Innovations in Freight Data Workshop

May 17-18, 2017
Arnold and Mabel Beckman Conference Center
100 Academy Way
Irvine, California 92617

Organized by
Transportation Research Board

Supported by
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Freight Management and Operations

www.trb.org/conferences/freightdata2017.aspx
The 2017 Innovations in Freight Data Workshop will bring together freight data users and decision makers to learn and share the latest applications of emerging “big” freight data sources to improve freight planning, freight operations and mobility, and freight visualization. The event will convene traditional freight planning stakeholders, as well as data and technology innovators from related areas whose expertise can be leveraged to advance the state-of-the-practice. We invite you to join the dialogue with practitioners sharing their state-of-the-art applications and researchers working at the cutting edge to develop next generation data applications and analysis tools.

— Alison Conway, Planning Committee Chair
City College of New York

Planning Committee

Alison Conway, City College of New York, Chair
Donald Ludlow, CPCS Transcom, Vice Chair
Chandra Bondzie, Federal Highway Administration
Scott Drumm, Port of Portland
Kathleen Hancock, Virginia Tech
Sherif Ishak, Louisiana State University
Nikola Ivanov, CATT Laboratory
Vince Mantero, Federal Highway Administration
Dan Morgan, U.S. Department of Transportation
Michael Sprung, Bureau of Transportation Statistics
Rahul Srivastava, California Department of Transportation

TRB Staff

Thomas M. Palmerlee, Assistant Division Director
Michael Miller, Associate Program Officer
Tuesday, May 16, 2017

Committee meetings open to all workshop registrants unless noted.

8:00 a.m.–9:45 a.m., Crystal Cove
Agricultural Transportation Committee (AT030)
Caroline Mays, Texas Department of Transportation, presiding

8:00 a.m.–9:45 a.m., Balboa Room
Freight Transportation Planning and Logistics Committee (AT015)
Matthew Roorda, University of Toronto, presiding

8:00 a.m.–9:45 a.m., Newport Room
Task Force on Understanding Big Data in Freight Transportation (ABJ92T)
Donald Ludlow, CPCS Transcom, presiding

9:45 a.m.–10:15 a.m., Atrium
Break

10:00 a.m.–Noon, Huntington Room
Intermodal Freight Transport Committee (AT045)
Richard Easley, E-Squared Engineering, presiding

Noon–1:00 p.m., Dining Room
Lunch

1:00 p.m.–2:45 p.m., Huntington Room
Freight Transportation Data Committee (ABJ90)
Donald Ludlow, CPCS Transcom, presiding

2:45 p.m.–3:15 p.m., Atrium
Break

3:15 p.m.–5:00 p.m., Balboa Room
Urban Freight Transportation Committee (AT025)
Bill Eisele, Texas A&M Transportation Institute, presiding

3:15 p.m.–5:00 p.m., Huntington Room
International Trade and Transport Committee (AT020), Ports & Channels Committee (AW010), and Intermodal Freight Terminal Design and Operations Committee (AT050)
Juan Carlos Villa, Texas A&M Transportation Institute; Mihalis Gkolias, University of Memphis; Nathan Huynh, University of South Carolina, presiding

3:15 p.m.–5:00 p.m., Laguna Room
Transportation and Economic Development Committee (ADD10)
Sharada Vadali, Texas A&M Transportation Institute, presiding

3:15 p.m.–5:00 p.m., Board Room
Trucking Industry Research Committee (AT060)
Kristen Monaco, Bureau of Labor Statistics, presiding

7:00 a.m.–5:00 p.m., Outside Auditorium
Registration
7:00 a.m.–8:00 a.m., Dining Room
Breakfast
The Importance of Innovations in Freight Data for California

Kome Ajise, Chief Deputy Director at the California Department of Transportation (Caltrans)

Governor Brown directed relevant State departments to develop an integrated action plan that establishes clear targets to improve freight efficiency, transition to zero-emission technologies, and increase competitiveness of California's freight system. California's complex freight transportation system is responsible for one-third of the State's economy and jobs, with freight-dependent industries accounting for over $700 billion in revenue and millions of jobs. Innovation in freight data analytics will provide much needed support for many years to come. The participating departments were ordered to initiate work on corridor-level freight pilot projects that integrate advanced technologies, alternative fuels, freight and fuel infrastructure, and local economic development opportunities. Ajise will overview data challenges in meeting these broad initiatives, describe data initiatives undertaken by CalTrans in meeting and further challenge the workshop to improve the freight data practice.
Practitioners are capturing and applying data from sensors, telematics devices, and imagery to close data gaps. This panel will present emerging technologies for data collection and application.

**Integrated Freight Survey, Shipment Tracking, and Vehicle Tracking**
Fang Zhao, MIT

**Using Satellite Radiometry to Develop Data for Models**
Hector Guillermo Lopez Ruiz, KASPARC

**Classifying California Truck Activity Using Loop Sensors**
Andre Tok, UC Irvine

10:40 a.m.–Noon, Auditorium

Panel 2: Technologies for Monitoring, Tracking, and Data Collection
Donald Ludlow, CPCS Transcom, presiding
Yatman Kwan, Caltrans, recording

1:15 p.m.–2:30 p.m., Auditorium

Advances in GPS Applications Speed Round
Nikola Ivanov, CATT Laboratory, presiding

Truck GPS data has become state of the practice for many transportation agencies in providing information on truck routing and reliability. Through speed presentations, this session reveals some of the next-generation applications of truck GPS data.

**Validating Florida Freight Model with Truck GPS**
Kaveh Shabani, RSG

**Identifying and Ranking Texas’ Most Congested Truck Segments**
Bill Eisele, TTI

**Path-Based Freight Reliability Using GPS**
Mike Golias, University of Memphis

**Development and Applications of Vehicle Trajectories**
Sarah Hernandez, Veitch Lister

**ATRI Freight Performance Measures Database**
Dan Murray, ATRI

Questions and Answers

2:30 p.m.–2:45 p.m., Atrium

Break

2:45 p.m.–4:00 p.m., Auditorium

Presentation of Awards and Demonstration of Applications

Awards are given submissions to the workshop “Call for Applications” focusing on new data sources and data fusion applications. Winners will be announced on site.

**Award Announcement for Best New Data Source Application**
Michael Sprung, BTS

**Award Announcement for Best Data Fusion Application**
Rahul Srivastava, CalTrans

Best New Data Source Application Presentation
Best New Data Fusion Application Presentation

2017 Innovations in Freight Data Workshop
Interactive Poster Session and Reception
Fatemeh Ranaiefar, Fehr and Peers, presiding

Presenters will utilize large flat-screens to interactively demonstrate innovative freight data applications, many of which combine multiple data sources, technologies (e.g. GPS, Bluetooth).

Port Drayage Mobile Applications
Taso Zografos, ZDEVCO; Dan Smith, Tioga

Philly Freight Finder
Michael Ruane, DVRPC

Emerging Truck Data Collection Technologies from NCFRP 49
D. Ludlow and V. Sakhrani, CPCS

Estimating Logistics Activity Potential
Seckin Ozkul, University of South Florida, CUTR

State-Level WIM Data Tool
Zubair F. Ghafoor, CDM Smith

ITTS Regional Freight Data Platform
Bruce Lambert, ITTS

SRF Mapper and SRF Simulator
Justin Bishop, University of Cambridge, UK

Thursday, May 18, 2017

7:00 a.m.–10:00 a.m., OutsideAuditorium
Registration

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

8:30 a.m.–8:40 a.m., Auditorium
Welcome and Overview of Day Two
Alison Conway, Assistant Professor, City College of New York

8:40 a.m.–9:45 a.m., Auditorium
Panel 3: Data Collection and Use Challenges–Observations from the Field
Bill Eisele, Texas A&M Transportation Institute, presiding
Rahul Srivastava, Caltrans, recording

Transportation asset owners will present their approaches to advanced freight data collection and in the challenges of instrumenting and automating to capture and utilize freight data streams.

Approaches to Monitor Truck Loading Activity in New York City
Nicola Mammes, New York City Department of Transportation

Real Based Data in Real Time: the Key Enabler of a Paradigm Shift in Transportation and Traffic
Magnus Swahn, Conlogic

Facilitated Discussion of Freight Data Collection and Use Challenges (focused on new data sources and technologies)
Panel 4: Big Data Analytics, Supply Chains, and Artificial Intelligence
Scott Drumm, Port of Portland, *presiding*
Donald Ludlow, CPCS Transcom, *recording*

Supply chain practitioners, technology firms, and cities are developing innovative ways of applying big data to improve operations, safety, and strategic objectives. This panel introduces innovations with potential application to freight data development.

**Application of Analytics on the Edge by Running SAS Event Stream Processing on Connected Trucks**
Katy Salamati, SAS

**Video Analytics to Classify Movements and Vehicles**
Yinhai Wang, PacTrans

**Trusted Data Collaboratives to Benefit Cities**
Bill Mitchel and Connie Fan, Microsoft

**Instrumented Truck Data Sources: Outdoor Session**

1:15 p.m.–3:00 p.m., *Newport Room, Balboa Room, Board Room, and Hungtington Room*

In breakout groups, participants will discuss and synthesize workshop findings and identify most promising findings, gaps, and next steps. Each breakout group will address the following questions and report findings back to the group.

- Question 1 – What new data sources have we learned about?
- Question 2 – Which areas of freight data analysis seem most promising?
- Question 3 – Which gaps have we addressed; what gaps remain?

**Closing Session**
Alison Conway, Assistant Professor, City College of New York, *presiding*

Breakout session leaders will present findings to summarize lessons learned on new data sources, promising new applications, remaining data gaps, and next steps to address these remaining gaps.
Hotel Information
Hyatt Regency Newport Beach
1107 Jamboree Road
Newport Beach, California 92660
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SAVE THE DATE
Freight Fluidity Workshop
March 29–30, 2018
Keck Center, Washington DC