N aTMEC - 2018

NATIONAL TRAVEL MONITORING
EXPOSITION AND CONFERENCE
IRVINE, CALIFORNIA
JUNE 10 -13, 2018

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Office of Highway Policy Information, FHWA
1200 New Jersey Avenue, SE
Washington, DC 20590
Congratulations Professor Ritchie!
Dr. Stephen Ritchie, Prime Co-Chair, USC
Congratulations Steven!
Steven Jessberger, Co-Chair, FHWA
Congratulations to Our Planning Committee Members!

Scott Brady, MS, MCP, Delaware Valley Regional Planning Commission (DVRPC)
Robert Bryson, ASCE - Transportation and Development Institute (T&DI)
Sowmya Chandrasekhar, PE, TE, PTOE, ITERIS, Institute of Transportation Engineers (ITE)
Tennille J. Haberman, California Department of Transportation (Caltrans)
Steven Jessberger (co-chair), FHWA
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William Morgan, PMP, Illinois Department of Transportation (IDOT)
Vidya Mysore, FHWA
Andrew Nichols, Private
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Stephen Ritchie, Prime Co-Chairman, University of California (UCI)
Liz Stolz, Private
Penelope Weinberger, American Association of State Highway Transportation Officials (AASHTO)
Yao-Jan Wu, University of Arizona (UA)
Patrick Zhang, FHWA
Congratulations Victoria!

Dr. Victoria Deguzman
2018 NaTMEC Organizer
and Lead

Pacific Southwest Region
University Transportation Center
Many Thanks to Our Vendor and Technology Community!
Many Thanks to All of Our Participants!
Summary
• Traffic data – collection
• Traffic data – sources and processing methods
• Traffic data – application
• Vendor and Service Provider Community

FHWA’s traffic monitoring program
A few statistics and illustrations
NaTMEC2020
Traffic Data - Collection

✓ Weigh-in-Motion Experience and Innovation (Monday)
✓ Weight-in-Motion Calibration and Accuracy (Monday)
✓ Loop and Weight-in-Motion Program Tools (Monday)
✓ Non-traditional Methods in Obtaining Traffic Data (Tuesday)
✓ Obtaining Traffic Data from Video (Tuesday)
✓ Estimating Traffic Counts from Video at Intersections (Tuesday)
✓ Estimating Traffic Counts from GPS-based Mobile Device Samples (Wednesday)
✓ Enhanced Classification of Vehicles (Tuesday)
✓ Nonmotorized Portable Counts and Nonmotorized Counting Program (Tuesday)
✓ Enhancing Traditional Sensors to Measures More (Tuesday)
✓ Innovation in Guide and Field Operations Management (Tuesday)
✓ Detection of Nonmotorized Travel and Discussion (Tuesday)
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Keywords:
- Origin-destination
- Turning-movement
- GPS-based-mobile-device
- Inductive-Loop-Signature
- Non-traditional
- NPMRDS
- CCTV
- Big-data
- Video
- Wi-fi-signal
- Regional
- Non-motorized
- State-wide
- Length-based
- NorSIKT
- Intersections
- Beyond-roadside-counters
- Short-duration-attribution
- Automatic-Bike-Ped
- Machine-learning
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Participants:
- Dean-Wolf
- Stanley-Young
- Olga-Selezneva
- Marian-Mithani
- Rahul-Jain
- Michael-Pack
- Yiqiao-Li
- Mark-Hallenbeck
- Matt-Duench
- David-Sedath
- Krista-Nordback
- Yao-Jan-Wu
- Scott-Brady
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- Kaveh-Sadabadi
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- Arthur-Penn
- Steven-Bentz
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- Laura-Schewel
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- Zachary-Vander-Laan
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- Maximilian-Franz-Böhm
- Sean-Diehl
- Martin-Guttenplan
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- Amin-Ariannezhad
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- Joni-Sharp
- Michael-Miller
- Chris-Vaughan
- Xiaodong-Qian
- Giuseppe-Grande
- Julia-Griswold
- James-Whitley
- Erik-Minge
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Institute for Transportation Research & Education
National Renewable Energy Laboratory
Pacific-Southwest Region-UTC
SRF Consulting Group
Portland State University
Traffic Engineering Research Centre
Delaware Valley Regional Planning Commission
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UC Berkeley
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Illinois DOT
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Toole Design Group
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TERRA Engineering

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UC Davis
Georgia DOT

University of Arizona
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Associates

Safe Transportation Research & Education Center
University of Washington
University of North Carolina
University of Manitoba
Virginia Transportation Research Council
Texas A&M Transportation Institute
Traffic Data – sources and processing methods

• Agency Traffic Monitoring Programs (Monday)
• Data Program Adjustment (Monday)
• Tools for Improved Volume, Class and Weight Data (Monday)
• Nonmotorized Data Design and Storage (Wednesday)
• Traffic Data System Tools (Tuesday)
• Traffic Data Visualization Tools (Tuesday)
• Integrating Multiple Data Sources For Improved Decision Making (Monday)
• Modeling and Fusion of Nonmotorized Data (Tuesday)
• Improving Annual Average Daily Traffic (AADT) Estimates (Monday)
• Improving HPMS Traffic Data (Monday)
• Motorized Data Sources (Monday)
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Institutions and Organizations:
- TERRA-Engineering
- Institute-for-Transportation-Research-and-Education
- Institution-of-Transportation-Engineers
- University-of-California-Irvine
- University-of-California-Davis
- Toole-Design-Group
- University-of-Minnesota
- University-of-Colorado
- Hawaii-DOT
- StreetLight
- Idaho-DOT
- Iteris
- Virginia-Tech
- Pennsylvania-DOT
- CATT-Lab
- Disney-Studios
- Texas-A&M-Transportation-Institute
- Georgia-DOT
- SEMCOG
- Cambridge-Systematics
- University-of-Maryland
- Florida-DOT
- Norwegian-University-of-Science-and-Technology
- Korea-Institute-of-Civil-Engineering-and-Building-Technology
- AMEC-Foster-Wheeler
- Applied-Research-Associates
- International-Road-Dynamics
- University-of-Southern-California
Traffic Data – Application

• MAP-21 & Mobility Reporting (Monday)
• Truck Movement (Monday)
• Work Zone and HOT Lane Evaluation Using Probe Data (Tuesday)
• Disaster Planning, Operations Management, and Freight Impacts (Wednesday)
• Tools Used in Traffic Operations and Safety (Wednesday)
• NPMRDS, Travel Time and VHD (Monday)
• Research Exchange (Tuesday)
Traffic Data – Application

- MAP-21 & Transportation-Infrastructure
- Socially-Optimal-Personalized-Routing
- Performance-Measures
- High-Occupancy-Toll-Lanes
- Trajectory-Data-Tools
- Bottleneck Interactive-Dashboard
- Winter-Weather Long-Term-Trends
- Big-Data-Analysis Roadway-Delay
- Automated Third-Party Closure-Decisions
- Statewide-Truck-Activity-Flows
- Vehicles Flow-Prediction Rural-Highway
- Machine-Learning North-American-Truck
- Freight-Impacts NPMRDS Hurricane
- Multi-Type-Social-Based-Event-Detection
- Integrated-Control Bridge-Collapse Probe-Vehicles
- Informed-Decision-Guidance
- Transportation-Planning
- Work-Zone-Queue
- Quarterly-Congestion-Report
- Work-Zone-Safety-Mobility
- Autonomous-Vehicle-Impact
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CATT-Lab

Iteris

American-Transportation-Research-Institute

Virginia-Transportation-Research-Council
Chicago-Metro-Agency-for-Planning
Institute-for-Transportation-Research-and-Education
Albany-Visualization-and-Informatics-Labs
Texas-A&M-Transportation-Institute
University-of-Missouri-Columbia

HDR
Florida-DOT
MITRE

Orange-County
Virginia-DOT
University-of-California-Irvine
University-of-Maryland
International-Road-Dynamics
University-of-Arizona
University-of-Manitoba
Pacific-Southwest-Region-UTC
Vendor and Service Provider Community

BlueMac
Caliper Corporation
CITILABS
CLR Analytics Inc.
Control Specialists
Counting Cars
Diamond Traffic
Drakewell
DTS
Eco-Counter
High Desert Traffic
Intercomp
High Desert Traffic
Intercomp
International Road Dynamics Inc.
Iteris
JAMAR Technologies, Inc.
Kistler Instrument Corp.
Leetron Vision LLC
M.H. Corbin, LLC
MetroCount
"Mikros Systems (Pty) Ltd
(A Syntell Group Company)
Miovision
Modern Traffic Analytics
Peek Traffic Corporation
PMG
Roadsys, LLC
Southern Traffic Services
StreetLight Data
TE Connectivity
The Traffic Group, Inc.
TimeMark Incorporated
(Hi-Tek Electronics)
Traffic Cast
Transmetric
Leetron Vision LLC - a new startup utilizes AI technology for real-time count.

TrafficCast’s BlueTOAD® - Connected and Autonomous Vehicles - actionable travel time data is now distributed, shared and processed by both drivers and traffic management professionals in real time.

CLR’s VSign vehicle classification and tracking AI system enables the use of a single loop for vehicle classification, speed measurement, and vehicle tracking among counting stations, classification sites, and WIM stations.

Bluemac’s next generation device platform, multimodal performance data across any combination of Bluetooth® Classic, Bluetooth Low Energy (BLE), and Wi-Fi technologies.

Southern Traffic Services - provides comprehensive services to all modes and has partnered with many,, and look forward to continuing its great services.

RoadSys LLC’s EMU (Event Monitoring Unit) - ability to collect W.I.M. data, vehicle data (Class, Speed, Volume, Gap and Direction) as well as Bicycle data (Class, Speed, Volume, Gap and Direction) along with Pedestrians all in one box!
Vendor and Service Provider Community

**Kistler**’s subsurface quartz WIM sensor coupled with KiTraffic Statistics

**JAMAR Technologies** - the TRAX line of tube counters, the TRAX Apollyon Plus II... can record bicycles in mixed traffic and is able to stamp counts with GPS coordinates.

**M. H. Corbin, LLC’s** NC350 Traffic Analyzer with Bluetooth.

**Miovision** - DataLink Essentials ... from raw data to completion ... easy-to-use, end-to-end solution.

**Transmetric America** offers GEOCOUNTS which can handle any type of counts data such as volume, class, WIM, bike, pedestrian, and parking counts.

**International Road Dynamics (IRD)** - the VI2M (Vehicle Information in Motion) offers a suite of modules for Data Collection, Commercial Vehicle Operations, and Enterprise Level Traffic Data Monitoring and Analysis. Together with innovative products such as TACS (Tire Anomaly and Classification System) ... the future is now!

“RETHINK EVERYTHING and be sure to prepare WHEN THE WINDS OF CHANGE BLOW, ... , BUILD WINDMILLS ... , and leave this Conference thinking of how you can build windmills.” --- **the Traffic Group**
The Few Statistics

Traffic Crash Fatality

Data Sources: NHTSA FARS
The Few Statistics

Traffic Crash Fatality

Data Sources: NHTSA FARS and FHWA HPMS
Pedalcyclist Fatalities

Data Sources: NHTSA FARS
# The Few Statistics

## 2015 and 2014 VMT and VHT Growth

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<tr>
<th></th>
<th>2014</th>
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<th>% of change</th>
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<td>VMT (million miles)</td>
<td>3,025,656</td>
<td>3,095,373</td>
<td>2.30%</td>
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Data Sources: FHWA HPMS, FHWA NPMRDS and other Modeling Data
# 2015 and 2014 VMT and VHT Growth

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<td><strong>VHT (million hours)</strong></td>
<td>82,574</td>
<td>84,361</td>
<td>2.16%</td>
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Data Sources: FHWA HPMS, FHWA NPMRDS and other Modeling Data
US Urban Weekday Travel Pattern Illustration
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FHWA’s Traffic Monitoring Program - Outlook

• Continue to work on data quality and timeliness with emphasis on WIM-data
• Promote new technology and new methods through research and partnerships with industry and states
• Explore private and third party data sources, test and establish appropriate business models
• Provide pro-active technical assistances to potential federal data legislative actions
• Participate actively in connected and self-driving vehicle data discussion and actions
NaTMEC 2020
NaTMEC 2020

Shall an UTC be interested in organizing NaTMEC 2020, please email your interest to:
Steven Jessberger
Steven.Jessberger.@DOT.GOV

and

Patrick Zhang
Patrick.Zhang@DOT.GOV
Thank you!
See you all at our 2020 NaTMEC!