOC and CO2 reductions in 2010.	No	Yes	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 118	Expand Remote Sensing Program	Expand the Adoption of a Remote Sensing Program to Maryland and the District of Columbia.	No	Yes	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 119	Control Heavy Duty Diesel Engines	Heavy-duty engine Engine Control Module (ECM) recalibration (chip reflash).	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 120	Zero I/M waivers and exemptions	Eliminate all waivers and exemptions in the I/M program.	No	Yes	Yes	-	-	-	No	Will not provide reductions by May 2008
M 121	Motorcycle I/M Program	End the motorcycle smog check exemption.	No	Yes	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 122	Diesel I/M Program	Perform community-based inspections of trucks and buses.	Yes	No	Yes	No	Yes	-	No	No creditable emission reduction
M 123	Expand I/M Requirements to Upwind Counties	Expand Inspection and Maintenance Requirements.	No	Yes	Yes	-	Yes	Yes	No	Will not provide reductions by May 2008
M 124	Mandatory Diesel Retrofit Program: Public Fleets	Require retrofit of on-road diesel vehicles in public fleets.	No	Yes	Yes	-	Yes	Yes	No	Will not provide reductions by May 2008
M 125	Mandatory Diesel Retrofit Program: Private Fleets	Require retrofit of on-road diesel vehicles in private fleets.	No	Yes	Yes	-	Yes	Yes	No	Will not provide reductions by May 2008

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M 126	On-road Heavy-Duty Diesel Smoke Testing and I/M Program	Implement a smoke testing and/or Inspection/Maintenance Program for on-road heavy-duty diesel engines.	No	Yes	Yes	-	Yes	No	No	Will not provide reductions by May 2008
M 127	Clean Fuels Program: CNG Fueling Stations for DC Metro Region	Build new modular CNG fueling stations.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 128	Biodiesel Fuel	Expand use of biodiesel fuel for on-road vehicles.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 129	High Cetane Fuel	Require high-Cetane diesel fuel for on-road vehicles.	No	Yes	Yes	No	Yes	-	No	Will not provide reductions by May 2008
M 130	Low-NOx Diesel Fuel	Require regional use of low-NOx fuel additives for on-road diesel vehicles	No	No	-	No	Yes	-	No	Will not provide reductions by May 2008
M 131	Low-NOx On-Road Diesel Fuel in Ozone Season	Require use of low-NOx additive in on-road diesel fuel during ozone season.	No	No	-	No	Yes	-	No	Will not provide reductions by May 2008
M 132	Low-NOx On-Road Diesel Fuel in Ozone Season	Require use of low-NOx additive by state or local diesel vehicles during ozone season.	No	No	-	No	Yes	-	No	Will not provide reductions by May 2008
M 133	Fuel Additives to Reduce Emissions	Use emulsified diesel fuel in diesel burning heavy duty vehicles.	Yes	No	-	No	Yes	-	No	Not enforceable
M 134	CARB Diesel Fuel	Implement CARB diesel fuel standards.	No	Yes	Yes	No	Yes	-	No	Will not provide reductions by May 2008
M 135	Enhanced Enforcement: Bus and Truck Idling	Step-up enforcement of existing regulations to prevent extended bus and truck idling.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 136	Enhanced Enforcement: On-road Idling	Increase enforcement of regional idling restrictions for on-road vehicles.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 137	Enhanced Enforcement of Mobile Source Regulations	Increase smoking vehicle enforcement.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 138	Enhanced Enforcement: Speed Limits	Increase speed limit enforcement so that more vehicles are traveling at or below the posted limit.	Yes	No	Yes	-	Yes	No	No	No creditable emission reduction
M 139	Control Vehicle Idling	No Idling Rule – Restriction. Limits idling to 5 minutes for all non-commercial, consumer operated vehicles within the Washington NAA. Establish exemptions where required.	No	Yes	Yes	-	Yes	No	No	Will not provide reductions by May 2008
M 140	Permit Right Turn on Red	Reduce vehicle idling time by permitting right turn on red, where safety allows.	Yes	Yes	Yes	-	Yes	No	No	No creditable emission reductions

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M 141	Control Vehicle Speeds: Automated Enforcement	Automate speed enforcement and lower the speed limit to 55 mph for heavy duty vehicles.	No	Yes	Yes	-	Yes	-	No	Will not provide reductions by May 2008
M 142	Control Vehicle Speeds: Lower Limits	Speed Limit Restriction: Regional speed limit of 55 mph on all roads which previously had posted speeds of greater than 55 mph.	No	Yes	Yes	-	Yes	Yes	No	Will not provide reductions by May 2008
M 143	Clean Air Partners: Air Quality Action Days	Take a variety of actions on Air Quality Action Days to reduce emissions and improve air quality (free transit, telework, carpool).	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 144	Government Actions (air quality action day similar to snow day)	Implement a liberal leave policy for local, state and federal employees on Air Quality Action Days, permitting employees to work from home or take unscheduled leave.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 145	Clean Air Partners: Public Outreach and Education	Implement Strategic Communication Campaigns to Increase Public Awareness (reduce vehicle use).	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 146	Local Government Education Campaign	Implement Strategic Communication Campaigns to Increase Local Government Air Quality Improvement Efforts (reduce vehicle use).	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 147	Mass Marketing Campaign	Marketing effort involving business-to-business advertising campaign in print media and on world wide web.	Yes	No	Yes	-	Yes	-	No	No creditable emission reductions
M 148	"Cash for Clunkers" On-Road Vehicles	Fund voluntary program paying car owners to turn in old vehicles for scrappage. Target pre-1980 vehicles with minimal/no emissions control.	Yes	No	Yes	No	Yes	-	No	Not economically feasible
M 149	"Cash for Clunkers" Early Bus Engine Replacement	Replaces high-polluting diesel engines in WMATA buses with new diesel engines.	Yes	No	Yes	No	Yes	-	No	Not economically feasible
M 150	"Cash for Clunkers" Taxicab Replacement - Conventional Vehicles	Replace taxicabs with new "conventional" LDGVs.	Yes	No	Yes	No	Yes	-	No	Not economically feasible
M 151	"Cash for Clunkers" Gas Caps Program	Provide free replacement gas caps to light- and medium-duty vehicle owners.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 152	Control Delivery Truck Emissions	Establish voluntary emission reduction program with delivery fleets.	Yes	No	Yes	-	Yes	-	No	No creditable emission reduction
M 153	Rush Hour Shift	Shift Metrorail AM and PM rush hours to start 30 min earlier and end 30 min later.	Yes	No	-	-	Yes	-	No	No creditable emission reduction

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M 154	Mandatory Employee Commute Reduction	Mandatory employer trip reduction to reduce employee vehicle trips.	No	No	Yes	No	No	-	No	Potential adverse impacts
M 155	Manage Roadway Usage: No Drive Days	Odd/Even License Plate no Drive Days. Prohibit drivers from traveling during certain periods, based on vehicle tags or other easily identifiable criteria. Can be a permanent or episodic control.	No	Yes	-	-	No	Yes	No	Will not provide reductions by May 2008
M 156	Transportation Funding Initiatives	Require that Congestion Mitigation Air Quality (CMAQ) funds be used only for projects that improve air quality.	No	No	Yes	No	Yes	-	No	Will not provide reductions by May 2008
M 157	Restrict Parking at Schools	Restrict high school students from driving to and parking at high schools when bus service is available.	Yes	No	Yes	No	No	No	No	No creditable emission reduction
M 158	Restrict Construction of New Parking	Restrict construction of new parking at employment centers based on distance from transit and urban core.	No	Yes	Yes	-	No	-	No	No creditable emission reduction
M 159	Eliminate or Restrict Airport Parking	Eliminate airport parking and replace with alternative fuel shuttle buses.	No	No	Yes	-	No	-	No	Will not provide reductions by May 2008
M 160	Employer Parking Cash-Out: Mandatory	Implement program requiring employers to provide the value of subsidized parking to employees who use alternative commute strategies.	No	Yes	Yes	-	No	-	No	No creditable emission reductions
M 161	Remove Trash Trucks From Area Streets	Reduce use of trash trucks through transport of trash by barge.	-	No	-	-	Yes	-	No	No creditable emission reductions
M 162	Increase Intermodal Transport	Increase use of intermodal options for transporting goods.	Yes	No	Yes	Yes	Yes	-	No	No creditable emission reduction
M 163	Fleet ILEV for light-duty gasoline vehicles	Require fleets operating in nonattainment area to be comprised of a percentage of Inherently Low Emission Vehicles (ILEV).	No	Yes	Yes	No	No	-	No	Will not provide reductions by May 2008
M 164	Control Vehicle Technology	Install systems on gasoline vehicles to reduce emissions (e.g., Bose high-speed centrifugal separation system).	No	-	-	-	Yes	-	No	Will not provide reductions by May 2008
M 165	Control VOC Content of Automotive Products	Windshield Wiper Fluid – lower VOC. Establish evaporative standards that are lower than those set by the EPA – 35 weight-percent VOC.	No	-	-	-	Yes	-	No	Will not provide reductions by May 2008

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M 166	Gasoline Engine Retrofit Program	Retrofit with 3-way catalysts on gasoline-burning heavy duty trucks that currently have 2-way catalysts or no catalysts.	Yes	No	-	-	Yes	No	No	No creditable emission reduction
M 167	Improve Truck Fleet Fuel Economy	Encourage adoption of technologies that increase truck fleet fuel economy.	Yes	No	-	Yes	Yes	-	No	No creditable emission reduction
Note: * Under discussion at IAQC.										

References

US EPA, “State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990”, (57 FR 13498), April 16, 1992.

US EPA Region VI, “Reasonably Available Control Measures (RACM) Analysis for the Dallas/Fort Worth Ozone Nonattainment Area”, December 2000.

Bay Area Air Quality Management District, Metropolitan Transportation Commission and Association of Bay Area Governments, “Bay Area 2001 Ozone Attainment Plan,” October 24, 2001, Appendix C.

¹ See discussion in “Approval and Promulgation of Air Quality Implementation Plans; District of Columbia, Maryland, Virginia; Post 1996 Rate-of-Progress Plans and One-Hour Ozone Attainment Demonstrations; Final Rule (April 17, 2003, 68 FR 19106).