Southern California Association of Governments
Regional Screenline Count Database

Modeling Task Force
March 26, 2014
AGENDA

• Overview & Approach
• Data Collected
• Technology
• Database
• Analysis
Project Overview
PROJECT OVERVIEW

• Extensive Count Coverage
  – 35 Screenlines (one new)
  – Regional Cordon locations
  – Freight cordons and cut-lines

• 606 Counts on Arterials
  – Vehicle Classification Data
  – 24 or 48 Hours

• 34 Freeway Vehicle Classification Counts
  – Extensive PeMS Coverage

• Final Dataset
  – Ready for use in SCAG’s next model validation exercise
• Data Collection Timeframe
  – Collect on Tuesday / Wednesday / Thursday
  – Avoid major universities on Spring Break
    (no counts within 5 miles)
  – Majority of data collected in Spring and Fall of 2013
  – Some locations collected in Spring 2014
    • Caltrans permitting
    • Additional Locations
    • Re-counts
    • Construction Avoidance
SCREENLINE COUNT LOCATIONS - Arterials and Collectors

Legend
Type of Count Location
- State Highways
- Non-State Arterials
- Screenlines
- Counties
Count Locations by Duration of Count

Legend
Days of Count
- Black: Factored 2008 Count
- Cyan: 1 Day Counts
- Green: 2 Day Counts
- Purple: Screenlines
- Counties
Count Locations by Duration of Count (Inset)
Technology
Technology

• Tube Counters
  – Most Surface Streets
  – 13 Vehicle Classifications
  – Industry Standard

• Radar
  – Uncongested Freeways

• Video
  – Congested Freeways
Technology

• Video Classification Counts
  – 26 Locations
  – 260 Hours of Video
  – Do we really want to make someone watch it all?

• Software Video Analysis
  – Software counts vehicles by class
  – Checked by humans
    • Software “loses” a vehicle
    • QA/QC Checks on 12% of footage
    • Check for overall pattern anomalies
**Data Accuracy Comparison**

**Evaluation of Non-Intrusive Technologies for Traffic Detection**

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Tested in urban traffic conditions, varying weather and lighting conditions. Volume and Classification accuracy was independently manually verified with video review on highway, and compared with a manually counted video baseline at the intersection.
Technology

Telescoping Arm
Technology

- 5-Lane Location on I-710 South of SH 60
  - Screenline 16

Vehicle entry points defined and paths drawn for each lane of travel and submitted for video processing.
Database and Analysis
Available Data

- Complete Database linked to the Roadway Network
  - Vehicle classification
  - 15-minute increments
Available Data

• Exportable Queries
  – 24-Hour Counts
  – Time period
    • AM, MD, PM, NT, OP
  – Assignment class
    • Autos, LHDT, MHDT, HHDT

• Customizable
  – Flexible time periods and vehicle class groups
### Available Data

- Writes results to Excel
  - Load into TransCAD
  - Analyze directly in Excel

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Diurnal curve for all counted locations
Time of Day

The graph shows the percent traffic volume throughout the day for different categories:

1. West Riverside
2. Central Riverside
3. Rural
4. Orange County
5. Urban San Bernardino
6. Los Angeles County
7. Urban Ventura County
8. Imperial County

The data is represented over different time intervals, with peaks and troughs indicating higher or lower traffic volumes at specific times.
Change from 2008 to 2012

• Little or no traffic growth on average
  – 43% of locations increased
  – 57% of locations decreased
  – Overall growth rate of -0.7%
    (-0.1% compounded annually)

• 2012 data collection uses more consistent
data collection than the 2008 database
Change from 2008 to 2012

Individual Count Locations

Change from 2008 to 2012

Totals by Screenline

Percent Growth (2008 - 2013)

Total Screenline Traffic Counts (2013)
Change from 2008 to 2012

Legend
Traffic Volume Change (2008 - 2013)
- Decrease by more than 25%
- Within 25%
- Increase by more than 25%
- Screenlines
- Counties
Change from 2008 to 2012

Legend
Traffic Volume Change (2008 - 2013)
- Blue: Decrease by more than 25%
- Gray: Within 25%
- Red: Increase by more than 25%
- Purple: Screenlines
- Counties
Annual Adjustments

- Data collected in 2013 and 2014
  – Adjustment to represent Spring of 2012?

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Source: Caltrans Weigh in Motion (WIM) data for April, autos only.

* 2012-2013 growth rates includes some 2- and 3- year rates

DRAFT: Analysis of additional locations is underway
Seasonal Adjustments

• Seasonal
  – All counts collected during spring and fall
  – A small number of counts collected during Feb-April 2014
    • Lower port activity → Less truck activity?
  – Counts should represent an Annual Average Weekday
Seasonal Auto Patterns

Source: Caltrans Weigh in Motion (WIM) data from 2008-2013
Seasonal Truck Patterns

Source: Caltrans Weigh in Motion (WIM) data from 2008-2013
Seasonal & Annual Truck Patterns

Port Throughput: Down about 1.5% from 2008

Source: San Pedro Bay Ports
Conclusions

• A new 2012 traffic count database will be used in 2012 base year model validation
• Individual traffic counts vary substantially over time
• Screenline totals are fairly stable over time
• Regional screenline volume growth has been limited or non-existent from 2008 through 2012
Questions?