

I. INTRODUCTION

The San Francisco Bay Area Air Basin covers Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma Counties (see Figure I-1). The Bay Area Air Quality Management District (District) is the air quality agency responsible for the entire basin. The Bay Area is California's second largest metropolitan region with a population of about six million, about 20 percent of the statewide total. Pollution sources in the region also account for about 20 percent of the statewide emissions of ozone-forming volatile organic compounds (VOC) and nitrogen oxides (NO_x).

Figure I-1



In response to numerous violations of the federal one-hour ozone standard in 1995 and 1996, the U.S. Environmental Protection Agency (U.S. EPA) redesignated the Bay Area as nonattainment; required a new attainment plan by June 15, 1999; and established an attainment deadline of November 15, 2000. In the July 10, 1998 notice of action (63 FR 37258) and subsequent correspondence, U.S. EPA defined the required elements of State Implementation Plan (SIP) revision to include:

- a 1995 emission inventory for VOC and NO_x;
- an assessment of the emission reductions needed to attain the standard by 2000, using available data and technical analyses;
- a control strategy sufficient to attain the standard by 2000;
- revised emissions budget for transportation conformity; and
- contingency measures.

Air quality planning in the Bay Area is the joint responsibility of three agencies: the District, the Metropolitan Transportation Commission (MTC), and the Association of Bay Area Governments (ABAG). The District took the lead in developing the *San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard* (Bay Area Plan) by preparing the 1995 emissions inventory, the attainment assessment, and those portions of the control

strategy pertaining to stationary and area sources. MTC, the regional transportation planning agency, was responsible for reviewing and updating the transportation control measure element. ABAG, as the agency responsible for coordinating land use planning in the Bay Area, provided support by reviewing and commenting on the draft portions of the Plan. The boards of the District, ABAG, and MTC adopted the Plan on June 16, 17, and 23, 1999, respectively.

This Staff Report briefly describes: air quality in the Bay Area, recent clean air plans and applicable requirements, the contents of the 1999 Bay Area Plan and staff's evaluation, the Air Resources Board's (ARB's) legal authority, and the potential environmental impacts. This Report also includes the projected emission inventory for the year 2000 based on existing measures, which the District chose not to include in the Bay Area Plan. Finally, the report presents our conclusions and recommendations to the Board.

A. Air Quality in the Bay Area

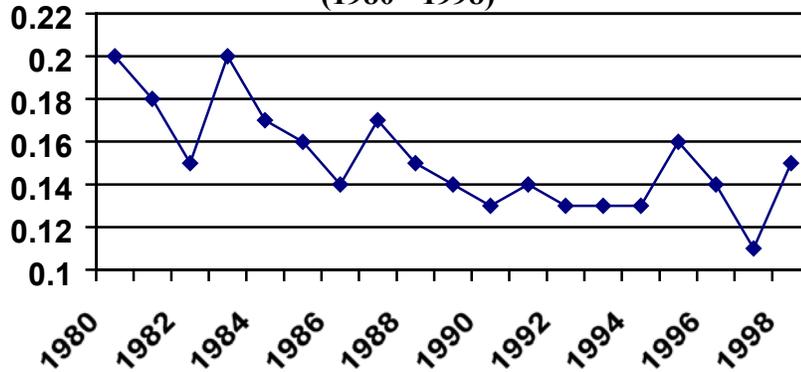
Overall, air quality in the Bay Area is much better than in other urban areas of California, largely due to its cooler temperatures and better ventilation. The climate in the Bay Area varies, ranging from mild temperatures all year along the coast, to warmer temperatures with greater seasonal fluctuation in the inland counties. This variation can also be seen in the ozone levels -- lower along the coast and higher in the inland valleys.

The District operates 25 routine monitoring sites for ozone in the Bay Area. The monitoring station located in the Livermore Valley typically records the highest ozone levels. Most of the measured exceedances of the standard in 1995, 1996, and 1998 occurred at this site. The other monitoring stations that showed days over the standard include Concord, Los Gatos, San Martin, and Gilroy.

In general, air quality in the Bay Area has steadily improved since the late 1980s as shown in Figure I-2. Determining the actual trends of air quality over time is difficult because of the large role that meteorology plays. While this is true of all areas, it appears even more so for the Bay Area in recent years. Because the Bay Area climate is characterized by cooler temperatures and steady ocean breezes, changes from that regime from year to year cause pollutant concentrations to change accordingly, in spite of steadily declining emissions. Air quality trends evaluated over long periods of time, such as 10 to 20 years, minimize the impact that meteorology may have on ozone levels in any single year. In the Bay Area, meteorological conditions generally favored poor air quality in 1995, 1996, and 1998 and relatively good air quality in 1990-1994 and in 1997 when the Bay Area had the lowest ozone levels since 1954.

Figure I-2

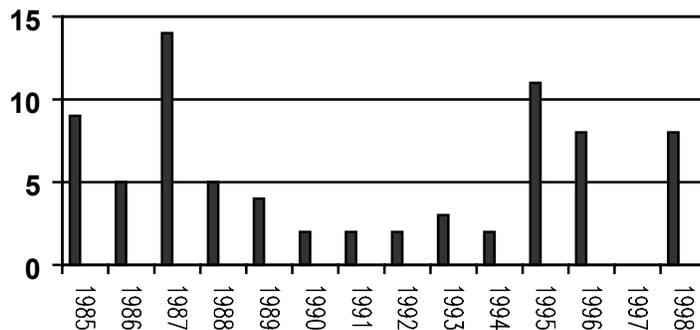
**Maximum 1-Hour Ozone Concentrations
in the Bay Area
(1980 - 1998)**



The Bay Area experienced 11 days over the national ozone standard in the summer of 1995, eight days in 1996, and eight days again in 1998 (see Figure I-3). The effects can be attributed to differences in the number and severity of episodes of “ozone conducive” weather. Even though there has been steady progress in reducing total emissions of VOCs and NOx in the Bay Area, the reductions have not been enough to prevent violations under all meteorological conditions.

Figure I-3

**Number of Days National 1-Hour Ozone
Standard Exceeded
(1985 - 1998)**



Note: In 1997, there were no exceedances of the national ozone standard.

B. Air Quality Planning in the Bay Area

This section briefly reviews the relevant planning provisions in both the federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA), and describes recent Bay Area plans. While the Bay Area Plan is specifically designed to fulfill federal planning requirements only, plans for the state requirements provide some insight into previous commitments for new measures.

1. Federal Clean Air Act Planning Provisions

The FCAA establishes specific requirements for nonattainment areas. For ozone, nonattainment areas are classified as marginal, moderate, serious, severe, or extreme, based on the severity of the problem. The planning and control requirements, as well as the time allowed to reach attainment (from 1994 to 2010), vary based on the area's classification. Areas classified serious and above were required to develop, adopt, and submit attainment demonstrations by November 15, 1994. The 1994 California State Implementation Plan for Ozone (SIP) contains the overall strategy for achieving the federal one-hour ozone standard in the six nonattainment areas. Although the SIP does not explicitly address the Bay Area, the significant new state and federal measures in the SIP provide benefits statewide.

The Bay Area was designated as nonattainment with a moderate classification, which carried an automatic attainment date of 1996. Moderate and above areas were required to develop, adopt, and submit a "15 Percent Rate-of-Progress Plan" showing how the area would reduce VOC emissions by 15 percent between 1990 and 1996. Because of the near-term attainment date, moderate areas were not required to submit plans with air quality modeling to demonstrate how the area would attain the ozone standard. Since there were no violations of the ozone standard in the Bay Area between 1990 and 1993 when the 15 Percent Plan was due, the District instead prepared a request for redesignation to attainment that included an ozone maintenance plan.

a. Bay Area 1994 Ozone Maintenance Plan

After experiencing clean air (no violations) from 1990 to 1994, the Bay Area District submitted a request to U.S. EPA for redesignation to attainment for the federal one-hour ozone standard. U.S. EPA approved the redesignation request and accompanying maintenance plan on May 22, 1995. The Ozone Maintenance Plan had five elements: an attainment inventory (based on 1990 emission levels), a maintenance demonstration, a monitoring network, a verification of continued attainment, and a contingency plan. The contingency plan to be implemented if there were subsequent violations of the standard included enhancements to the inspection and maintenance (I & M) program and more stringent stationary source NO_x controls.

b. Requirements for the Bay Area 1999 Ozone Plan

After reviewing the violations of the standard in 1995 and 1996, U.S. EPA determined that the contingency measures in the approved ozone maintenance plan were not sufficient to bring the Bay Area back into attainment. Instead, U.S. EPA redesignated the Bay Area as nonattainment once again and called for a new plan to demonstrate attainment by November 15, 2000.

In the July 10, 1998 *Federal Register* notice of redesignation, U.S. EPA provided an extended discussion of the “streamlined” requirements that would govern the Bay Area’s new ozone attainment plan. U.S. EPA determined that the existing FCAA classification system does not apply to the Bay Area and redesignated the Bay Area under the general provisions of the FCAA in order to allow for maximum flexibility in defining the applicable planning requirements. U.S. EPA, in stating that it wanted the Bay Area District and its co-lead agencies to focus on emission reductions and not on a burdensome and duplicative planning effort, identified only three elements for the Bay Area’s nonattainment plan:

- a 1995 baseline emission inventory for VOC and NO_x;
- an attainment assessment, i.e., an analysis of the amount of VOC and NO_x reductions necessary for the region to re-attain the national ozone standard; and
- a control strategy that will provide the emission reductions sufficient to attain the ozone standard.

In subsequent correspondence, U.S. EPA added a revised emissions budget for transportation conformity to this list.

2. California Clean Air Act Planning Provisions

On a triennial basis, the Bay Area District is required to update its air quality plan to meet requirements in the 1988 California Clean Air Act (CCAA). The CCAA requires districts that violate the state one-hour ozone standard of 0.09 ppm to prepare comprehensive clean air plans to ensure steady progress towards attainment. Progress is defined as a five percent annual reduction in ozone precursors or implementation of all feasible measures. All districts required to do these plans have used the all feasible measures option to show progress. The 1999 Bay Area Plan includes and thereby makes federally enforceable some but not all of the VOC measures in its most recent CCAA plan which also contains additional adopted NO_x measures.