

**State of California
AIR RESOURCES BOARD**

**FINAL CARBON MONOXIDE REDESIGNATION
REQUEST AND MAINTENANCE PLAN FOR
TEN FEDERAL PLANNING AREAS**

California Environmental Protection Agency



Air Resources Board

TABLE OF CONTENTS

	Page
I. OVERVIEW	1
II. IMPACT OF CALIFORNIA'S MOTOR VEHICLE AND CLEAN FUELS PROGRAM ON CARBON MONOXIDE LEVELS	1
III. FUTURE CARBON MONOXIDE EMISSION REDUCTIONS	2
IV. BASIS FOR THE REDESIGNATION REQUEST AND MAINTENANCE PLAN	2
V. ENVIRONMENTAL IMPACTS	3
VI. RECOMMENDATION	4

LIST OF FIGURES

- Figure 1 Areas Proposed for Redesignation
Figure 2 Carbon Monoxide Emissions vs. Daily Vehicle Miles Traveled

I. OVERVIEW

This staff report summarizes the Request for Redesignation (Request) of the ten areas listed in Figure 1 from nonattainment to attainment for the federal carbon monoxide (CO) air quality standard. The Request presents the data and information needed by the U.S. Environmental Protection Agency (U.S. EPA) to redesignate the areas to attainment.

The proposed action is a major milestone in California's clean air effort. All of California, with the exception of the South Coast Air Basin, has attained the federal CO standard.



Figure 1

Attainment of the federal carbon monoxide standard represents a significant health benefit to Californians. Carbon monoxide has significant health effects when present in levels above the standard. An odorless, colorless gas, CO is readily absorbed by the body through the lungs and can reduce the amount of oxygen that reaches the heart, brain, and other tissues. Adverse health effects which have been linked to exposure of elevated CO levels can be especially harmful to children, people with heart disease, and pregnant women. At moderate levels, CO exposure has been linked to symptoms such as dizziness, nausea, fatigue, poor vision and concentration, headaches, and heart pains. Exposure to high levels of CO may result in unconsciousness and death.

II. IMPACT OF CALIFORNIA'S MOTOR VEHICLE AND CLEAN FUELS PROGRAM ON CARBON MONOXIDE LEVELS

More than 80 percent of the CO emissions in the larger urban areas are produced from motor vehicles. Although Californians drive more miles today than ever before, we have seen a dramatic decline in CO concentrations over the past ten years (see Figure 2). We expect this trend to continue well into the next century. This success is largely due to the Air Resources Board's (ARB) strong motor vehicle and clean fuels programs.

The program has been

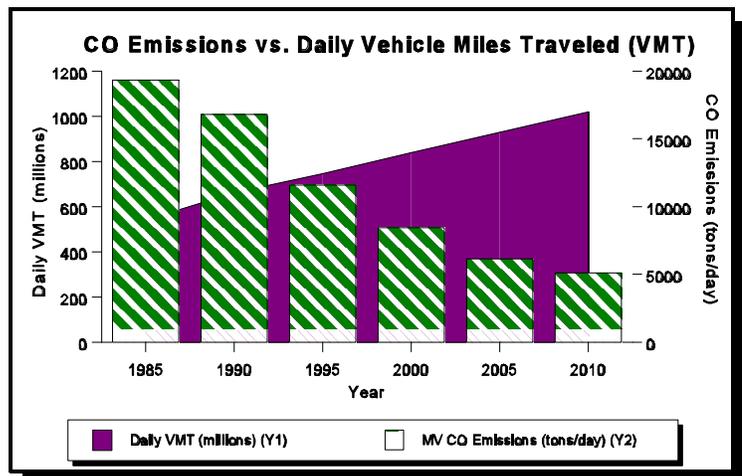


Figure 2

instrumental in reducing air pollution through advanced emission controls and motor vehicle emission standards which are more stringent than the national standards set by the U.S. EPA. With California's persistent air pollution problem, ARB's motor vehicle control program has had to continue delivering new emission reductions. In addition to stricter standards for motor vehicles, one of the largest decreases in CO emissions was seen when ARB's requirement for wintertime oxygenated gasoline took effect in November 1992. Adding oxygenates to gasoline improves combustion, thereby reducing CO exhaust emissions, as well as other air pollutants.

III. FUTURE CARBON MONOXIDE EMISSION REDUCTIONS

ARB's motor vehicle program will continue to provide additional CO reductions. Programs that will further reduce CO emissions include California Cleaner-Burning Gasoline, low-emission vehicles, and advanced on-board computer systems. California's "clean-burning" gasoline will significantly improve air quality by reducing emissions from all gasoline-burning motor vehicles and engines on the road today. By June 1996, all gasoline sold in the state must be cleaner-burning gasoline. The cleaner fuel is expected to reduce CO on-road motor vehicle emissions by 11 percent or 1300 tons per day statewide in 1996. The Low- Emission Vehicle Program will also contribute to reduced CO emissions well into the future. In addition, beginning with 1996 model year, vehicles will be equipped with advanced on-board computer systems that will monitor the emission control system and warn the driver of any malfunctions. Finally, the improved Smog Check program, that will be implemented in many major urban areas to reduce ozone precursors, will also provide CO emissions benefits.

IV. BASIS FOR THE REDESIGNATION REQUEST AND MAINTENANCE PLAN

The federal Clean Air Act (CAA) identifies the requirements that need to be met before U.S. EPA can redesignate an area from nonattainment to attainment. These requirements and a brief summary of how these requirements were met are outlined below. They are presented in greater detail in the Appendix.

1. *The area must have air quality data to show the standard has been met.* Air quality data show that CO levels have dropped enough that the ten areas attained the federal CO air quality standard during the two-year period from 1993 to 1994. The air quality trend for CO shows a general decline over the past several winter seasons when CO levels are highest. This trend is expected to continue as CO emissions decrease further in future years.
2. *Each area must have a U.S. EPA-approved State Implementation Plan (SIP).* Before each nonattainment area can be redesignated to attainment, U.S. EPA must approve individual requirements (see item 5) for each area. With the submittal of this proposed attainment demonstration and maintenance plan, all CO requirements in the CAA will be met. Once U.S. EPA approves each of these items, the condition that the areas have a fully-approved SIP will be met.

3. *The air quality improvements are permanent and enforceable.* The improvements in air quality must not have occurred as a result of depressed economic conditions or favorable meteorology. We believe the data showing increasing vehicles miles traveled during the period and a comparison of days with measurable rainfall support a finding that the reduction in CO did not occur as a result of either condition. Rather, we believe that the reduction in CO levels is a direct result of the implementation of a number of ARB mobile source and clean fuel regulations, as well as stationary regulations implemented by the air districts.
4. *The area has a plan for maintaining the federal CO standard as required in the CAA.* A Maintenance Plan for the ten areas is included in the Appendix to this Staff Report. The Maintenance Plan shows that each area will be able to maintain the federal CO standard for at least ten years after the area is redesignated to attainment. The Maintenance Plan also identifies the extra measures that will be implemented in the unlikely event that the standard is violated during the maintenance period.
5. *Each area must have met all the legal requirements in the CAA in order for the U.S. EPA to approve the area's plan for maintaining air quality.* California has met all the legal requirements for each of the ten areas proposed for redesignation. These requirements and ARB's actions are itemized in the Appendix to the Staff Report.

In addition to the above requirements, ARB previously submitted 1990 and 1993 winter season CO emission inventories for these areas as required by the CAA. Although these emission inventory submittals constitute revisions to the SIP and are subject to a regulatory approval process, public meetings were deferred in accordance with U.S. EPA policy to allow inventories to be considered along with attainment or maintenance plans. Therefore, the Board will also hear comments on the related 1990 and 1993 CO emission inventories in Attachment 2 of the Appendix.

V. ENVIRONMENTAL IMPACTS

Staff find no adverse environmental impacts associated with the proposed redesignation request, attainment demonstration and maintenance plan. ARB regulations referenced in the request and plan were evaluated pursuant to the California Environmental Quality Act (CEQA) at the time the Board adopted each one.

The Maintenance Plan contains ARB-adopted regulations that will "come on line" from 1996 through 2003 to generate new reductions in CO emissions, above and beyond those needed for attainment. The following regulations were found to have no substantial adverse environmental impacts: 1) improved Smog Check programs; 2) advanced on-board computer systems; and, 3) lawn, garden, and utility equipment.

The remaining regulations were identified as having some potential adverse

environmental impacts which are summarized below. Combined hydrocarbon (HC) and oxides of nitrogen (NOx) emission standards for off-highway vehicles could potentially result in a slight increase in NOx emissions (0.05 tons per day). However, the benefits from associated HC emission reductions would more than compensate for the air quality impacts of this relatively small NOx increase. CO emission standards were also introduced in this regulation and would produce further CO benefits.

Cleaner-Burning Gasoline and the Low-Emission Vehicles/Clean Fuels programs had been initially identified as having the potential for minimal emission increases. The increased emissions were expected to occur with the refineries that needed additional processing equipment to comply with the new fuel specifications. Increased fuel consumption and increased storage of products were also projected to occur with cleaner burning gasoline with a resulting increase in emissions of several criteria pollutants. However, the emission increases expected with the fuel-related regulations did not occur. Application of air district New Source Review rules requiring facilities that expand their operations to apply the best available control technology (BACT) and offset the projected emission increases resulted in full mitigation of potential emission increases.

ARB staff believes that the combined effect of these regulations will have substantial overall positive air quality benefits. The emissions reductions associated with these regulations should far outweigh any related potential adverse environmental impacts. Once these programs are implemented, they will contribute to the continued maintenance of the federal CO standard in these areas. More detailed environmental impact analyses can be found in the staff reports associated with each measure.

VI. RECOMMENDATION

The staff recommends that the Board approve this Redesignation Request, Maintenance Plan, and the related 1990 and 1993 CO emission inventories for submittal to U.S. EPA. All the requirements for redesignating the ten areas from nonattainment to attainment for the federal CO standard have been met.