

Volpe's 2014 Reports

Volpe published 77 reports and conference papers in 2014 spanning a myriad of transportation research topics. These reports are housed in the National Transportation Library and are listed below by topic areas.

View the 2014 topic areas and download copies of Volpe's transportation resources. You can also search Volpe's full collection of reports, journal articles, and conference presentations and papers through the Volpe Library.



Topic Areas

Aviation – Air Traffic Control

Aviation – Economic Analysis

Aviation – Human Factors

Aviation – Unmanned Aircraft

Congestion Pricing

Cybersecurity

Energy & Environment – Aviation

Environmental Design Tool

Energy & Environment - Biofuels

Energy & Environment – Surface
Transportation

Hazard Analysis

Intelligent Transportation Systems

Motor Carrier Safety

Positioning

Railroad Safety - Crashworthiness

Railroad Safety – Grade Crossing

Railroad Safety – Safety Culture

Railroad Safety - Track

Railroad Safety – Trespass Prevention

Sustainability

Technology Transfer

Transportation Planning - General

Transportation Planning - Healthy
Communities

Transportation Planning - Public Lands

Transportation Planning -Transit

Transportation Planning – Workshops

Vehicle Miles Traveled

Vehicle-to-Vehicle Technology

Aviation – Air Traffic Control



U.S. Department of Transportation

Research and Innovative Technology Administration

John A. Volpe National Transportation Systems Center

Aviation – Air Traffic Control

[Aircraft Navigation and Surveillance Analysis for a Spherical Earth.](#)

Michael Geyer

[A New Approach to Monitoring and Alerting Congestion in Airspace Sectors.](#)

Eugene Gilbo, Scott Smith, Mike McKinney
ATCA 59th Annual 2014 Conference,
National Harbor, MD, Sep 28-Oct 1, 2014

[RNAV \(GPS\) Total System Error Models for Use in Wake Encounter Risk Analysis of Dependent Paired Approaches to Closely-Spaced Parallel Runways: Project Memorandum - February 2014.](#)

Michael Geyer, Melanie Soares, Steve Barnes, Ashley Hoff, Steve Mackey

Aviation – Economic Analysis

[Airborne Incidents: an Econometric Analysis of Severity, December 19, 2014: Final Report.](#)

Lee Biernbaum, Megan Price, Jacob Wishart

[Airborne Incidents: an Econometric Analysis of Severity, December 31, 2014: Technical Summary.](#)

Lee Biernbaum, Megan Price, Jacob Wishart

[Appendix: Airborne Incidents: an Econometric Analysis of Severity, December 19, 2014 Final Report.](#)

Lee Biernbaum, Megan Price, Jacob Wishart

Aviation – Human Factors

[An Algorithm for Generating Data Accessibility Recommendations for Flight Deck Automatic Dependent Surveillance-Broadcast \(ADS-B\) Applications.](#)

Michael Zuschlag, Judith Burki-Cohen, Divya C. Chandra

[An Examination of Safety Reports Involving Electronic Flight Bags and Portable Electronic Devices.](#)

Stephanie G. Chase, Danielle Hiltunen

[Low Visibility Operations/Surface Movement Guidance and Control System \(LVO/SMGCS\) Chart Usability: an Examination of Flightcrew Position Awareness in Homogeneous 300 ft/75 m RVR Conditions.](#)

Andres L. Sparko, Stephanie G. Chase, Katarina Morowsky, Young Jin Jo, R. Michael Norman, Lawrence J. Prinzel, III, Lynda J. Kramer, Jarvis J. Arthur, III, Randall E. Bailey, Sherri S. Rehfeld, Michelle Yeh, Bruce McGray

Aviation – Unmanned Aircraft

[Unmanned Aircraft System \(UAS\) Service Demand 2015 - 2035: Literature Review & Projections of Future Usage, Technical Report, Version 1.0 - February 2014.](#)

John A. Volpe National Transportation Systems Center (U.S.)

[Operational Implications and Proposed Infrastructure Changes for NAS Integration of Remotely Piloted Aircraft \(RPA\).](#)

John A. Volpe National Transportation Systems Center (U.S.)

Congestion Pricing

[Effects of an HOV-2 to HOT-3 Conversion on Traveler Behavior: Evidence from a Panel Study of the I-85 Corridor in Atlanta.](#)

Margaret Petrella, Sean Puckett, Sean Pearce, Paul Minnice, Jane Lappin



[Effects of Full-Facility Variable Tolling on Traveler Behavior: Evidence from a Panel Study of the SR-520 Corridor in Seattle.](#)

Sean Peirce, Sean Puckett, Margaret Petrella, Paul Minnice, Rosalie Ray, Jane Lappin

[Exploring the Equity Impacts of Two Road Pricing Implementations Using a Traveler Behavior Panel Survey Full Facility Pricing on SR 520 in Seattle and the I-85 HOV-2 to HOT-3 Conversion in Atlanta.](#)

Rosalie Ray, Margaret Petrella, Sean Peirce, Paul Minnice, Sean Puckett, Jane Lappin

[Urban Partnership Agreement and Congestion Reduction Demonstration Programs: Lessons Learned on Congestion Pricing from the Seattle and Atlanta Household Travel Behavior Surveys.](#)

Sean Peirce, Margaret Petrella, Sean Puckett, Paul Minnice, Jane Lappin

Cybersecurity

[Characterization of Potential Security Threats in Modern Automobiles: A Composite Modeling Approach.](#)

Charlie McCarthy, Kevin Harnett, Art Carter

[National Institute of Standards and Technology \(NIST\) Cybersecurity Risk Management Framework Applied to Modern Vehicles.](#)

Charlie McCarthy, Kevin Harnett

[A Summary of Cybersecurity Best Practices.](#)

Kevin Harnett, Tim Weisenberger

Energy & Environment – Aviation Environmental Design Tool

[Aviation Environmental Design Tool \(AEDT\): Technical Manual: Version 2a.](#)

Jonathan Koopmann, Meghan Ahearn, Eric Boeker, Andrew Hansen, Sunje Hwang, Andrew Malwitz, David Senzig, Gina Barberio Solman

[Aviation Environmental Design Tool \(AEDT\): Uncertainty Quantification Supplemental Report: Version 2a Service Pack 2 \(SP2\).](#)

Jonathan Koopmann, Gina Barberio Solman, Eric Dingas, Andrew Biederman, Denise Rickel, Elaine Tran, Stephen Augustine, Jesse Baker, Tyler White

[Aviation Environmental Design Tool \(AEDT\): User Guide: Version 2a.](#)

Jonathan Koopmann, Gina Barberio Solman, Meghan Ahearn, Sunje Hwang

Energy & Environment - Biofuels

[Biofuel Transportation Analysis Tool: Description, Methodology, and Demonstration Scenarios.](#)

Kristin C. Lewis, Gary Baker, Tom Lin, Scott Smith, Olivia Gillham, Alisa Fine, Stephen Costa, Ze Chen, Coralie Cooper

[Global Approaches to Addressing Biofuel-Related Invasive Species Risks and Incorporation into U.S. Laws and Policies.](#)

Kristin Lewis, Read Porter

[Global Approaches to Addressing Biofuel-Related Invasive Species Risks and Incorporation into U.S. Laws and Policies.](#)

Kristin C. Lewis, Read D. Porter.
Ecological Monographs, 84.2 (2014):171-201.

[Biofuel Transportation Analysis Tool:](#)



[Description, Methodology, and Demonstration Scenarios.](#)

Kristin C. Lewis, Gary Baker, Tom Lin, Scott Smith, Olivia Gillham, Alisa Fine, Stephen Costa, Ze Chen, Coralie Cooper

[Sun Grant Initiative: Great Strides toward a Sustainable and More Energy-Independent Future.](#)

John A. Volpe National Transportation Systems Center (U.S.)

Energy & Environment – Surface Transportation

[Best Practices and Strategies for Improving Rail Energy Efficiency.](#)

Aviva Brecher, Joseph Sposato, Bernard Kennedy

[Review and Evaluation of Wireless Power Transfer \(WPT\) for Electric Transit Applications.](#)

Aviva Brecher, David Arthur

Hazard Analysis

[Applying STAMP Framework to Analyze Automotive Recalls.](#)

Qi Van Eikema Hommes

[Transportation Systems Safety Hazard Analysis Tool \(SafetyHAT\) User Guide \(Version 1.0\).](#)

Christopher Becker, Qi Van Eikema Hommes

Intelligent Transportation Systems

[ITS Professional Capacity Building: Setting Strategic Direction 2010-2014.](#)

Elizabeth Greer, Cassandra Allwell, Charlotte Burger, Larry Raskin

[The Smart/Connected City and Its Implications for Connected Transportation.](#)

Matthew Cuddy, Alexander Epstein, Cynthia Maloney, Ryan Westrom, Joshua Hassol, Anita Kim, David Damm-Luhr, Caitlin Bettisworth

[Transforming Transportation through Connectivity: ITS Strategic Research Plan, 2010-2014 Progress Update, 2012.](#)

Nathan Grace, Cassandra Oxley, Suzanne Sloan, Anne C. Tallon, Philip Thornton, Tammy Black, Andrea Vann Easton

Motor Carrier Safety

[The Carrier Safety Measurement System \(CSMS\) Effectiveness Test by Behavior Analysis and Safety Improvement Categories \(BASICs\).](#)

John A. Volpe National Transportation Systems Center (U.S.)

[FMCSA Safety Program Effectiveness Measurement: Roadside Intervention Effectiveness Model, Fiscal Year 2010.](#)

Suzanne Horton, Eran Segev

[FMCSA Safety Program Effectiveness Measurement: Compliance Review Effectiveness Model Results for Carriers with Compliance Reviews in Fiscal Year 2009.](#)

Jon M. Ohman

Positioning

[Global Positioning System \(GPS\) Civil Signal Monitoring \(CSM\) Trade Study Report.](#)

Andrew Hansen



Railroad Safety - Crashworthiness

[Conventional Fuel Tank Blunt Impact Tests: Test and Analysis Results.](#)

Karina Jacobsen, Michael Carolan, Benjamin Perlman

2014 Joint Rail Conference, American Society of Mechanical Engineers, Colorado Springs, CO, Apr 2-4, 2014

[Crippling Test of Budd M-1 Passenger Railcar: Test and Analysis Results](#)

Michael Carolan, Benjamin Perlman, David Tyrell, Jeff Gordon

2014 Joint Rail Conference, American Society of Mechanical Engineers, Colorado Springs, CO, Apr 2-4, 2014

[Development, Fabrication, and Testing of Locomotive Crashworthy Components.](#)

Patricia Llana, Richard Stringfellow

Railroad Safety – Grade Crossing

[Driver Performance on Approach to Crossbuck and STOP Sign Equipped Crossings.](#)

Tarek Omar, Tashi Ngamdung, Marco daSilva

[Effect of an Active Another Train Coming Warning System on Pedestrian Behavior at a Highway-Rail Grade Crossing.](#)

Scott H. Gabree, Marco daSilva

[Effect of Dynamic Envelope Pavement Markings on Vehicle Driver Behavior at a Highway-Rail Grade Crossing.](#)

Scott H. Gabree, Stephanie Chase, Marco DaSilva

Railroad Safety – Safety Culture

[Safety of Railroad Employees' Use of](#)

[Personal Electronic Devices.](#)

Catherine Guthy, Hadar Rosenhand, Alison Bisch, Eric Nadler

[Update from C3RS Lessons Learned Team: Four Demonstration Pilots](#)

Joyce Ranney, Thomas G. Raslear

[Update from C3RS Lessons Learned Team: Safety Culture and Trend Analysis](#)

Joyce Ranney, Thomas G. Raslear

Railroad Safety - Track

[Engineering Studies on Joint Bar Integrity, Part I: Field Surveys and Observed Failure Modes.](#)

David Y. Jeong, Ali Tajaddini, Radim Bruzek
2014 Joint Rail Conference, American Society of Mechanical Engineers, Colorado Springs, CO, Apr 2-4, 2014

[Engineering Studies on Joint Bar Integrity, Part II: Finite Element Analysis.](#)

Michael E. Carolan, David Y. Jeong, A. Benjamin Perlman
2014 Joint Rail Conference, American Society of Mechanical Engineers, Colorado Springs, CO, Apr 2-4, 2014

[Rail Base Corrosion and Cracking Prevention.](#)

George W. Ritter, William C. Mohr, David Y. Jeong, Yim Tang, Cameron Stuart

Railroad Safety – Trespass Prevention

[Countermeasures to Mitigate Intentional Deaths on Railroad Rights-of-Way: Lessons Learned and Next Steps.](#)

Scott H. Gabree, Stephanie Chase, Ann Doucette, Michael Martino



[Trespass Event Risk Factors.](#)

Kathryn Stanchak, Marco daSilva

[Trespass Prevention Research Study - West Palm Beach, FL.](#)

Marco daSilva, Tashi Ngamdung

Sustainability

[Advancing a Sustainable Highway System: Highlights of FHWA Sustainability Activities.](#)

John A. Volpe National Transportation Systems Center (U.S.)

[Transportation System Resilience, Extreme Weather and Climate Change: a Thought Leadership Series.](#)

Bahar Barami

Technology Transfer

[Volpe Center Office of Research and Technology Applications \(ORTA\) : Fiscal Year 2014 Annual Report.](#)

Aviva Brecher, Gary Ritter

Transportation Planning - General

[Developing Formal Asset Management Plans.](#)

Terry Regan, Scott Middleton

[Geospatial Tools for Data-Sharing: Case Studies of Select Transportation Agencies.](#)

Alisa Fine, Paige Colton, Ben Cotton, Emily Futcher, Scott Middleton, Clark Merrefield

[North Carolina DOT Peer Exchange on Performance Management.](#)

Terry Regan, Lauren Deaderick

Transportation Planning - Healthy Communities

[Federal Highway Administration Health in Transportation Working Group: 2013 Annual Report.](#)

John A. Volpe National Transportation Systems Center (U.S.)

[A Multi-Modal Approach to Economic Development in the Metropolitan Area Transportation Planning Process.](#)

Melissa M. Laube, Lydia Rainville, William M. Lyons

[Nonmotorized Transportation Pilot Program: Continued Progress in Developing Walking and Bicycling Networks - May 2014.](#)

William Lyons, Benjamin Rasmussen, David Daddio, Jared Fijalkowski, Anna Biton, Erica Simmons

[Role of Regional Planning Organizations in Transportation Planning across Boundaries.](#)

Haley Peckett, David Daddio, William Lyons

[Statewide Transportation Planning for Healthy Communities.](#)

William Lyons, Lindsey Morse, Logan Nash, Rachel Strauss

[2013/2014 Eco-Logical Program Annual Report](#)

Rachel Strauss, Scott Middleton, Logan Nash, Haley Peckett

[Statewide Pedestrian and Bicycle Planning Handbook](#)

Anna Biton, David Daddio, James Andrew



Transportation Planning - Public Lands

[Apostle Islands National Lakeshore: Alternatives Analysis for LCM Replacement.](#)
David Mannheim, Alex Linthicum

[Glacier National Park: Going-to-the-Sun Road Corridor Management Plan - Existing Conditions of the Transportation System.](#)
Frances Fisher, Heather Richardson, Ryan Yowell, Nathan Grace, Clark Merrefield

[Great Dismal Swamp National Wildlife Refuge Interagency Assistance Group: Transportation Observations, Considerations and Recommendations.](#)
Heather Richardson, Lauren Deaderick

[Nantucket National Wildlife Refuge Alternative Transportation Study.](#)
Anna Biton, Logan Nash, Daniel Mannheim

[U.S. Fish and Wildlife Service Regional Alternative Transportation Evaluation: Region 6.](#)
Benjamin Rasmussen, Jared Fijalkowski, Lauren Deaderick

[Wichita Mountains Wildlife Refuge - Comprehensive Alternative Transportation Plan.](#)
David Daddio, Benjamin Rasmussen, Jonathan Frazier, Erica Simmons, Luis Mejias

[Primer on the Highway Safety Improvement Program \(HSIP\).](#)
Kevin McCoy, Lauren Deaderick, Alex Linthicum

Transportation Planning - Transit

[Alternative Funding Opportunities for National Park Service Transit.](#)
Kevin McCoy, Ryan Yowell, Alex Linthicum

[CMAQ and NPS: Exploring the Applicability of the Congestion Mitigation and Air Quality Improvement Program to NPS Transit.](#)
Kevin McCoy, Lauren Deaderick, Alex Linthicum

[National Park Service Primer on the Construction of Ferry Boats and Ferry Terminal Facilities Program \(FBP\).](#)
David Mannheim, Kevin McCoy, Alex Linthicum

[NPS National Transit Inventory, 2013.](#)
Andrew Breck, David Daddio, Lauren Deaderick, Peter Herzig, Scott Lian, Alex Linthicum

Transportation Planning – Workshops

[Cell Phone Data and Travel Behavior Research: Symposium Summary Report.](#)
Gregory Bucci, Tom Morton

[Utilizing Various Data Sources for Surface Transportation Human Factors Research: Workshop Summary Report, November 6-7, 2013.](#)
Alicia Romo, Bianka Mejia, David C. Y. Yang

Vehicle Miles Traveled

[FHWA Travel Analysis Framework: Development of VMT Forecasting Models for Use by the Federal Highway Administration.](#)



Don Pickrell, David Pace, Jacob Wishart

Vehicle-to-Vehicle Technology

[Heavy Truck Pre-Crash Scenarios for Safety Applications Based on Vehicle-to-Vehicle Communications.](#)

Samuel Toma, Elizabeth Swanson, John D. Smith, Wassim G. Najm

[Target Crashes and Safety Benefits Estimation Methodology for Pedestrian Crash Avoidance/Mitigation Systems.](#)

Mikio Yanagisawa, Elizabeth Swanson, Wassim G. Najm