

## 2 Objectives of Report

In response to the Board's directive at its November 5, 1999 hearing, ARB staff undertook research efforts to explain the cause(s) of the observed Weekend Effect on ozone concentrations. The primary objective of this report is to summarize the results and implications of these recent short-term ARB research efforts into the Weekend Effect. These efforts relied primarily on statistical analysis of air quality and motor vehicle activity data from the South Coast Air Basin. The ambient air quality analyses thus far do not provide definitive conclusions because of the limitations in the hydrocarbon database and the inability to individually isolate, in ambient data, the various factors potentially influencing ozone formation. The research described in this report attempt to describe and quantify the variations in ambient air quality concentrations and traffic activity that might be associated with the Ozone Weekend Effect. Research efforts into developing better weekend emission inventories and subsequent modeling are not short-term projects and were therefore not explicitly included in this report. There is a clear research need to develop accurate, gridded, speciated, day-of-week emission inventories for passenger cars, heavy-duty trucks, and at least a dozen other sources over the next few years before reliable air quality modeling can be conducted to simulate the weekend effect and to isolate its causes.

The goal of this report is to serve as a compendium of the Ozone Weekend Effect in California by referencing previous and current research efforts. A final objective of this report is to recommend the path of future research efforts based on what is learned from the past and present research efforts. Ultimately, the goal of the research is to clearly identify the pertinent factors contributing to the Weekend Effect and to examine the implications of these factors on ARB's pollutant mitigation strategies.