Weekday/Weekend Ozone in the SoCAB: Supplemental Data Collection for Emissions Activities

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Weekend Effect Workgroup
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Project Sponsor

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Emissions Activity Tasks

• Regional Data Collection (discussed previously)
  • Caltrans weight-in-motion (WIM) data
  • Major point source activity data
  • Surface street vehicle activity data
  • Area source activity data
  • Off-road mobile activity data
Emissions Activity Tasks

• Local Data Collection (newly added tasks)
  • Within 2 to 5 km of five surface AQ sites
  • Ground-truth surveys (2- x 2-km area)
  • Friday/Saturday site visits (2- x 2-km area)
  • Traffic counts (2-km radius)
  • Telephone surveys of homes, small businesses, and large facilities (2- to 5-km radius)
• Aerial photography (5-km radius)
Monitoring Sites

- Weight-in-motion (WIM) sensors
- AQ monitoring sites
LA North Main Site (5-km radius)

- Gasoline Service Stations
- Restaurants/Bakeries
- Dry Cleaning Facilities
- Existing or Previously Existing Traffic Count Site
- Automotive Repair Shops

2- x 2-km square
2-km radius
Ground Truth Surveys

Step 1. LEADS control panel.

Step 2. Add objects to electronic map.
Ground Truth Surveys

Step 3. Add descriptive information.

[Image of a software window showing fields for ID, Survey Date, Name, Type, Description, Comment, with values filled in: ID: 22, Survey Date: 2/7/00 1:38 PM, Name: Redwood Business, Type: Industrial Park, Description: Light Industry Commercial Mix, Comment: Regular business hours M-F]
Friday/Saturday Site Visits

- Assign a field observer to spend two days in the vicinity of each monitoring site
Traffic Counts

• Within 3 km of each monitoring site, deploy:
  • Two total traffic counters (one arterial/collector and one local road)
  • One vehicle-class counter (collocated with a total counter)
• Collect traffic counts for a period of 10 consecutive days (two weekends and one workweek).
Traffic Counts

Vehicle classifications

- Motorcycles
- Passenger cars
- Other 2-axle, 4-tire, single-unit vehicles
- Standard size 2-axle buses
- Single-unit trucks
  - 2-axle with six tires, 3-axle, ≥4-axle
- Single-trailer trucks
  - ≤4-axle, 5-axle, ≥6-axle
- Multi-trailer trucks
  - ≤5-axle, 6-axle, ≥7-axle
Telephone Surveys

Homes and small businesses selected within 2 km of the monitoring sites

- Query about recent past, current, and immediate future activities.
- Example: Are you planning to do one of the following in the next couple of days? (Painting, yardwork, home improvements, etc.)
Telephone Surveys

All point sources within 5 km of monitoring sites

• Query about operating schedules:
  (1) What is the typical schedule? (2) What is the schedule for the period concurrent with the NREL study?

• Supplement with site visits, if needed.
Aerial Photography

- Acquire at different zoom levels
- Organize and Index
- Import to GIS
- Overlay points of interest
- Export as graphic objects
Data Summary and Analysis

- Document, QA, summarize
- Perform statistical and qualitative analyses of differences between weekend and weekday activity patterns
- Include with Project Final Report

\[(a + b)^2 = a^2 + 2ab + b^2\]