Appendix 9.5

VMEP

VOLUNTARY MOBILE EMISSION REDUCTION PROGRAM (VMEP)

A summary of the expected emission reductions from voluntary programs is shown in the table below. A description of each initiative and the progress to date is outlined in subsequent summaries of each program. Overall, the expected emission reductions from voluntary programs are expected to be 0.8 tpd VOC and 7 tpd NOx with most of the VOC and half of the NOx emission reductions from on-road sources through H-GAC administered programs. Attachment 1 to this report presents additional information on existing VMEPs contained in the December 2000 SIP.

Summary of Latest VMEP Measures for Inclusion in HGA SIP Mid-Course Revision
All measures have been recalculated to reflect changes resulting from MOBILE6.
[Progress to date, through December 2004, using 2007 emission rates]

Measure	Description	VOC Reduction in 2007	NOx Reduction in 2007	Progress to Date and Future Plans
Vehicle Scrappage	Emission reductions through H-GAC administered **LIRAP** to repair or replace high emitting vehicles.	0.10 [0.005]	0.11 [0.005]	Funding to date: $2.2 million in 2004. (Includes benefits only from vehicles scrapped in 2004.)
Smoking Vehicle/ Clean Air Action	TCEQ program – marketing and advertising by H-GAC	0.04	0.05	State program to visually identify high emitters.
Clean Cities / Vehicle Program	Public and private heavy-duty engine/vehicle replacement/retrofit	0.20 [0.044]	3.0 [2.59]	CMAQ funded over 1,000 truck and bus projects of $36 million through 2004.
Commute Solutions	Van pools, additional transit, alternative commuting, and other initiatives	0.40 [0.420]	0.30 [0.400]	Additional commuting initiatives begun in 2004
Regional Computerized Traffic Signal System	Average speed on local streets increased by 21%	0.03	0.03	Federal CMAQ portion funded.
Locomotives	MOA	0.10	2.0	Union Pacific and BNSF have submitted their progress and programs that have met their goal.
Commercial Marine	Tugs/Tows–MOA Ferries–MOA	0.0 0.0	1.1 0.4	The Texas Waterways Operators have signed an MOA.
Total Emission Reduction		**0.8 tpd** [0.5][1]	**7.0 tpd** [5.1][1]	
Total On-road Emission Reduction		**0.6 tpd** [0.5][1]	**3.6 tpd** [3.0][1]	

[1] Rounded from 0.469 for VOC and 2.995 tpd for NOx

Vehicle Scrappage

***Summary of Strategy*:** Sources of emission reductions include the Low Income Repair and Assistance Program (LIRAP). H-GAC is administering LIRAP on behalf of Brazoria, Harris, Fort Bend, Galveston and Montgomery counties. For administering the program, H-GAC claims the emission reductions achieved only through the scrapped portion of the LIRAP, or 93 vehicles in first 10 months of 2004 compared with 3,139 repaired vehicles during that same period. TCEQ has indicated that vehicles would have been repaired regardless of whether the subsidy existed or not, though the LIRAP has been repairing vehicles at an average cost of $631, so many repairs were performed at a cost above the waiver cost of $600. EPA issued guidance that the life of the emission reduction from scrappage programs should be no more than 3 years. So emission reductions begun in 2004 would still be valid for 2007.

***Status*:** H-GAC has been administering this program at least since 2002, and the progress to date includes 5,836 repairs and 224 replacement vehicles. The total expenditures to date on this program have been $3 million. Based on an estimated reduction of 1.68 g/mile VOC and 1.98 g/mile NOx (assuming only vehicles older than 15 years were replaced), 5,774 miles per year per vehicle, the total emission reduction still valid for 2007 for this program is estimated at 1.0 tpy VOC and 1.2 tpy NOx for scrapped vehicles only.

***Continued Implementation*:** The program continues to be implemented as a benefit to society, though less emission reduction credit is given to the program than originally intended.

Sample Calculation: The expected emission reduction was determined using EPA's estimate of high and normal emitting light-duty vehicle emissions rates. The emission rates and activity in miles per year were distributed across all light-duty vehicle types to produce one average estimated emission reduction. The example is just one type of vehicle/fuel injection and one aged vehicle with an overall average determined through a distribution of vehicle types.

Example: 1988 LDGV PFI replaced with an average emitter of the same age.
VOC Emissions Reduction (vehicle type and age) = (1.70 – 0.27) (g/mile) x 5701 (miles) = 0.0090 tpy
NOx Emissions Reduction (vehicle type and age) = (2.85 – 0.85) (g/mile) x 5701 (miles) = 0.0126 tpy

Overall Annual Emission Reduction Estimate (tpy) per Vehicle

Vehicle Type	> 5 years old		> 15 years old		Travel Fraction
	VOC	NOx	VOC	NOx	
LDGV	0.0048	0.0075	0.0112	0.0129	0.662522
LDGT1	0.0045	0.0070	0.0094	0.0113	0.062445
LDGT2	0.0047	0.0075	0.0094	0.0113	0.207876
LDGT3	0.0093	0.0126	0.0114	0.0149	0.046002
LDGT4	0.0095	0.0133	0.0114	0.0149	0.021155
Average	0.0051	0.0078	0.0107	0.0126	1.000000

Smoking Vehicle Program

***Summary of Strategy*:** The program is based on TCEQ's existing Smoking Vehicle Program (in existence since 1992), which had little advertising or marketing in this region. The local effort is through H-GAC's Clean Air Action program with the goal of increasing program awareness. TCEQ receives an average 39 percent of reply cards returned from individuals who have repaired their vehicles after notification. From April 2002 through June 2002, there was a 100 percent increase in Smoking Vehicle reports originating

from the Houston-Galveston nonattainment area. Statewide, 26 percent of reports came from the eight-county Houston-Galveston nonattainment area.

***Status*:** Approximately 15,000 vehicles statewide were reported as smoking vehicles when summer advertising of the program was initiated.

***Continued Implementation*:** Initiating and continuing marketing/advertisement of the program will be required, but current progress indicates that the number of excess high emitters identified in this program will continue.

Sample Calculation: The expected emission reduction was determined using EPA's estimate of high and normal emitting light-duty vehicle emissions rates. The emission rates and activity in miles per year were distributed across all light-duty vehicle types to produce one average estimated emission reduction. The example is just one type of vehicle/fuel injection and one aged vehicle with an overall average determined through a distribution of vehicle types.

Example: 1988 LDGV PFI replaced with an average emitter of the same age.
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LDGT1	0.0045	0.0070	0.0094	0.0113	0.062445
LDGT2	0.0047	0.0075	0.0094	0.0113	0.207876
LDGT3	0.0093	0.0126	0.0114	0.0149	0.046002
LDGT4	0.0095	0.0133	0.0114	0.0149	0.021155
Average	0.0051	0.0078	0.0107	0.0126	1.000000

Clean Cities / Clean Vehicles Program

***Summary of Strategy*:** H-GAC is aggressively pursuing participation from public and private fleet owners in implementing low-emission technology introduction into vehicle fleets (primarily heavy-duty trucks and buses) and fueling infrastructure through the Clean Cities/Clean Vehicles program (http://www.houston-cleancities.org/). Federal funds (Congestion Mitigation and Air Quality – CMAQ) are available for eligible projects using approved technology to reduce smog-forming emissions from on-road motor vehicles. This program has been highly successful in implementing emission controls from on-road mobile sources.

***Status*:** Progress to date is at least 2.6 tpd of NOx reductions with $36 million committed to these projects.

***Continued Implementation*:** Additional funding ($25 million with the current progress to date) and program participation will be needed to reach the goal of 3 tpd from this measure for public and private fleets, but participation and interest continues to be high.

Sample Calculation: The emission reductions were determined using the before and after retrofit/replacement engine emission rate and the annual mileage of the vehicle. Each vehicle type was calculated individually and summed to determine the progress of the program. The emission rate accounts for the use of TX LED and other unique characteristics of the Houston-Galveston area emissions evaluation. The before and after emission rates were calculated using the EPA MOBILE6 model using the input files used by TCEQ but using the by-model-year output format.

Sample Silver Eagle Distributors (replacement of 1991 engine with a 2004 engine)
NOx Emission Reduction = (18.275 – 5.728) (g/mile) x 31,581 (miles) = 0.437 tpy
VOC Emission Reduction = (0.552 – 0.321) (g/mile) x 31,581 (miles) = 0.008 tpy

Commute Solutions

***Summary of Strategy*:** H-GAC's Commute Solutions program consists of: vanpools, alternative commuting, Commuter and Transit Services Pilot Programs, and the SchoolPool Program. A description of each program and progress to date follows.

***Status*:** H-GAC's Regional Vanpool Program, in operation since 1996, is funded using Surface Transportation Program (STP) funds, METRO local funds and employer incentives, which provide reduced monthly costs to participating employees. The vanpool program currently (as of January 2005) has 418 vans, with an average of 12.3 riders per van, and an average round trip of 70 miles. The most common van used is the 15-passenger Ford 150. Emission reductions of 99 tpy VOC and 68 tpy NOx were calculated to occur in 2005 at current participation rates.

Sample Calculation: Each van has a set number of passengers that would otherwise commute with a light-duty vehicle. The emission reduction was calculated using the average light-duty vehicle emission rate multiplied by the mileage for all passengers traveling individually subtracting the emissions from the van's emissions. The H-GAC surveys of vanpool program effectiveness indicates that the average daily round trip commute is 70 miles. Vans trend to be newer model years than the average personal vehicles, so emissions rates, in some cases, could be lower for the heavier van.

Emissions from Commuters in a 12 person vanpool = (0.587 VOC or 0.595 NOx g/mile) x 250 days per year x 70 miles/day x 12 commuters = 0.136 tpy VOC and 0.138 tpy NOx

Emissions from Van (LDGT4) = (0.412 VOC and 0.864 NOx g/mile) x 250 days x 70 miles = 0.008 tpy VOC and 0.017 tpy NOx

VOC Emission Reduction = 0.128 tpy reduction
NOx Emission Reduction = 0.121 tpy reduction

Alternative Commuting: The Best Workplaces for Commuters (BWC) program is part of the VMEP program and helps both commuters and employers, and improves air quality through reductions in vehicular travel. The program began in February 2000 and continues to grow. Studies show that employers offering commuter benefits improve employee recruiting and retention, increase employee job satisfaction, and save money on parking and federal taxes while providing improvements to air quality. H-GAC continues working with companies to promote alternatives to commuting (teleworking, carpools, greater use of public transportation, and walking or biking) among employees. The program provides consultant assistance to human resource managers about teleworking benefits and about developing and

implementing site-specific programs. According to EPA (March, 2004[1]), of every 1,000 employees offered BWC benefits, 200 will switch to an alternative mode, although the article does not quantify the effect of these switches on emission reductions. Based on an ongoing survey by EPA there are 57 companies in the eight-county Houston metropolitan region participating in the program, with 114,684 eligible employees[2]. Using EPA's 20 percent figure and an assumption that these employees would use alternative modes twice a week (EPA does not yet have data on frequency of mode shift), this would be the equivalent of 22,937 employees offered the program. It is estimated that there are 5,141 vanpoolers in the region (418 vans with an average of 12.3 riders per van). If it is assumed that each of these works for a best workplaces employer, then there are 17,796 Best Workplaces participants to calculate benefits for without double-counting vanpool benefits. It should be noted that these participants could be contributing to the teletrip program benefits as well. Since no credit is currently being taken for this program, no double counting needs to be accounted for. If there are 17,796 participants and they use alternative modes twice per week, there is an average of 7,118 people per day. The average round trip work distance in Houston is 40 miles, so this would reduce VMT by 284,720 miles per day. This would result in emissions reductions of 0.184 tons per day of reactive organic gas and 0.187 tons per day of NOx.

Sample Calculation: Alternative commutes subtracting the van pool participation.

*Emission Reduction = (EE – VAN) * RTD *PDAYs * EFNOx (or EFVOC)/907200*

EE:	*Eligible Employees*
RTD:	*Round Trip Distance (40)*
VAN:	*Number of Vanpoolers region-wide (5,141)*
EFNOx:	*NOx emission factor in grams per mile (0.595) (this is average for light duty vehicles in 2007 over all speeds)*
EFVOC:	*VOC emission factor in grams per mile (0.587) (this is average for light duty vehicles in 2007 over all speeds)*
PDAYs:	*Average participation days per work week (2/5)*

Commuter and Transit Services Pilot Programs: There are currently pilot commuter and transit projects (Galveston Island and TREK) operating within the Houston-Galveston region using CMAQ funds to increase public transit ridership. Ridership in the summary table of progress includes commutes during 2004. Pilot programs have specified life, so the progress of this program varies from year to year.

SchoolPool Program: In FY 2004, H-GAC initiated this new program for area schools. The primary objective of the program is to reduce vehicle trips among parents driving children to and from school. The program has just been initiated.

Sample Calculation: Each transit person-mile reduces the travel that would otherwise commute with a light-duty vehicle. The emission reduction was calculated using the average light-duty vehicle emission rate multiplied by the average trip length and number of passengers subtracting the emissions from the bus using a HDDV3 vehicle corresponding to these commute bus gross vehicle weight ratings.

Sample from Galveston Transit (one of two programs credited)
Emissions from Commuters = (0.587 VOC or 0.595 NOx g/mile) x 2533 weekday trips x 8.55 miles/trip = 0.014 tpd VOC and 0.014 tpd NOx

[1] Go to http://www.epa.gov/region6/6xa/ scroll down to Best Workplaces section near bottom and click on full story.

[2] There are 130,690 employees at these companies, but not all are eligible; for example those that work part time.

Emissions from Van (HDDV3) = (0.185 VOC and 3.26 NOx g/mile) x 1000 miles/day = 0.0002 tpy VOC and 0.004 tpy NOx

VOC Emission Reduction = 260 x (0.014 – 0.0002) = 3.6 tpy reduction
NOx Emission Reduction = 260 x (0.014 – 0.004) = 2.6 tpy reduction

Commute Solutions Progress to Date: January 2005 using 2007 Emission Factors

Program	Annual Commutes Affected	Annual Mileage Affected	VOC (tpy)	NOx (tpy)
Vanpools	1,330,000	92,000,000	55	52
Transit Pilot Programs	71,000	7,000,000	4	3
Best Work Places		285,000	46	47
SchoolPool Program	0 to date		0	0
Total (tpy)			**105**	**100**
Total (tpd)			**0.42**	**0.40**

***Continued Implementation*:** These programs are ongoing and some require continued funding at current levels to maintain the estimated emission reduction. Additional funding may be required to increase participation dramatically.

RCTSS Signal Timing

***Summary of Strategy*:** H-GAC is funding implementing entities: Harris County, City of Houston, TxDOT and METRO.

***Status*:** Most of the federal portion of the funding for project implementation has been committed.

***Continued Implementation*:** Reduced idling and braking from mistimed lights will result in the emission reductions similar to those estimated for the VMEP.

Sample Calculation: Each transit person-mile reduces the travel that would otherwise commute with a light-duty vehicle. The emission reduction was calculated using the difference in emissions rate at the average speed prior to the project and that at the average speed after the project multiplied by the VMT for that roadway link.

Emissions Reductions = $(EF_{prior} - EF_{after})$ x VMT

Locomotive Voluntary Reductions

***Summary of Strategy*:** This measure has a 17 percent emission reduction (2 tpd NOx) calculated from a base 2007 inventory of 12.1 tpd NOx. The emission reductions can be derived from a number of control methods from improved efficiency, new engines or other control methods.

***Status*:** This project is the first Memorandum of Agreement (MOA) signed by the Environmental Protection Agency, the Texas Commission on Environmental Quality, the Houston-Galveston Area Council and private entities – Burlington Northern and Santa Fe Railway Company, and Union Pacific

Railroad Company – for the Voluntary Mobile Emission Reduction Program. The agreement was signed in December 2000. For the mid-course review, both Union Pacific and BNSF submitted progress and plans for meeting the voluntary agreement, and the projects are outlined below with progress to date equaling 478 tpy.

Rail Emission Reduction Projects (to Date) and Planned

Company	Projects	NOx (tpy)
Union Pacific	Idle reduction from Automatic Start Stop (AESS) on 83 locomotives through 2003	(290)
Union Pacific	Additional 70 AESS installations	266
Union Pacific	Accelerated turnover to lower emitting engines dedicated to HGA	Undetermined
BNSF	Increase efficiency, 8.8% improvement estimated	(135)
BNSF	Idle reduction from AESS on 8 switch engines locomotives	(28)
BNSF	Line-haul AESS on portion of fleet	(25)
BNSF	Install AESS on an additional 15 switch engines	53
Total (tpy)	**Progress to Date**	**(478)**
Total (tpd)		**(1.3)**

***Continued Implementation*:** Union Pacific and BNSF Railroads have prepared plans to reduce emissions from switching and line-haul engines which will more than meet the MOU goal of 2 tpd NOx reduction.

Commercial Marine

***Summary of Strategy*:** Texas Waterway Operators (TWO): This measure was intended to generate emission reductions through projects associated with commercial marine measures. H-GAC signed an MOA with the Texas Waterway Operators to reduce emissions from tug and barge traffic. TWO is a coalition of 22 independent entities of tugboat, tank barge or towing vessel operating companies engaged in waterborne transportation within the boundaries of the HGA. TWO has submitted a plan to satisfy the agreement by replacing or repowering older tugs with engines meeting lower emission standards and reduced idling time.

TxDOT Bolivar Ferries: An MOA was also signed with TxDOT to retrofit Bolivar Ferries to reduce NOx emissions from propulsion and auxiliary engines. TXDOT expects to reduce emissions either through engine repower or retrofits. The emission reductions reflected in the summary table are derived using a 30 percent reduction estimate. A 70 percent emissions reduction could be achieved depending upon the feasibility of Selective Catalytic Reduction (SCR) retrofits.

***Status*:** TWO submitted the a progress report detailing that most of the projects involved engine replacment with two shoreside power projects totaling 0.84 tpd reduction. Examples of measures under consideration for marine measures include, but are not limited to:

a) Early integration of new engines
b) Retrofit engines with emission reduction technologies
c) Local fleet management by using more efficient equipment
d) Methods to reduce tug and towing vessel idling time

***Continued Implementation*:** Kirby Marine and other TWO members will detail the additional methods used to reach the goal of 1.1 tpd emission reduction. TxDOT is investigating the best emission reduction method for the Bolivar Ferries by instrumenting the vessels in normal operation to determine parameters that vendors of emission control devices can use in preparation for bids. The funding mechanism for the Bolivar Ferry retrofit project was provided using CMAQ dollars.

Background for Emission Reduction Calculations

Average emission rates include expected fleet age distribution and in-use activity, including average speed per link and relative facility type operation. The average emissions rates in Tables 1 and 2 were derived by taking the daily emissions divided by the daily vehicle miles traveled (VMT) for the August 30, 2007 episode day emissions predictions, including adjustments for ambient conditions (humidity and temperature) and TxLED fuel. (TTI, 2005)

TABLE 1: Area-wide average emission rates (g/mile) for light-duty vehicles in HGA in 2007

Vehicle	LDGV	LDGT1	LDGT2	LDGT3	LDGT4	LDDV	LDDT12	LDDT34	MC	LD Avg.
VOC	0.596	0.600	0.632	0.376	0.412	0.321	2.53	0.279	2.66	0.587
NOx	0.543	0.518	0.748	0.595	0.864	0.754	2.47	0.606	1.01	0.594

Table 2: Area-wide average emission rates (g/mile) for heavy-duty diesel vehicles in 2007

Vehicle	HDDV 2b	HDDV 3	HDDV 4	HDDV 5	HDDV 6	HDDV 7	HDDV 8a	HDDV 8b	HDDB T	HDDB S
VOC	0.14	0.18	0.22	0.25	0.35	0.44	0.47	0.43	0.37	0.61
NOx	2.43	3.26	3.97	4.26	5.94	7.72	11.15	10.50	14.44	10.15

References

TTI (2005), provided through Karl Pepple, April 2005.

ATTACHMENT 1: VMEP PROGRAMS REVISED OR DISCONTINUED SINCE 2001

Commercial Marine

***Summary of Revised Estimate for Bolivar Ferries*:** TxDOT has determined that the most feasible emission reduction plan is to rebuild or repower propulsion and auxiliary engines on the Bolivar ferries, resulting in approximately a 30 percent NOx emission reduction below the 70 percent estimate in the 2001 SIP. The Bolivar Ferry estimates were based on engine replacement (~30 percent reduction) rather than SCR (~70 percent reduction).

***Ocean-going Vessel Emission Reductions*:** The Port of Houston aggressively pursued mechanisms to reduce emissions from ocean-going vessels including Coast Guard and other programs, but the fact that most vessels are foreign flagged makes it difficult to commit to emissions reduction programs at this point.

Smart Growth

***Summary of Strategy*:** The primary mechanism is the City of Houston's planned Tax Increment Reinvestment Zones (TIRZ) to reinvigorate the urban area. As of March 2000, there were 26,603 residential dwellings planned and many completed with accompanying retail, commercial, and other development to service the additional residential space. An additional 22,400 residential developments are planned for the Woodlands Town Center from 1999 through 2007.

***Status*:** Additional developments are considered under the TIRZ program.

***Feasible Implementation*:** Current projects cannot generate the emission reduction claimed in the SIP's voluntary emission reduction program, due to a significant reduction in light-duty vehicle emission rates with use of the MOBILE6 model compared with MOBILE5 estimates used in 2001. The VMT reductions claimed from centralized development were difficult to quantify.

Nonroad Demonstration Projects

***Summary of Strategy*:** This measure sought to encourage projects to reduce emissions from nonroad engines. It was conceived as a method to gain voluntary commitments to reduce emissions from nonroad sources.

***Status*:** No projects are expected. TERP was designed to address emission reductions from nonroad engines, so the available TERP funds preclude the ability to gain voluntary participation for these projects.

***Feasible Implementation*:** Because there is no other funding for these projects, no credit can be claimed under the VMEP.

Cool Cities

***Summary of Strategy*:** This strategy sought to reduce ozone levels through code changes and tree cover increases. Local governments would be responsible for administering this program either through direct funding or local regulations.

Status: State funded efforts to examine the effect of this strategy have failed because the meteorological models do not perform sufficiently well to verify the results.

***Feasible Implementation*:** Besides the inability to demonstrate an equivalent emission reduction, this measure was claimed as GAP measure in the SIP. This measure is not feasible as a VMEP control measure.

Local Government

***Summary of Strategy*:** This measure expects voluntary commitments for emission reductions from local governments. This project was intended to assist local governments in selecting and using new emission reduction strategies on a variety of different engines. While this effort overlaps both the Clean Vehicle Program and Commute Solutions, the effort could have included approaches different than those for private entities. The following strategies were included with this measure to achieve additional SIP NOx emissions reductions:

- Public transit use by employees;
- Modifying employee job driving requirements;
- Installing retrofit emission control devices on mobile and stationary emission sources owned by the participating entity; and
- Providing incentives and/or contract requirements for contractors to similarly retrofit their equipment.

***Status*:** Despite continuing effort to gain agreements, no commitments from any local governments have been completed.

***Feasible Implementation*:** No emission reductions are expected from this measure beyond those claimed under the Commute Solutions and Clean Cities/Clean Vehicle Program.

AERCO

***Summary of Strategy*:** The AERCO program was to be expanded to increase the number of emission credit trades and retire a portion of the trades for the benefit of air quality. Those credits retired for the purpose of air quality were to be credited under the VMEP.

***Status*:** TCEQ changed the trading rules, making this program a more costly alternative to the state trading program, so participation in this program has been nonexistent.

***Feasible Implementation*:** Emission reductions are not expected from this program.

Former VMEP Measures and Emission Reductions in the HGA 2001 SIP

Measure	Description	NOx Reduction Claimed 2000 SIP	Rationale/Commitment
Vehicle Scrappage	7,200 Light-duty (LD) vehicles	0.39	Emission reductions through LIRAP. (Measure also elsewhere in SIP.)
Smoking Vehicle/Clean Air Action	A program of the TCEQ, marketing and advertising by H-GAC	0.04	Funding marketing and advertising increases program participation.
Public Fleets Clean Vehicle Program	588 LD SULEV vehicles 6,000 HD vehicles	0.0013 1.02	Year 2000 CMAQ funding ($2 million annually) net 0.5 tpd. Increased reductions reflected in mid-course revision due to additional available funding.
Private Fleets	1,500 LD SULEV 19,000 HD vehicles	0.003 3.2	See Public Fleets above.
Highway Demonstration	Retrofit 10,000 private HD diesel vehicles	0.84	See Public Fleets above.
Commute Solutions	Assumes 10% of workforce eliminates 1 round-trip work trip per week	1.8	Reductions increase w/ added funding (allocated in draft 2004 - 2006 TIP). Program claimed as a GAP measure.
Regional Computerized Traffic Signal System	Average speed on local streets increased by 21%	0.03	Federal CMAQ portion funded.
Smart Growth	Increase urban residential units by 53,903	0.3	Reductions evaporate due to Mobile6.
Non-road Demonstration Projects	Off-road projects	0.5 - 2.0	No funding available as VMEP. Claimed as TERP.
Locomotives	MOA	2.0	Dependant on MOA
Commercial Marine	Tugs/Tows–MOA Ferries–MOA Ocean-going vessels	1.1 0.8 2.9	Dependant on MOAs. Potential ocean-going vessel MOA now appears unlikely.
Cool Cities	Examine the urban tree canopy	0 to 1.0	Not feasible. Also claimed elsewhere in the SIP
Local Government Initiatives	Public entities reduce emissions, thru commuters, point sources, diesel retrofits, & contract incentives	1.5	See Public Fleets above. Dependant on funding. Has also been claimed elsewhere in the SIP
AERCO Pilot Project		6.0	SIP trading rules issues, EPA not approving any mobile credits nationally. Not feasible.
TOTAL		**SIP = 23 tpd**	