2. LOCAL AIR QUALITY

The California Clean Air Act (CCAA) requires the California Air Resources Board (ARB) to evaluate and identify air quality related indicators for districts to use in assessing their progress toward attainment of the state standards. Districts are required to assess their progress triennially and report to the ARB as part of the triennial plan revisions. The assessment must address (1) the peak concentrations in the peak "hot spot" subarea, (2) the population-weighted average of the total exposure, and (3) the area-weighted average of the total exposure. The exposure data are typically provided by ARB and have been presented in previous plans. ARB, however, is no longer providing area-weighted and population-weighted exposure data to the districts and those data are not available to be included in this plan.

The peak "hot spot" indicator is assessed in terms of the Expected Peak Day Concentration (EPDC). The EPDC is provided to districts by the ARB for each monitoring site in the county and represents the maximum ozone concentration expected to occur once per year, on average. The EPDC is calculated using ozone data for a three-year period (the summary year and the two years preceding the summary year). For example, the 2011 EPDC for a monitoring site uses data from 2009, 2010 and 2011. The data that are used in the calculation are the daily maximum one-hour and eight-hour ozone concentrations. The EPDC is useful for tracking air quality progress at individual monitoring stations since it is relatively stable, thereby providing a trend indicator that is not heavily influenced by year-to-year changes in weather.

Figures 2-1 and 2-2 show the one-hour and eight-hour EPDC trends for the period 1990 through 2011for monitoring sites in the county that typically record highest ozone concentrations. These figures show that peak day concentrations have significantly decreased during the period and all sites have one-hour peak day concentrations below the state one-hour ozone standard. Eight-hour peak day concentrations, whiles showing significant improvement over time, remain above the state eight-hour ozone standard at each of the sites.

Figures 2-3 and 2-4 depict the percent reduction in one-hour and eight hour EPDC values. The one-hour EPDC percent reductions range from 25 percent at the Carpinteria site to 38 percent at the Los Flores Canyon site. The corresponding eight-hour percent reductions range from 20 percent at Carpinteria to 28 percent at Los Flores Canyon.

Air quality improvement is also seen in the number of state one-hour and eight-hour ozone concentration exceedances that have been experienced in the county between 1990 and 2011. As displayed in Figure 2-5, one-hour ozone exceedances have decreased from a high of 37 days (1990 and 1991) to zero days (2005, 2006 and 2010). The number of eight-hour ozone exceedance days range from a high of 97 days during 1991 to just 3 days during 2011. These significant improvements in air quality have occurred despite a 15 percent increase in county-wide population and an 18 percent increase in daily vehicles miles travelled (VMT) between

1990 and 2011(see Figure 2-6).

This 2013 Plan has been prepared to document progress toward the state one-hour and eight-hour ozone standards. Although Santa Barbara County violates the state eight-hour standard, recent data show that the county continues to attain the state one-hour standard of 0.09 ppm. The county's air quality has improved dramatically over the years as evidenced by the one-hour and eight-hour EPDC data and in the long-term decline in the number of county-wide ozone exceedances.

FIGURE 2-1
STATE 1-HOUR OZONE EXPECTED PEAK DAY CONCENTRATION
SANTA BARBARA COUNTY MONITORING SITES
1990 – 2011

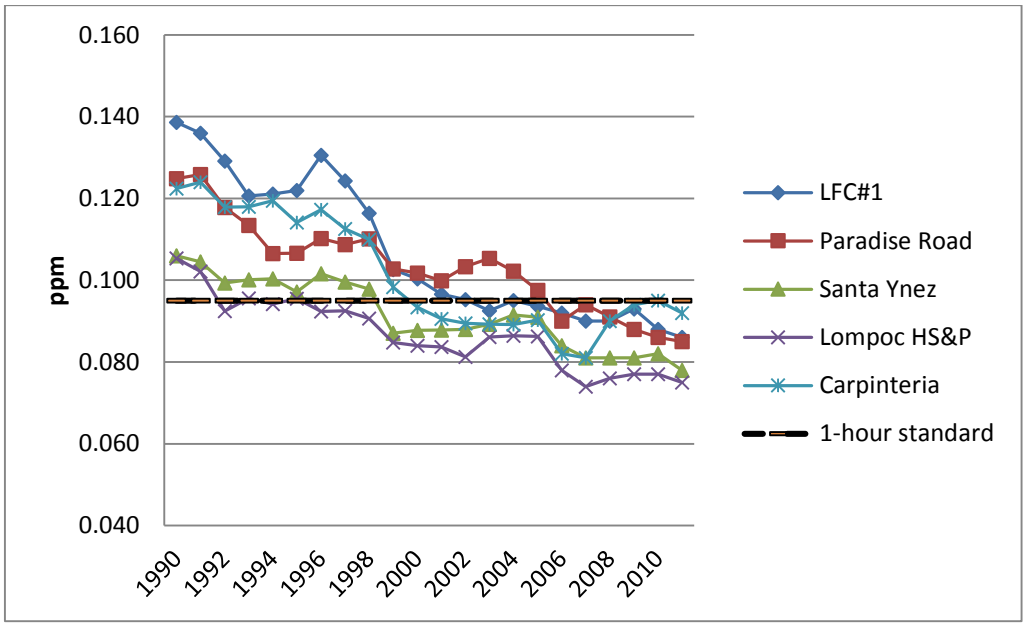

FIGURE 2-2
STATE 8-HOUR OZONE EXPECTED PEAK DAY CONCENTRATION
SANTA BARBARA COUNTY MONITORING SITES
1990 – 2011

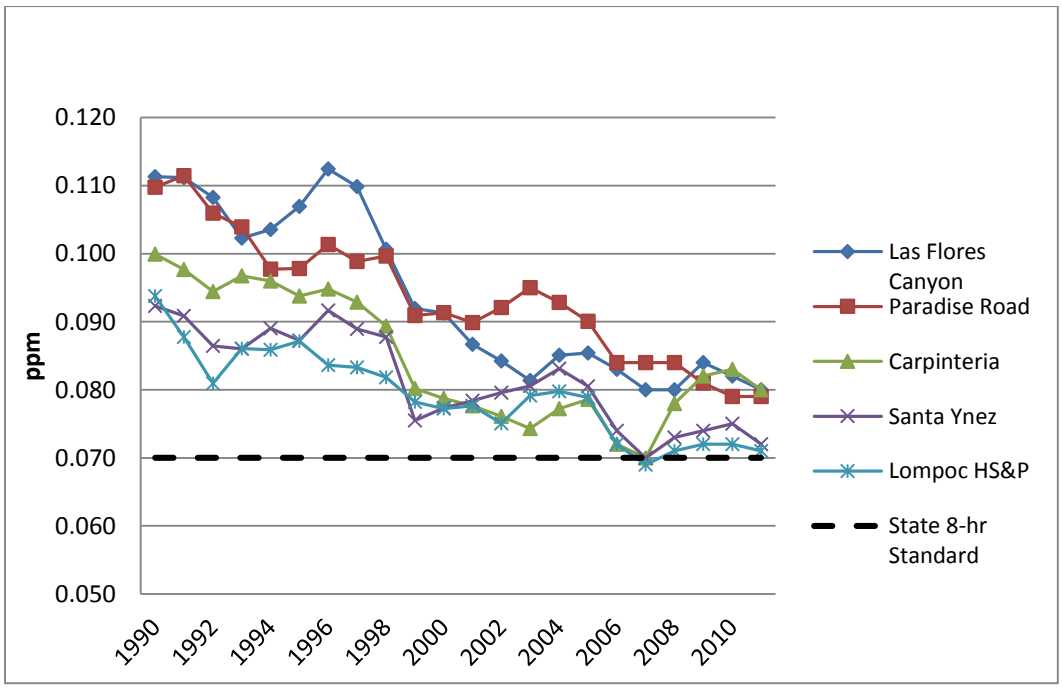

FIGURE 2-3
PERCENT REDUCTION IN EXPECTED PEAK DAY 1-HR OZONE CONCENTRATIONS: 1990 – 2011

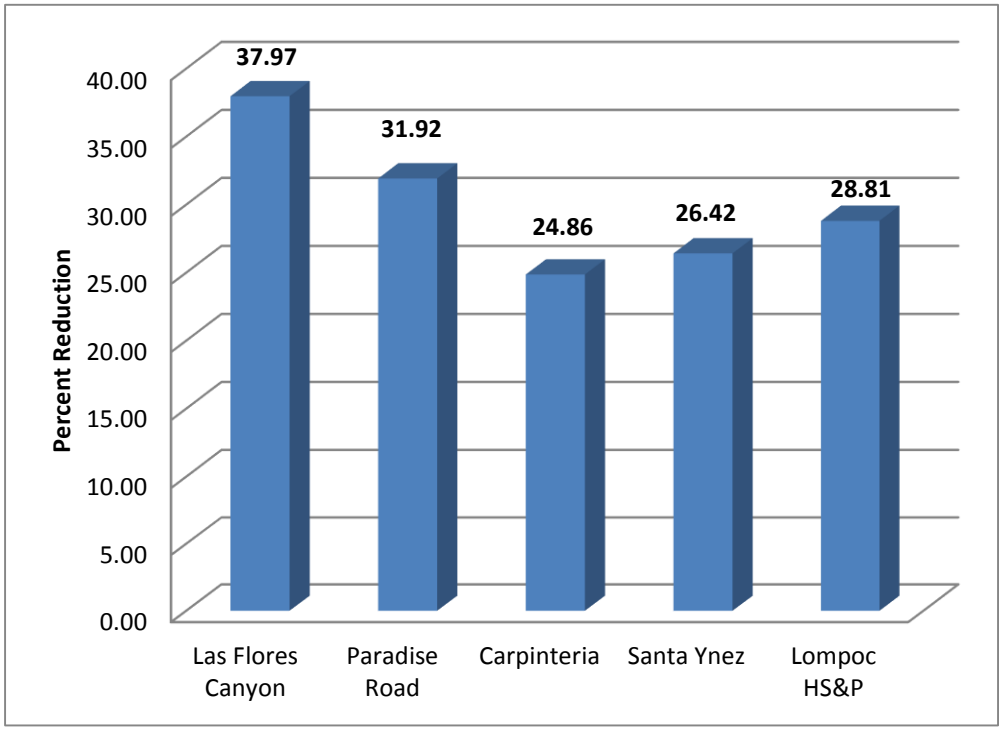

FIGURE 2-4
PERCENT REDUCTION IN EXPECTED PEAK DAY 8-HR OZONE CONCENTRATIONS: 1990 – 2011

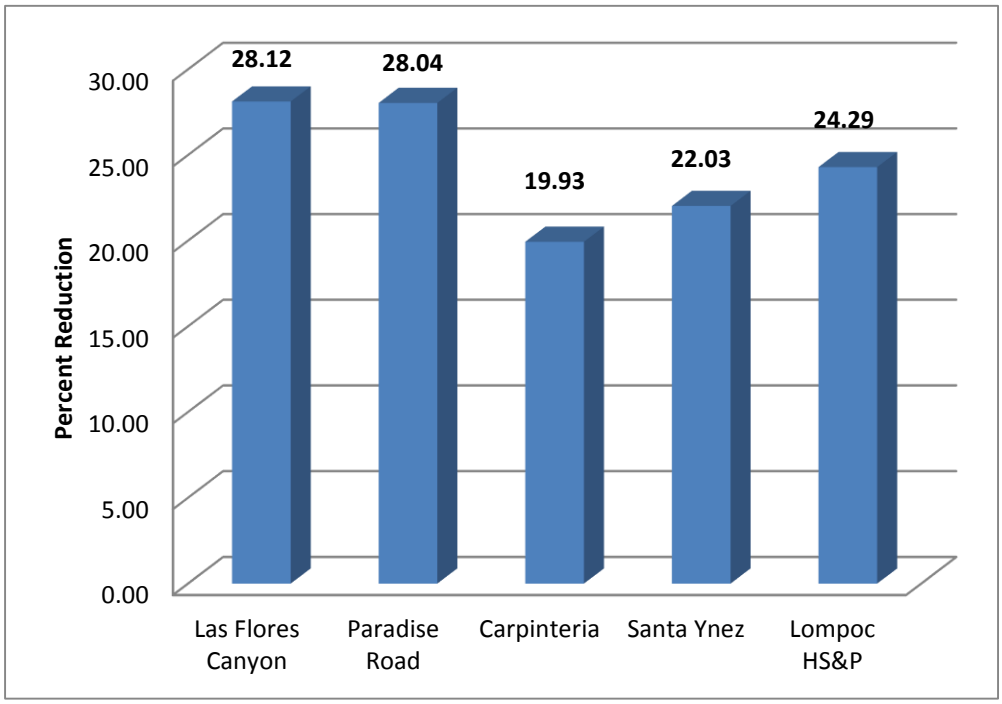

FIGURE 2-5
1-HOUR AND 8-HOUR OZONE EXCEEDANCE TRENDS
SANTA BARBARA COUNTY
1990-2012

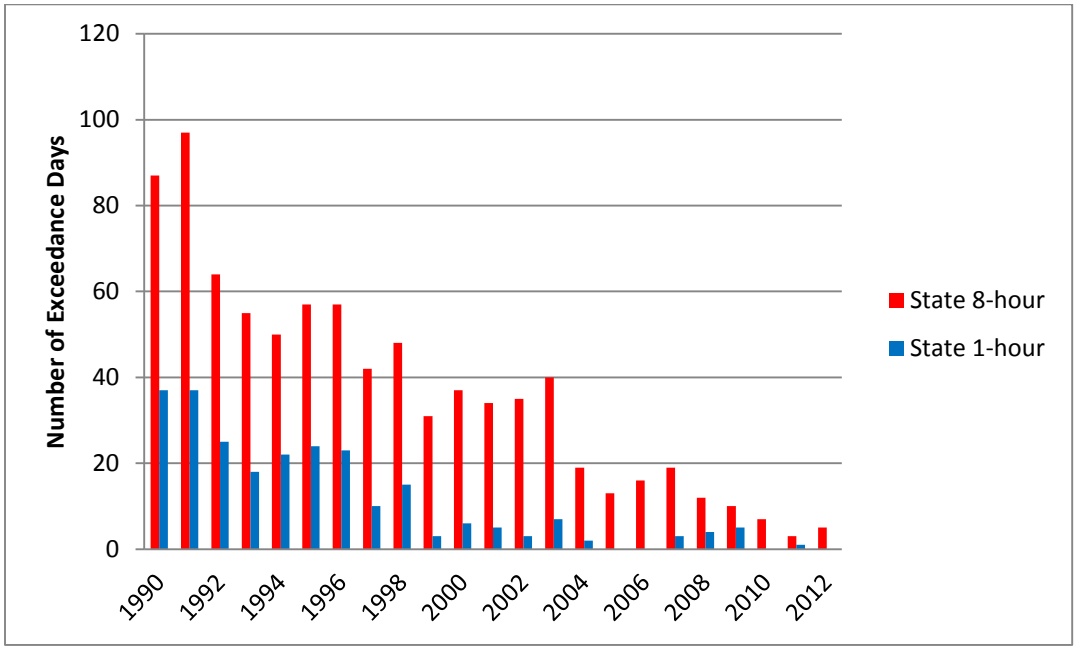

FIGURE 2-6
POPULATION AND DAILY VMT TRENDS
SANTA BARBARA COUNTY
1990-2011

SOURCES: CALTRANS AND CALIFORNIA DEPARTMENT OF FINANCE