8 Overview of Current Non-ARB Research Efforts

8.2 Data Analysis for a Better Understanding of the Weekday/Weekend O₃ and PM Differences - Atmospheric and Environmental Research, Inc. for the Coordinating Research Council

8.2.1 Summary of workplan

Objectives:
At 3 urban locations outside CA, study the day-of-the-week dependence of:
- diurnal profile of hourly O₃ concentrations
- daily maximum 1-hour and 8-hour O₃
- PM10 and PM2.5

Test hypotheses for the “weekend effect”
- Identify changes in the weekday/weekend difference over a longer period

Hypothesis Testing:
1. Changes in emissions of NOₓ and VOC
   - Hourly NOₓ, VOC, VOC/NOₓ from SLAMS/NAMS
   - Photochemical indicators from PAMS and special field studies

2. Increased carryover due to Friday and Saturday night traffic
   - Hourly CO, NOₓ from SLAMS/NAMS

3. Changes in traffic patterns: temporal
   - Hourly CO, NOₓ, VOC, and NOₓ/VOC
   - Composition of VOC mixture from PAMS

4. Changes in traffic patterns: spatial
   - CO, NOₓ, and VOC at several metropolitan monitors
   - Maps to display patterns

5. Sources other than on-road mobile sources
   - Speciated VOC and PM data from PAMS and IMPROVE
   - Marker species
June 30, 2003

6. Changes in PM emissions affect light extinction and photochemistry
   Solar/UV radiation and PM from NAMS/SLAMS, PAMS, and IMPROVE
   Visibility from NOAA data base

8.2.2 Final report (completed June 2001 under Coordinating Research Council,
   Contract No. A-36B) available at:
   http://www.arb.ca.gov/aqd/weekendeffect/weekendeffect.htm