MAG 1999 SERIOUS AREA CARBON MONOXIDE PLAN FOR THE MARICOPA COUNTY NONATTAINMENT AREA

EXECUTIVE SUMMARY

MARICOPA ASSOCIATION of GOVERNMENTS

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Within the Maricopa County nonattainment area, the National Ambient Air Quality Standards have not yet been attained for three pollutants: carbon monoxide, particulates, and ozone. The Maricopa Association of Governments was designated by the Governor of Arizona in 1978 and recertified by the Arizona Legislature in 1992 to serve as the Regional Air Quality Planning Agency to develop plans to address these pollution problems.

In accordance with the 1990 Clean Air Act Amendments, the Maricopa County nonattainment area was initially classified as Moderate for carbon monoxide pollution. However, on July 29, 1996, the nonattainment area was reclassified to Serious due to failure to attain the carbon monoxide standard by December 31, 1995. The Serious Area reclassification was effective on August 28, 1996.

The Clean Air Act requires that a Serious Area Carbon Monoxide Plan be submitted within eighteen months of the reclassification date. The plan is required to include a forecast of vehicle miles traveled, transportation control measures, contingency provisions, enhanced vehicle inspection and maintenance program, attainment demonstration and specific annual emission reductions, employer trip reduction program, and oxygenated gasoline. The attainment date for Serious Areas is December 31, 2000.

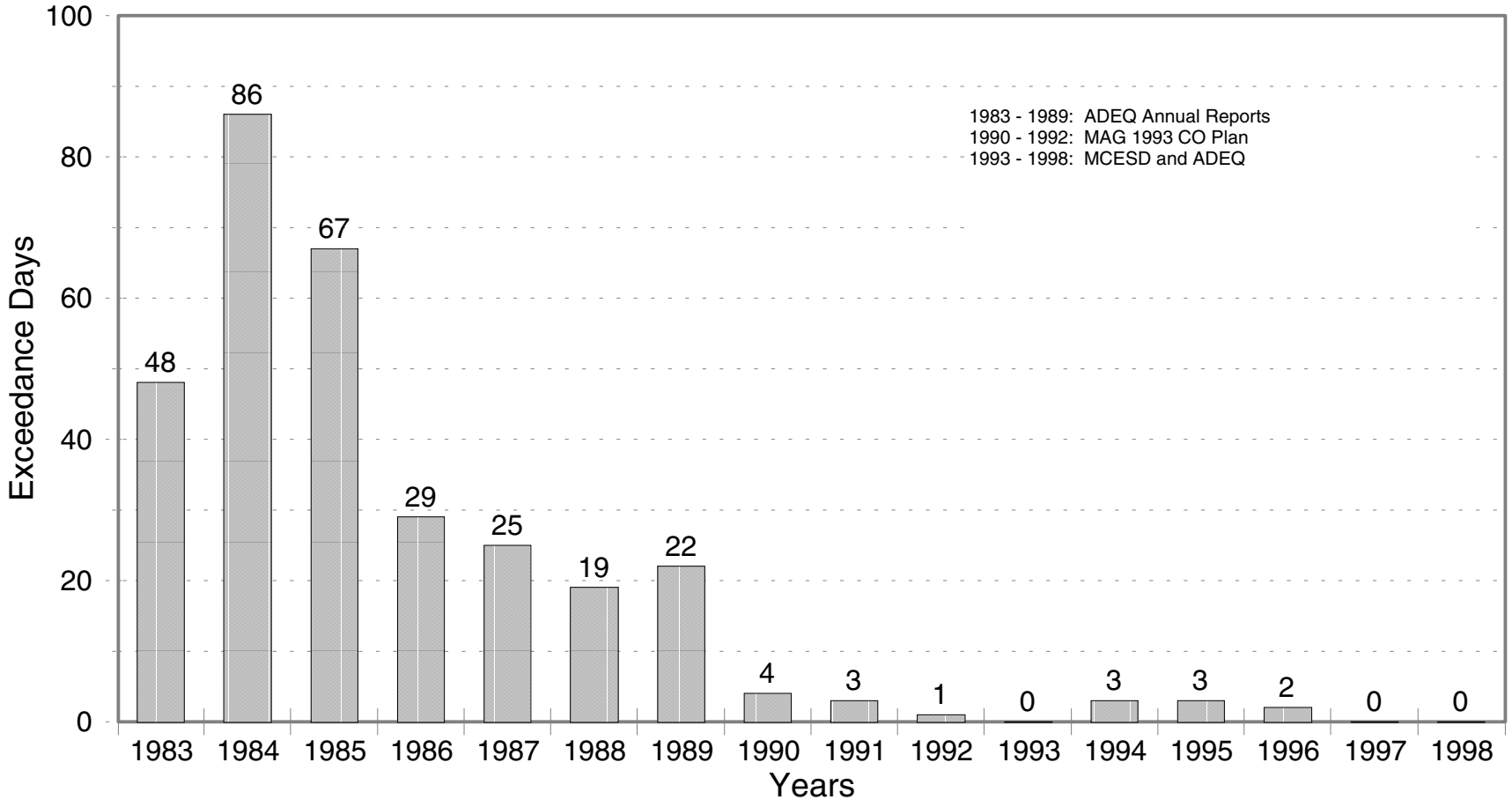
Carbon monoxide can be an air pollution problem during the winter months. It is a colorless, odorless, tasteless, and yet poisonous gas. Carbon monoxide is formed as a by-product of incomplete combustion, when fuel containing carbon is not completely converted to carbon dioxide. The National Ambient Air Quality Standard for Carbon Monoxide is nine parts per million for an eight hour average.

Over time, significant progress has been made to reduce carbon monoxide pollution. In 1997 and 1998, there were no exceedances of the carbon monoxide standard. Annual exceedance day totals recorded over successive years are useful to gauge regional air quality trends and monitor progress toward attainment. Figure ES-1 summarizes the number of exceedance days between 1983 and 1998.

Based upon the 1996 base year emissions inventory, the primary sources of carbon monoxide are: Onroad Mobile (automobiles and trucks) 53.9 percent; Nonroad Mobile (utility lawn and garden, construction, farm, and recreational equipment, aircraft, and locomotives), 43.5 percent; Area Sources (residential wood and industrial fuel combustion, on-site incineration, and open burning) 2 percent; and Point Sources (industrial, manufacturing and electrical power generation facilities) 0.6 percent. The sources are depicted in Figure ES-2.

FIGURE ES-1

NUMBER OF CARBON MONOXIDE EXCEEDANCE DAYS
Maricopa County, Arizona



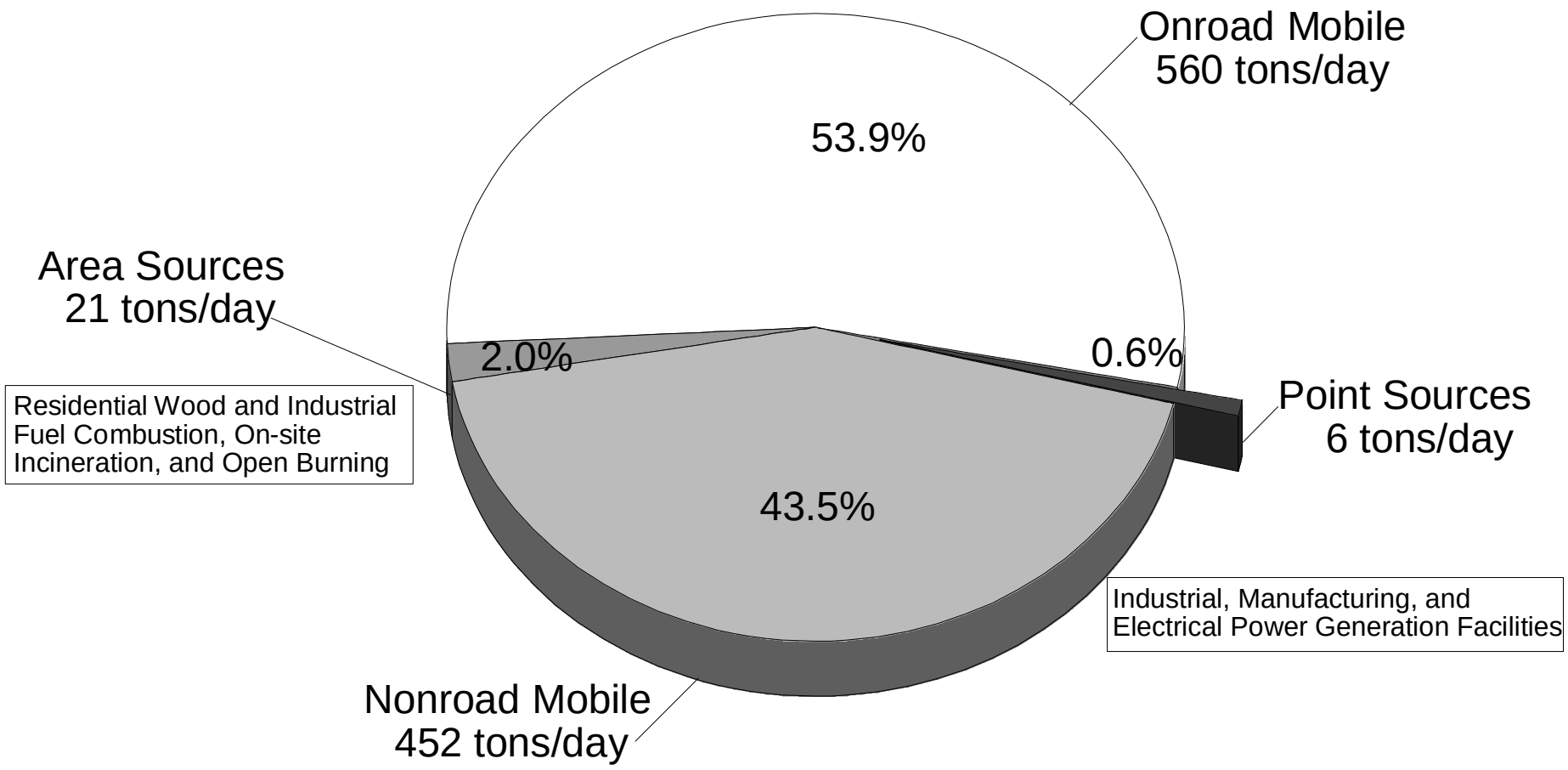
Reported by the Maricopa
Association of Governments
February 3, 1999

ADEQ data to 3rd quarter 1998 only.

FIGURE ES-2

Sources of Carbon Monoxide Emissions

1996 Base Year Inventory (Average Daily CO Season Emissions)



Total = 1039 tons/day

According to the air quality modeling data, the goal for attaining the carbon monoxide standard is a 10 to 11 percent reduction in emissions by December 31, 2000. The modeling is based upon a December 16-17, 1994 design day.

In order to reduce carbon monoxide, the State and local governments committed to implement a wide variety of air quality measures. Key measures included in the plan are: California Air Resources Board (CARB) Phase 2 Reformulated Gasoline During the Winter Months; Phased-in Cutpoints for the I/M 240 Vehicle Emissions Test; Traffic Synchronization; Intelligent Transportation Systems; One Time Waiver from the Vehicle Emissions Test; Deferring Emissions Associated with Government Activities; and other Transportation Control Measures.

Collectively, the impact of the State and local government committed measures is an estimated 10.4 percent reduction in emissions by December 31, 2000. The predicted peak concentration with the committed measures is 8.95 parts per million (see Figure ES-3).

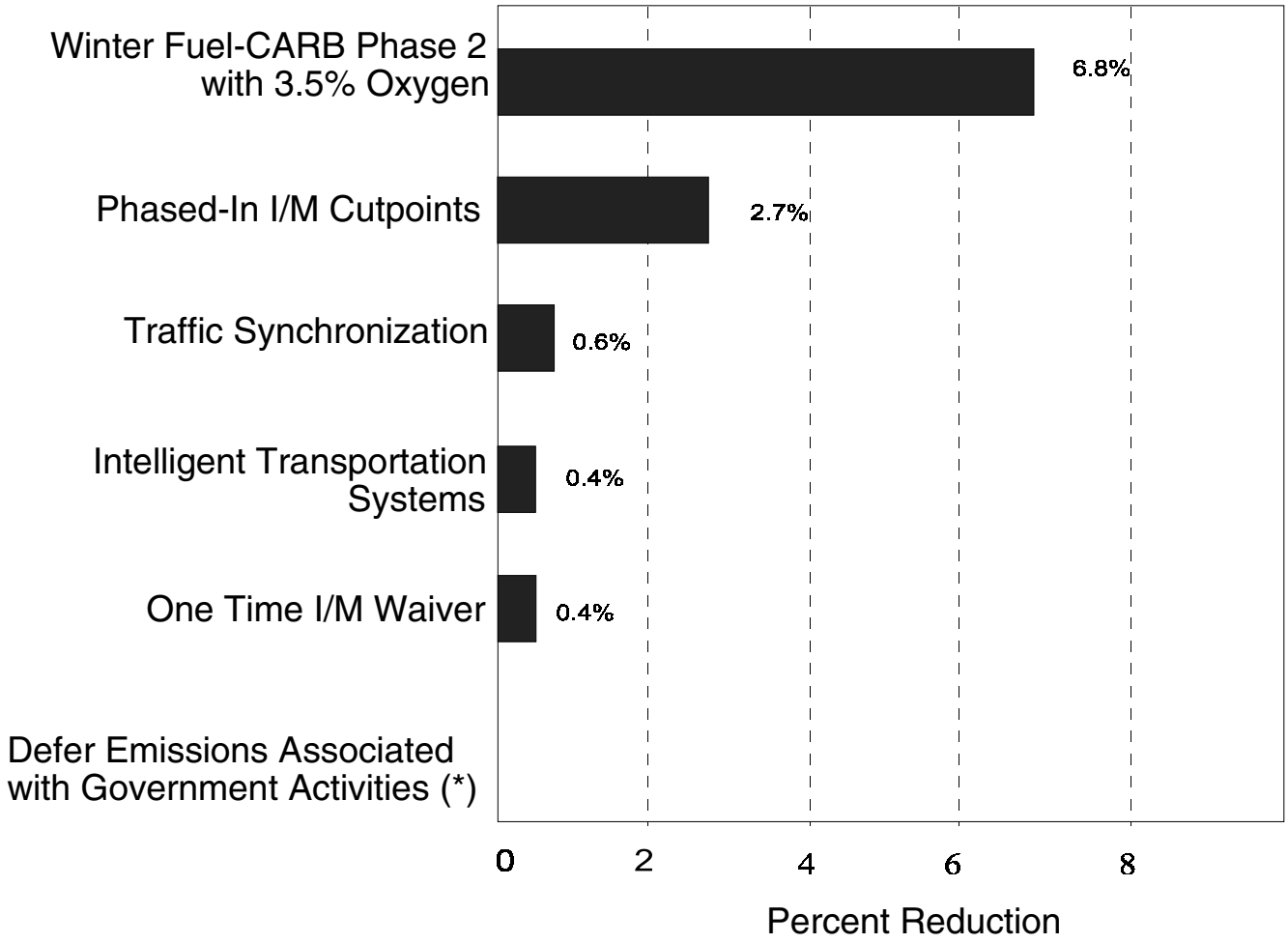
The Serious Area Carbon Monoxide Plan also contains several contingency measures. The contingency measures include: Tougher Enforcement of Vehicle Registration; Catalytic Converter Replacement Program; Voluntary Lawn Mower Emissions Reduction Program; National Low Emission Vehicle Program; Clean Burning Fireplaces; Expansion of Area A Boundaries (for application of air quality measures); Gross Emitter Waiver Provision; and the Increased Waiver Repair Limit.

The collective impact of the contingency measures is approximately a 1.7 percent reduction in emissions in 2000, which is sufficient to off-set one year's growth in vehicle miles of travel. The annual growth in vehicle miles of travel is 2.6 percent which results in a target emission reduction of 1.7 percent in 2000 (see Figure ES-4).

Consequently, the MAG 1999 Serious Area Carbon Monoxide Plan demonstrates attainment of the standard by the December 31, 2000 attainment date. The resulting 2000 Carbon Monoxide Attainment Emissions are depicted in Figure ES-5. For conformity analyses, the motor vehicle emissions budget is approximately 411.6 metric tons per day.

FIGURE ES-3

2000 Carbon Monoxide Emission Reductions from Individual Committed Measures for Attainment Demonstration

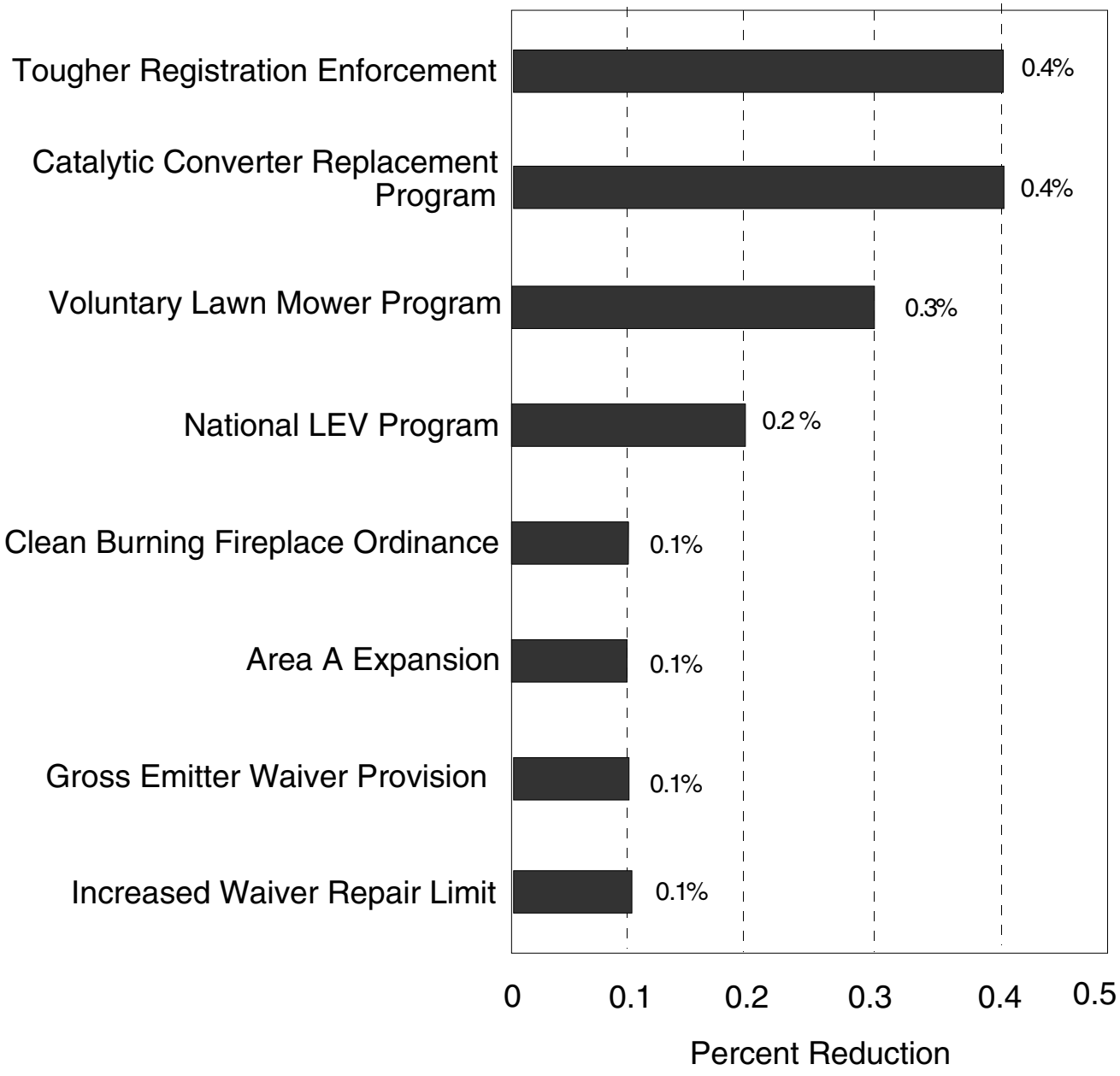


*This measure influences when emissions occur rather than their magnitude.
NOTE: Individual impacts of measures are not additive.

MODELING RESULTS	DECEMBER 2000
Estimated Target Emission Reduction	10-11%
Estimated Reduction from Measures	10.4%
National Carbon Monoxide Standard	9.0 ppm
Peak Concentration w/Measures	8.95 ppm

FIGURE ES-4

2000 Carbon Monoxide Emission Reductions from Individual Contingency Measures



MODELING RESULTS	DECEMBER 2000
Annual Growth in Vehicle Miles of Travel	2.6%
Target Emission Reduction for Contingency Measures	1.7%
Reduction from Contingency Measures	1.7%

FIGURE ES-5

2000 Carbon Monoxide Attainment Emissions

(Metric Tons/Day)