Western Traffic Data
Successful Strategies in Data Collection for Corridors and Planning

April 10–11, 2008

Arnold and Mabel Beckman Center of the National Academies
Irvine, California

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Workshop Planning Team

Joe Avis, Chief, Traffic Data and Photolog Branch, California Department of Transportation, Chair
Mike Calandra, Senior Research Analyst, San Diego Association of Governments
Rick Curry, Senior Transportation Modeler, San Diego Association of Governments
Fred Dial, Office Chief, System Management Planning, California Department of Transportation
Brian Domsic, HPMS Chief, California Department of Transportation
Alex Estrella, Senior Transportation Planner, San Diego Association of Governments
Glenda Fuller, Roadway Data Manager, Idaho Transportation Department
Dave Gardner, NATMEC Chair, Ohio Department of Transportation
Ralph Gillmann, Federal Highway Administration
Steve Hague, Transportation Modeler, Traffic Operations, California Department of Transportation
Jay Kim, City of Los Angeles Department of Transportation
John Rosen, Highway Usage Branch Manager, Washington State Department of Transportation
Henry J. Salvatori, Oregon Department of Transportation
Anita Vandervalk, Director, Florida Operations, Cambridge Systematics, Inc.

TRB Staff
Thomas Palmerlee
David Floyd
Julie Miller
A Regional Dialogue on Successes and Challenges

This workshop is for data producers and data users to hold an interactive forum for the exchange knowledge about successful strategies in the collection and the analysis of traffic data.

The workshop objectives are to

- Develop a regional dialogue among data producers and users on successful strategies in the collection and the analysis of traffic data—specifically, to encourage the approach of “collect once, use many times”;
- Compare and contrast approaches and techniques for traffic data collection and understand potential benefits from the use of new technologies;
- Understand how data quality influences data usability, especially for corridor management and other key planning uses;
- Explore cooperative arrangements among regional states and state-and-local partnerships for building better traffic data sets; and
- Understand the data requirements for corridor management.

I encourage each of you to participate, discussing the successes and challenges you have experienced in collecting and analyzing traffic data. We hope this event is an initial step toward a continuing dialogue within the region.

—Joe Avis

Workshop Planning Team Chair
Chief, Traffic Data and Photolog Branch
California Department of Transportation
Workshop Program

THURSDAY, APRIL 10

7:00 a.m.–8:20 a.m.
Buses from the Hyatt Regency to the Beckman Center
(First shuttle leaves at 7:00 a.m. and returns approximately 40 minutes later.)

8:00 a.m.–9:00 a.m., Beckman Center, Dining Room
Breakfast

9:00 a.m.–9:30 a.m., Auditorium
Opening Session

Welcome to California
Randell Iwasaki, Chief Deputy Director, California Department of Transportation

Directions in Traffic Data Collection to Meet Corridor Management Requirements
John Wolf, California Department of Transportation

Workshop Objectives and Structure
Joe Avis, California Department of Transportation and Workshop Planning Team Chair

9:30 a.m.–10:30 a.m., Auditorium
Assembling Quality Traffic Data
Anita Vandervalk, Cambridge Systematics, Inc.
Jay Kim, City of Los Angeles Department of Transportation

This session will define traffic data quality, provide some examples of experiences and documentation pertaining to traffic data quality, and generate ideas for further exploration in the breakout session. Jay Kim will provide a high-level presentation from a local traffic data user’s perspective regarding why data quality is important and relevant in today’s transportation environment. He will touch on some of the trends facing transportation professionals, including congestion, safety needs, real-time data availability, and private data sources. Jay will explore how these trends relate to the need for better data integration, partnerships, sharing, and quality. Anita Vandervalk will provide examples of data quality definitions from AASHTO guidelines and the new Caltrans guidelines. She also will provide practical examples of success in defining and ensuring quality in traffic data programs. Finally, she will present some challenges and issues for the breakout groups to ponder.

10:30 a.m.–11:00 a.m.
Break

11:00 a.m.–12:30 p.m.
Breakout Sessions (See floor plan, page 11, for room locations)
Assembling Quality Traffic Data

Group Leaders #1: Huntington
Henry J. Salvatori, Oregon Department of Transportation
Harshad Desai, Federal Highway Administration
Discussion Questions
1. What are the different sources for traffic data?
2. Who are the primary partners for sharing traffic data?
3. What are the barriers that exist today for collecting traffic data from other sources?
   a. How are different data formats handled?
   b. Who develops and affirms the data quality from the different sources?
   c. What type of system(s) accumulate the data?
   d. How can the other customers gain access?
4. What are the current traffic data gaps?
   a. What methods of imputation have been developed and employed?
   b. How are the metadata communicated?
   c. Are the traffic data gaps affecting the quality of corridor management plans?
   d. Who has successfully deployed automated editing?

12:30 p.m.–1:30 p.m., Dining Room
Lunch

1:30 p.m.–2:30 p.m., Auditorium
Data for Performance Measures
Tarek Hatata, System Metrics Group
Alex Estrella, SANDAG
Mark Hallenbeck, Transportation Research Center (TRAC), University of Washington

Reliable data are essential to any system of performance measurement. As measures are developed, the challenge to policy makers and managers is to gather and analyze data in a way that provides timely and accurate information on whether they are consistently meeting their strategic goals. This session will address the data collection issues of cost, availability, and quality when deciding which performance measure to use. The session will offer an opportunity to examine and share information about ongoing program(s) and project(s) that emphasize the assessing, analyzing, and reporting of performance measures. The presentations will highlight data collection as a key component for assessing, monitoring, and tracking the effects and impacts of transportation project investments over time, across modes, and through a system management approach.
2:30 p.m.–3:00 p.m.
Break

3:00 p.m.–4:30 p.m.
Breakout Sessions
Data for Performance Measures
Same breakout group leaders and same rooms as for Assembling Quality Traffic Data (see pages 4-5)

Discussion Questions
1. What types of performance measurements are we trying to meet?
   a. Accuracy, completeness, validity, timeliness, coverage, and accessibility—how are these data quality measures defined and measured?
   b. What is the user’s confidence in modeled data?
   c. Corridor management plan needs:
      - What is the performance in the plan and how is it measured?
   d. Congestion management needs:
      - Traffic operations (flow, occupancy)—how are they measured?
2. Who are the customers of the data and what are their needs/expectations?
   a. What level of granularity do the data need to be collected by units of time and/or direction (20 seconds, 1 hour, 1 day, or lane detail, directional, or both ways)?
   b. Is vehicle classification important to the customers?
   c. What different sources of data are needed and who is responsible for collecting and reporting (principal and arterials/National Highway System, Interstate, other freeways and expressways, minor arterial, collector, local, tribal), by urban and rural?

4:30 p.m.–5:15 p.m., Auditorium
Key Points from Assembling Quality Traffic Data
Summary reports by breakout session topic leaders, Anita Vandervalk and Jay Kim

5:15 p.m.–7:00 p.m., Atrium
Posters and Reception

Applying Arterial Count Station Points to Your Link-Based Travel Demand Model Network, Mike Calandra, San Diego Association of Governments

San Diego Region Average Daily Traffic, Rick Curry, San Diego Association of Governments

Improving Traffic Data Collection Using Wireless Technology, Clint Gregory, California Department of Transportation

East Bay: An Automatic Method for Imputing and Balancing Link Traffic Counts, Rob Hranac, Berkeley Transportation Systems, Inc.

Integrating Count Data and Detector Data, Rob Hranac, Berkeley Transportation Systems, Inc.

Traffic Data Fusion, Rob Hranac, Berkeley Transportation Systems, Inc.

Performance Measurements for City of Los Angeles Arterials, Jay Kim, Los Angeles Department of Transportation

San Diego Region Transit Flow Map: Real Versus Estimated Volumes, Tom King, San Diego Association of Governments
Visualizing the Long-Range Health of Rural Recreational and Agricultural Corridors, William R. Loudon, DKS Associates

Developing Integrated Traffic Data System for Corridor Management and Operation, Xiao-Yun Lu, California PATH, University of California, Berkeley

California’s Weigh-in-Motion Data Validation Procedure, Mitchell Prevost, California Department of Transportation


Junction Analysis, Henry J. Salvatori, Oregon Department of Transportation

Video Traffic Recording Program, Henry J. Salvatori, Oregon Department of Transportation

How Raw Data Turns into Construction Specs in Oregon, Smith Siromaskul, Oregon Bridge Delivery Partners

Commercial Vehicle Classification System Using Advanced Inductive Loop Technology, Andre Tok, University of California, Irvine

6:30 p.m.–7:50 p.m.
Buses return to Hyatt Regency
(First shuttle leaves at 6:30 p.m. and returns approximately 40 minutes later.)

7:00 p.m.–8:00 p.m., Board Room
Workshop Planning Team Review of the Day (by invitation)

North American Freight Flows
Understanding Changes and Improving Data Sources
September 22–23, 2008
Arnold and Mabel Beckman Center of the National Academies
Irvine, California

Organized by
Transportation Research Board

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Federal Motor Carrier Safety Administration
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Transport Canada
Secretaría de Comunicaciones y Transportes, Mexico

www.TRB.org/conferences/2008/BorderData
FRIDAY, APRIL 11

7:00 a.m.–8:20 a.m.
Buses from the Hyatt Regency to the Beckman Center
(First shuttle leaves at 7:00 a.m. and returns approximately 40 minutes later.)

7:30 a.m.–8:30 a.m., Dining Room
Breakfast

8:30 a.m.–9:30 a.m., Auditorium
Emerging Technologies for Traffic Data
David Gardner, Ohio Department of Transportation
Mike Calandra, San Diego Association of Governments
Mark Hallenbeck, Transportation Research Center, University of Washington

New data requirements for Highway Performance System Monitoring and Corridor Management Plans have created a burden for traffic data collectors. The requirements necessitate the deployment of new technologies for collection and processing. The emerging technologies for collecting and processing traffic data for operations and planning will be discussed. Emphasis will be on nonintrusive detection for counting, innovative installation methods, length-based vehicle classification, data mining, and visualization.

9:30 a.m.–10:00 a.m.
Break

10:00 a.m.–11:30 a.m.
Breakout Sessions
Emerging Technologies for Traffic Data
Same breakout group leaders and rooms as for Assembling Quality Traffic Data (see pages 4-5)

Discussion Questions
1. What are some of the newer technologies tried?
   a. What are some of the latest technology counters and sensors tested?
   b. What types of new equipment have been used to poll/collect the traffic data?
   c. What are some of the advances in technology for database development and reporting?
   d. What advances have been made in accessibility of the traffic data and presenting (visualization)?
   e. What worked and what did not work?
   f. What are some of the limitations of the tested technologies? Are we limited in where a sensor can be placed? How time-consuming is it to install and monitor?

2. How well do the new technologies support the assembly of quality traffic data and the performance measurements used to evaluate transportation system performance?

11:30 a.m.–12:30 p.m., Dining Room
Lunch

12:30 p.m.–1:30 p.m., Auditorium
Key Points from the Breakouts

Data for Performance Measures
Tarek Hatata, System Metrics Group
Alex Estrella, San Diego Association of Governments
Mark Hallenbeck, Transportation Research Center, University of Washington
Emerging Technologies for Traffic Data
David Gardner, Ohio Department of Transportation
Mike Calandra, San Diego Association of Governments

1:30 p.m.–2:30 p.m., Auditorium
Priority Issues and Actions for the Western Traffic Data Community
Joe Avis, moderator

Workshop participants will discuss priorities for near-term action, suggest implementation strategies, and propose initiatives to continue technical coordination in the region.

2:30 p.m.–3:20 p.m.
Buses to John Wayne–Orange County Airport and Hyatt Regency
(First shuttle leaves at 2:30 p.m. and returns approximately 1 hour later.)

2:30 p.m.–3:30 p.m., Board Room
Workshop Planning Team Review of the Workshop (by invitation)
Exhibitors

Chaparral Systems Corporation
L. J. Wilkinson, President
369 Montezuma, PMB 746
Santa Fe, New Mexico 87501
505-438-7353
lj@chapsys.com
www.chapsys.com

Control Specialists Company
Robb Bingham, Sales Director
707 Nicolet Avenue, Suite 100
Winter Park, Florida 32789
407-628-1965; fax 407-628-1932
sales@controlspecialists.com
www.controlspecialists.com

ECM Inc.
Ronald White, Vice President
464 Commercial Drive
Buda, Texas 78610
512-295-9752; fax 512-295-9753
info@ecmusa.com
www.ecmusa.com

Infotek Associates
Mike Poursartip, President
333 Hegenberger Road,
Suite 388
Oakland, California 94621
530-742-1198; fax 530-742-4755
shirley@infotekwireless.com
www.infotekassociates.com

Miovision
Corry Flatt, Product Marketing Manager
295 Hagey Boulevard
Waterloo, Ontario N2L 6R5
Canada
519-513-2407
cflatt@miovision.com
www.miovision.com

PTV America, Inc.
Cassandra Rugh, Admin.
Manager
1128 NE 2nd Street, Suite 204
Corvallis, Oregon 97330
541-754-6836
crugh@ptvamerica.com
www.ptvamerica.com

Sensys Networks
Hamed Benouar, Vice President
2560 9th Street, Suite 219
Berkeley, California 94710
510-499-1151
benouar@sensysnetworks.com
www.sensysnetworks.com

Southern Traffic Services, Inc.
Carolyn Thornton, Marketing Director
2911 Westfield Road, Suite 220
Gulf Breeze, Florida 32563
601-854-8898; fax 601-854-8896
cthorton@netdoor.com
www.southerntrafficservices.com

TimeMark Incorporated
Daniel Gossack, President
PO Box 12947
Salem, Oregon 97309
503-363-2012; fax 916-772-4706
danielg@timemarkinc.com
www.TimeMarkInc.com

Wavetronix
Steven Baxter, Marketing Director
380 S. Technology Court
Lindon, Utah 84042
801-443-3900
steve_baxter@wavetronix.com
www.wavetronix.com
Hotel Information

Hyatt Regency Newport Beach
Newport Beach, CA 92660
Phone: 949-729-1234

Hotel–Airport Shuttle
A complimentary shuttle bus runs to and from John Wayne–Orange County Airport, 6:00 a.m.–10:00 p.m. The shuttle leaves the hotel every hour on the hour and picks up at the airport at approximately 15 minutes past the hour, outside the baggage claim in the ground transportation area.

Beckman Center
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Beckman Center Floor Plan