



*Photo: Minnesota Department of Transportation*

# 11th National Conference on Transportation Asset Management

**July 10–12, 2016**

**Minneapolis Marriott City Center  
30 South 7th Street  
Minneapolis, Minnesota 55402**

***Organized by*  
Transportation Research Board**

***Supported by*  
Federal Highway Administration  
Federal Transit Administration**

***Hosted by*  
Minnesota Department of Transportation**

**[www.trb.org/Conferences/AssetMgt2016.aspx](http://www.trb.org/Conferences/AssetMgt2016.aspx)**

**July 9–10: FHWA/AASHTO Peer Exchange**

**July 10: Advance Workshops**

**July 11–12: Asset Management Conference**

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## Opening Session

Katie Zimmerman, Applied Pavement Technology, Inc., Conference Chair, *presiding*

The interactive panel will address the following themes:

- The role of the federal government to provide stewardship to transportation agencies,
- The demand for increased government accountability,
- The evolution of agency investment priorities to better meet economic and societal demands,
- The need for stronger collaboration across modes and jurisdictions, and
- The growing importance of climate change and extreme weather events in agency decisions.

### **Panelists:**

1. Frank Hornstein, Co-DFL Lead of the House Transportation Policy and Finance Committee, Minnesota House of Representatives
2. Paul Trombino, Director, Iowa Department of Transportation
3. David Springstead, Interim Assistant General Manager of Capital Programs and Development, Metropolitan Atlanta Rapid Transit Authority
4. Tom Everett, Acting Associate Administrator for Infrastructure, Federal Highway Administration

## **“How To:” Technical Sessions to Advance the State of Practice**

### How to Manage Your Assets

Scott Richrath, Spy Pond Partners, *presiding*

Mark Nelson, Minnesota Department of Transportation, *recording*

This session opens the “How To...” track, providing insight to the daily activities involved in forwarding an asset management program. The session will explain how the track fits within the conference, showcasing three asset management operational experiences, and highlighting the track’s upcoming sessions, including AASHTO and TRB research.

#### **Convergence of Long-Range and Asset Management Plannings at the Pennsylvania Turnpike (PPT Presentation)**

Wayne Francisco, Zach Rubin, GHD

#### **Making Data Serve Many Masters: Experiences of Data Sharing with Wyoming DOT (PPT Presentation)**

Martin Kidner, Wyoming Department of Transportation

#### **A Guide to Collecting, Processing, and Managing Roadway Asset Inventory Data (PPT Presentation)**

Katie Zimmerman, Katik Manda, Applied Pavement Technology Inc.

### How to Manage Your Transit Assets

Jennifer Weeks, Washington Metropolitan Area Transit Authority, *presiding*

Prashat Ram, Applied Pavement Technology, Inc., *recording*

With FHWA MAP-21 rule-making approaching completion, many transit agencies are quickly adapting innovative asset management practices. This session is dedicated to the unique challenges of managing rolling stock, rail, and transit facilities.

#### **Asset Management Challenges: Moving from Construction to Revenue Operations (PPT Presentation)**

Jerauld Oxsen, CH2M Hill

#### **Transit Asset Management Gap Assessment for the State of Connecticut (PPT Presentation)**

Sharon Okoye, Connecticut Department of Transportation; William Robert, Spy Pond Partners, LLC

#### **The MTC TERM Lite Scenario Manager: Making Multiple Scenario Runs Easy (PPT Presentation)**

Nicholas Richter, Metropolitan Transportation Commission

### Rapid Fire / Round Table of Demonstrations of Innovation

Heather Holsinger, Federal Highway Administration, *presiding*  
Greg Slater, Maryland State Highway Administration, *recording*

Effective management of pavement, bridges, transit, and other assets requires much more than careful planning. Many agencies are leveraging technology to innovate more practical methods to effectively maintain the public's investment in infrastructure. Several innovators will demonstrate their technologies and ideas in a "rapid-fire" session and will offer you the opportunity to further explore their innovations at the ensuing poster session.

#### **MAP-21 Toolbox: How to Use Enterprise Asset Management Systems to Track the State of Good Repair of your Assets (PPT Presentation)**

Brett Koenig, Trapeze

#### **Minnesota Department of Transportation's Approach to Developing Maintenance Cost Models for Its Pavement Infrastructure Based on Asset Condition Data (PPT Presentation)**

Dave Solsrud, Shelly Pedersen, Minnesota Department of Transportation

#### **Minnesota Department of Transportation's Approach to Developing Maintenance Cost Models for Its Bridge Infrastructure Based on Asset Condition Data (PPT Presentation)**

Sarah Sondag, Trisha Stefanski, Minnesota Department of Transportation

#### **Linking Asset Inventories to Project Prioritization through Asset-to-Project Mapping (PPT Presentation)**

Emily Grenzke, CH2M HILL

#### **Investment Planning for ITS Assets (PPT Presentation)**

Prashant Ram, Katie Zimmerman, Applied Pavement Technology Inc.

#### **Life Cycle Strategy Analysis for Concrete Bridge Decks in Pennsylvania (PPT Presentation)**

Shervin Jahangirnejad, Dennis Morian, Quality Engineering Solutions, Inc.

#### **TAM Knowledge Sharing: AASHTO's Portals (PPT Presentation)**

Hyun-A Park, Perry Lubin, Spy Pond Partners, LLC

### Planning and Programming

Scott Zainhofsky, North Dakota Department of Transportation, *presiding*  
Scott Richrath, Spy Pond Partners, *recording*

Where do asset management and asset management plans fit in a planning world that has traditionally focused on new capital expansion projects? Bringing preservation activities into the planning discipline and coordinating agencywide programming processes requires big picture thinking. This session will help close the gap between asset management planning and investment decisions.

#### **Using MAP-21 TAMP to Strengthen New Mexico DOT's TAM Program (PPT Presentation)**

Tamara Haas, New Mexico Department of Transportation; Hyun-A Park, Spy Pond Partners, LLC

#### **Data Rich but Information Poor: Taking Those First Steps Toward Quantitative Ten-Year Target Setting (PPT Presentation)**

Paul Thompson, Consultant; Prashant Ram, Applied Pavement Technology Inc.

#### **Evaluation of a Multiyear Multiconstraint Strategy to Optimization Linear Assets Based on Life Cycle Costs (PPT Presentation)**

Keivan Neshvadian, AgileAssets Inc.

#### **Small Details, Big Plans: How Asset Management is Driving the Minnesota Statewide Multimodal Transportation Plan and the 20-Year State Highway Investment Plan (PPT Presentation)**

Josh Pearson, Minnesota Department of Transportation

## Tools and Technology

Tamara Haas, New Mexico Department of Transportation, *presiding*  
Jennifer Weeks, Washington Metropolitan Area Transit Authority, *recording*

Several public-and private-sector organizations are creating new systems and tools for tracking inventory, monitoring condition and performance, and streamlining business processes. Come learn how to apply creative real-world solutions to your asset management practice.

### **A Study of Varied Prioritization Approaches for Roadway Repairs (PPT Presentation)**

Theresa Romell, Sui Tan, Metropolitan Transportation Commission

### **Collecting Infrastructure Asset Data Using Advanced Mobile Technology at Minnesota Department of Transportation (PPT Presentation)**

Trisha Stefanski, Minnesota Department of Transportation

### **Challenging the Paradigm in Bridge Asset Management: More Problems Require More Funding (PPT Presentation)**

Royce Greaves, Opus International Consultants

## Spread the Word of Transportation Asset Management 🚗 (“How To:” Technical Sessions to Advance the State of Practice)

Scott Richrath, Spy Pond Partners, *presiding*  
Heather Holsinger, Federal Highway Administration, *recording*

The session will close the “How To” discussion at the 11th Transportation Asset Management Conference, sharing what we’ve learned about how to manage our assets with those unable to attend. Presenters in this closing session will help you communicate the methods and benefits of asset management.

### **Wanted: Asset Managers Who Can Tell a Good Story (PPT Presentation)**

Melaina Voss, Opus International Consultants

### **A Practical Option for Managing Transit Facility and Infrastructure Assets (PPT Presentation)**

Jim Sutton, Chuck Austin, RTD Denver

### **How Transportation Asset Management Transforms the Business Process at the Ohio Department of Transportation (PPT Presentation)**

Eddie Chou, University of Toledo; Andrew Williams, Ohio Department of Transportation

## **Connecting Risk and Asset Management**

### Vulnerability, Future, and Risk, Oh My!

Matthew Hardy, American Association of State Highway and Transportation Officials, *presiding*  
Lori Richter, Wisconsin Department of Transportation, *recording*

The opening session of the connecting TAM and risk track will provide context setting such as defining risk, domestic and international examples of connecting TAM and risk, and how performance and resilience relate to TAM and risk.

### **The Practicalities of Incorporating Risk into Optimized Maintenance and Renewal Strategies for Infrastructure Asset Portfolios (PPT Presentation)**

Martin Gordon, Opus International Consultants

### **Resilience, Performance Measurement, and Asset Management: Connecting the Concepts (PPT Presentation)**

Sue McNeil, University of Delaware; Gordana Herning, Rutgers University

## Playing Risk: Practical Applications Integrating Risk and Asset Management

Matt Haubrich, Iowa Department of Transportation, *presiding*  
Dave Solsrud, Minnesota Department of Transportation, *recording*

Practical examples of how transportation agencies have implemented a TAM program and integrated risk management with it.

**Risk-Based Asset Investment Decisions (PPT Presentation)**

Gordon Proctor, Gordon Proctor & Associates

**Breakthroughs in Risk Management: Supporting TAM Decisions with Innovative Tools and Processes (PPT Presentation)**

Larry Redd, Redd Engineering; William Johnson, Colorado Department of Transportation

**Investment Level Impacts: How MnDOT is Using Risk to Inform Resource Allocation Decisions on the Operating Side of Its Budget (PPT Presentation)**

Deanna Belden, Minnesota Department of Transportation

**Risks from the Point of View of Different Levels within North Carolina Department of Transportation (PPT Presentation)**

Judith Corley-Lay, North Carolina Department of Transportation

**Theory to Practice in Connecting TAM and Risk Analysis.** 🚗

David Ooten, Oklahoma Department of Transportation, *presiding*

Kartik Manda, Applied Pavement Technology, Inc., *recording*

A broad discussion on various aspects of TAM and risk, ranging from risk and transit to making the business case for risk analysis to flexibility in asset risk management.

**An Outcome-Based Scenario Approach for Analyzing Risk in Infrastructure Asset Management (PPT Presentation)**

Amir Hessami, Roger Smith, Texas A&M University

**Risk-Informed Transit Asset Management: Best Practices and Approach (PPT Presentation)**

John Holak, Urban Engineers, Inc.

**Making the Business Case for Risk-Based Asset Management (PPT Presentation)**

Brenda Dix, ICF International

**Flexibility as a Decision Support Strategy for Asset Risk Management (PPT Presentation)**

Vivek Sakhrani, CPCS Transcom Inc.

**Brisk Risk: Real-World Risk Assessment and Analysis in Asset Management. Real Quick**

Deanna Belden, Minnesota Department of Transportation, *presiding*

Anita Bush, Nevada Department of Transportation, *recording*

This session will feature a variety of technical topics presented in a quick, rapid-fire style getting at the “how- to” of risk assessment and analysis. Presentations will include risk in transportation asset management overall as well as risk topics related to specific assets. The presentations act as a lead-in to the same topics being featured in the poster session.

**Active Asset Management Risk (PPT Presentation)**

Milos Posavljak, Susan Tighe, University of Waterloo

**Key Issues in Life Cycle Planning of Chinese Transportation Asset Management (PPT Presentation)**

Ronghua Wang, Jiangbi Hu, Beijing University of Technology

**Communicating Multiobjective Risk—A New Geotechnical Need for Transportation (PPT Presentation)**

Scott Anderson, Federal Highway Administration

**Risk Management and Project Prioritization in an Integrated GIS Environment (PPT Presentation)**

Greg Yarbrough, Allen Ibaugh, Data Transfer Solutions, LLC

**Improving Bridge Risk and Deterioration Modelling: A How to Guide for all State's to improve their Bridge Performance Modelling (PPT Presentation)**

Zach Rubin, Mohammad Dehghani, GHD

**The Silver Bullet: How to Use the National Bridge Investment Analysis System for Developing Bridge Targets and Bridge Asset Management Plans (PPT Presentation)**

Nathaniel Coley, Federal Highway Administration



**Analysis of National Bridge Inventory (NBI) Data for California Bridges (PPT Presentation)**

Rosa Vasconez, Emily Yu, California State Polytechnic University, Pomona

**Development of a Risk-Based Management Approach for Ancillary Highway Structures (PPT Presentation)**

Elizabeth Burkhart, Michael Garlich, Collins Engineers, Inc.

**Addressing Climate Change and Extreme Weather Risks in Asset Management**

Rob Kafalenos, Federal Highway Administration, *presiding*  
John Thomas, Utah Department of Transportation, *recording*

Examples of areas that are applying climate change and extreme weather event information into asset management and plan development.

**Integrating Climate Risk into Transportation Asset Management: The Michigan DOT Climate Resilience Pilot (PPT Presentation)**

Niles Annelin, Michigan Department of Transportation

**Accommodating Extreme Weather Adaptation to Collectively Enhance Infrastructure Planning, Regional Vitality, and Sustainability in North Central Texas (PPT Presentation)**

Jory Dille, North Central Texas Council of Governments

**Alaska's Geotechnical Asset Management Program (PPT Presentation)**

Darren Beckstrand, Aine Mines, Landslide Technology; Paul Thompson, Consultant

**Linking Climate Change to Asset Management Plans and Systems**

Heather Holsinger, Federal Highway Administration, *presiding*  
Mark Suarez, Louisiana Department of Transportation, *recording*

This session focuses on how to develop plans and implement asset management systems that account for climate change and extreme weather event risks.

**Incorporating Climate and Extreme Weather Risk in Transportation Asset Management (PPT Presentation)**

Michael Meyer, Michael Flood, WSP-Parsons Brinkerhoff

**Data and Analytical Needs for Incorporating Extreme Weather Risks in Asset Management (PPT Presentation)**

Anne Choate, ICF International

**Data, Performance Measurement, and Target Setting**

**Data Collection Practices and Experiences for Improving TAM**

Michael Bridges, Louisiana Department of Transportation, *presiding*  
Mark Suarez, Louisiana Department of Transportation, *recording*

This session will explore the ways that data have been collected, managed, and visualized by four transportation agencies: Massachusetts Department of Transportation; the City of Manchester, New Hampshire; West Virginia Department of Transportation; and the Massachusetts Bay Transportation Authority.

**Data Knowledge and Knowing What to Do Next (PPT Presentation)**

David Hurst, Rob Zilay, Dye Management Group

**Utilizing Geospatial Tools to Collect and Analyze Asset Data in the City of Manchester, New Hampshire (PPT Presentation)**

Katherine Keegan, Jonathan Gould, AECOM

**A Case Study from Huntington, WV—Collecting, Extracting, and Visualizing Assets Using a Mobile Mapping Foundation**  
**(PPT Presentation)**

Hussein Elkhansa, West Virginia Department of Transportation;  
Connie Gurchiek, Transcend Spatial Solutions

**Use of Sensors and Scanning Technology for Asset Inventory, Condition, and Service Reliability**  
**(PPT Presentation)**

Satyen Patel, Massachusetts Bay Transportation Authority

**Climate Change Impacts on Asset Deterioration and Life Cycle Cost Analysis**

Rob Kafalenos, Federal Highway Administration, *presiding*  
Jason Bittner, Applied Research Associates, *recording*

Tools and methods for analyzing climate change impacts on deterioration rates and BCA analyses.

**Investigation of Climate Change Effects on Transportation Asset Management**  
**(PPT Presentation)**

Behrouz Shafei, Dena Khatami, Iowa State University

**Impact of Climate Change on the Performance, Maintenance, and Life Cycle Costs of Flexible Pavements** **(PPT Presentation)**

Gerardo Flintsch, Virginia Tech, Yaning Qiao, University of Nottingham

**Opportunities for Risk-Based Asset Management in Flood Resilience: A Retrospective on the October 2015 South Carolina Flooding** **(PPT Presentation)**

Anne Choate, ICF International

**How Can Existing Federal Data Resources be Used in TAM?**

Nastaran Saadatmand, Federal Highway Administration, *presiding*  
Kirby Becker, Minnesota Department of Transportation, *recording*

This session will review the state of the art in valuing transportation assets as well as the FHWA's proposed use of the Highway Performance Monitoring System (HPMS) as the source of pavement data for monitoring performance.

**Valuing Impacts of Transportation System** **(PPT Presentation)**

Patricia Hu, U.S. Department of Transportation

**Improving HPMS Pavement Data to Support Performance Management** **(PPT Presentation)**

Max Grogg, Federal Highway Administration

**The Yellow Brick Road: What Economics Has to Do with Pavements and How HERS-ST Paves the Way** **(PPT Presentation)**

Nathaniel Coley, Federal Highway Administration

**Pavement Condition Reporting and Target Setting in the TAMP: Where Are We and Where Do We Need to Go?** **(PPT Presentation)**

Jonathan Groeger, Gonzalo Rada, Amec Foster Wheeler

**Quality Data Results in Better Asset Management Decisions**

Max Grogg, Federal Highway Administration, *presiding*  
Peggi Knight, Iowa Department of Transportation, *recording*

This session will provide insight on the processes that can be used to insure that the data being used for transportation asset management is accurate, timely, and usable.

**Improving Data Quality for Pavement Management System** **(PPT Presentation)**

Sui Tan, Metropolitan Transportation Commission; Dingxin Cheng, California State University at Chico

**Quantitative Target Setting for Pavement Management Data Quality** **(PPT Presentation)**

Siamak Saliminejad, AgileAssets

**First Steps to Integrated Asset Management Information Technology to Leverage Your Data Sets (PPT Presentation)**

Steve Mitchel, Wayne Francisco, GHD.

**Data Management for Asset Management at Connecticut DOT: An Integrated Life Cycle Approach (PPT Presentation)**

Frances Harrison, Spy Pond Partners; William Pratt, Connecticut Department of Transportation

**Linking TAM and Performance Management**

Francine Shaw-Whitson, Federal Highway Administration, *presiding*

Deanna Belden, Minnesota Department of Transportation, *recording*

This session will discuss how asset management decisions directly correlate to asset level of service and performance.

**Development of Two Unique and Publicly Accessible Performance Dashboards at the Seattle Department of Transportation (PPT Presentation)**

Terry Martin, Seattle Department of Transportation

**Minnesota Department of Transportation's Approach to Developing Maintenance Cost Models for Its Infrastructure Based on Asset Condition Data (PPT Presentation)**

Dave Solsrud, Trisha Stefanski, Minnesota Department of Transportation

**The Role of MAP-21 in MPO Performance Metric Development (PPT Presentation)**

Alice Grossman, Georgia Institute of Technology

**Performance Based Communication Tools for Maintenance Budgets (PPT Presentation)**

David Hurst, Rob Zilay, Dye Management Group

**GIS Capabilities for Improving Asset Management Data Visualization (Data, Performance Measurement, and Target Setting)**

David Schrank, Texas A&M Transportation Institute, *presiding*

David Hurst, Dye Management Group, *recording*

This session will provide an overview of best practices of GIS applications in asset management. GIS applications have become almost a "must-have" for the management of transportation assets.

**Best Practices of GIS Applications in Asset Management at North Carolina Department of Transportation (PPT Presentation)**

Lonnie Watkins, North Carolina Department; Jonathan Arnold, Sepi Engineering & Construction

**Best Practices of GIS Applications in Asset Management (PPT Presentation)**

Mike Fallon, Kelley Ernsdorff, AssetWorks

**New Insights from Historical Information for Utah Department of Transportation (PPT Presentation)**

Shourya Shukla, Rolta Americas, Inc.; Cory Pope, Utah DOT

**North Jersey Transportation Planning Authority Asset Management Model (PPT Presentation)**

Tom Tiner, Michael Baker International

**Moving Beyond MAP-21**

**Asset Management and Sustainable Infrastructure**

Adjo Amekudzi-Kennedy, Georgia Tech, *presiding*

Brad Allen, Applied Pavement Technology, Inc., *recording*

Twenty-first century data collection and analysis is allowing connections to be made between infrastructure investments and societal benefits in ways never before possible. Incorporating these data and techniques into asset management will provide agencies with new opportunities to deliver programs that will provide the maximum benefit to society and allow agencies to better demonstrate that benefit to policy makers and the public.



**Sustainable Transportation for Economic Prosperity in the 21st Century (PPT Presentation)**

Connie Bernardy, Minnesota House of Representatives; John Siekmeier, Minnesota DOT

**Moving to Sociotechnical Asset Management of an Interconnected Network of Bridges (PPT Presentation)**

Martin Gordon, Opus International

**Methods for Including Sustainability as Part of the Transportation Asset Management Toolbox (PPT Presentation)**

James Bryce, Amec Foster Wheeler

**It's All About the Customer: – Quantifying and Communicating the User Benefits from Preserving Transportation Infrastructure (PPT Presentation)**

David Vautin, Metropolitan Transportation Commission

**Funding Transportation Infrastructure**

Brad Allen, Applied Pavement Technology, Inc., *presiding*

Jennifer Brandenburg, Volkert, Inc., *recording*

Governments at all levels are struggling to establish a stable funding model for transportation. Asset management is playing a critical role in communicating both the need for funding and the benefits to investments in infrastructure.

**Evaluating Options for Funding Asset Management Programs (PPT Presentation)**

Joe Guerre, Cambridge Systematics

**Leading Management Practices in Determining Funding Levels for Maintenance and Preservation (PPT Presentation)**

Mark McConnell, Mississippi Department of Transportation; Katie Zimmerman, Applied Pavement Technology, Inc.

**NexTen: Making the Case for Increased Investment in Existing Assets (PPT Presentation)**

Mark Nelson, Minnesota Department of Transportation

**Next-Generation Performance Management**

Mshadoni Smith, Federal Transit Administration, *presiding*

E. Dean Carlson, Carlson Associates, *recording*

If what gets measured gets done, how can an agency ensure they are measuring the right things? This session focuses in on tools and approaches for moving beyond dashboards and building robust performance management systems.

**Going Beyond Performance Targets in Map-21 for Local Agencies (PPT Presentation)**

Sui Tan, Metropolitan Transportation Commission

**Performance: What Should be Measured? (PPT Presentation)**

Omar Smadi, CTRE/Iowa State University

**Everything in Its Place: Tools and Rules for Setting Robust Performance Targets (PPT Presentation)**

Royce Greaves, Opus International

**Transportation Asset Status and Condition Reporting at the Seattle Department of Transportation (PPT Presentation)**

Emily Burns, Seattle Department of Transportation

**You Down with ETG? Yeah. You Know Me!**

Stephen Gaj, Federal Highway Administration, *presiding*

Brad Allen, Applied Pavement Technology, Inc., *recording*

In 2011, FHWA, AASHTO, and TRB formed the TAMETG to assist the three agencies in aligning their efforts to further asset management implementation. Recently the ETG—or expert task group—has

issued four white papers to bring clarity to issues foundational to TAM implementation and that, until now, have not been well defined. In this interactive session, members of the TAM ETG will present these papers and participate in a conversation on the topics.

**Incorporating TAM into the Agencies' Practices (PPT Presentation)**

Randy Park, Utah Department of Transportation

**Developing Human Capital to Support Asset Management (PPT Presentation)**

Timothy Henkel, Minnesota Department of Transportation

**Incorporating TAM into the Planning Process (PPT Presentation)**

Laura Mester, Michigan Department of Transportation

**Defining Cross-Asset Decision Making (PPT Presentation)**

Omar Smadi, Iowa State University

**Transportation Asset Management Implementation from the MPO perspective (PPT Presentation)**

Chris Evilia, Waco MPO

**Turning Data into Information to Improve Decisions**

Steve Varnedoe, Asset Management Associates, PLLC, *presiding*

John McCormick, Bay Area Rapid Transit District, *recording*

What technologies are on the horizon to help turn mountains of data into actionable information? How can the area of knowledge management help improve asset management? This forward-looking session explores how asset managers can make sound investments in data and systems to find the sweet spot between being in the dark and paralysis by analysis.

**Asset Management Data in a Knowledge Management World: Methods for Treating Data (PPT Presentation)**

Frances Harrison, Spy Pond Partners, LLC

**Multiobjective Optimization Approach for Sustainable Pavement Maintenance and Rehabilitation Programming (PPT Presentation)**

Gerardo Flintsch, Virginia Tech; Joao Santos, University of Coimbra

**Improving the Resilience of Transit Systems Threatened by Natural Disasters (PPT Presentation)**

Deborah Matherly, Louis Berger; Jon Carnegie, Rutgers

**Conform, Reform, or Transform: Building a Forward-Looking TAM Organization** 🚗

Steve Wilcox, New York State Department of Transportation, *presiding*

Mshadoni Smith, Federal Transit Administration, *recording*

There are as many different approaches to implementing asset management as there are transportation agencies. Although every agency is different and faces different challenges, there are lessons to be learned in the successes and struggles of every asset management implementation effort. This session explores some of these lessons while looking forward at common challenges all agencies will face.

**The Seven Habits of Highly Effective Transit Asset Management Organizations (PPT Presentation)**

Herbert Higginbotham, Accenture

**Applying International Standards Beyond MAP-21 and Toward Global Best Practice in Asset Management (PPT Presentation)**

Christian Roberts, WSP-Parsons Brinkerhoff

**MBTA's Advanced Asset Management Program (PPT Presentation)**

Satyen Patel, Massachusetts Bay Transportation Authority

**Developing the Long Island Rail Road (LIRR) Roadmap to Advance Asset Management Capability (PPT Presentation)**

John O'Har, Brenden Duffy, WSP-Parsons Brinkerhoff

## TAM Implementation

### Oh the Places We'll Go: Creating an Implementation Roadmap

Stephen Gaj, Federal Highway Administration, *presiding*

Nastaran Saadatmand, Federal Highway Administration, *recording*

This session features four organizations that have aligned their business processes to support asset management implementation. The presentations will highlight implementation steps and lessons learned.

#### **TAM Implementation Journey at Yukon Highways and Public Works (PPT Presentation)**

Craig Milligan, Fireseeds North Infrastructure

#### **How Internal Governance Arrangements can Influence Transportation Asset Management Implementation (PPT Presentation)**

Wayne Francisco, Zach Rubin, GHD

#### **Fulfilling Mandates, Empowering Organizations: The Lessons Learned from Implementation and Operation of the Managing Assets for Transportation Systems (MATS) (PPT Presentation)**

James Birdsall, Parsons Corporation

#### **Connecting Your Organization's Asset Management Governance Structure to Institutional Success (PPT Presentation)**

Jason Bittner, Applied Research Associates, Inc.

### Building Blocks: Implementation at the Asset Class Level (TAM Implementation)

Timothy Henkel, Minnesota Department of Transportation, *presiding*

Thomas Van, Federal Highway Administration, *recording*

This session will highlight best practices of asset management at the asset class level.

#### **Traffic Signal Asset Management System (PPT Presentation)**

Daniel Farley, Pennsylvania Department of Transportation; Jeff Bergsten, Michael Baker International

#### **Optimal Pavement Funding Prioritization: Benefit-to-Cost Model (PPT Presentation)**

Timothy Skeel, Seattle Department of Transportation

#### **Wall Asset Management Implementation at Colorado Department of Transportation (PPT Presentation)**

Mark Vessely, Shannon & Wilson; Bryant Walters, Collins Engineers, Inc.

#### **Ensuring Roadway and Utility Financial Sustainability Through Right-of-Way Capital Planning and Optimization (PPT Presentation)**

Christiaan Lombard, AECOM; Gary Ruck, Deighton Associates Ltd.

### All Together Now: Giving the Infrastructure a Voice at the Local, Regional, and State Level

David Springstead, Metropolitan Rapid Transit Authority, *presiding*

John McCormick, Bay Area Rapid Transit, *recording*

An asset management program can provide the data that are necessary to align your organization's goals to those of the department of transportation. This session highlights presenters from the DOT, MPO, and transit agency perspective. The agencies will describe the creation of asset management programs that support their organization as well as regional stakeholders.

### **Turning Data into Action: Mobilizing Transit Asset Management at a Regional Scale**

**(PPT Presentation)**

Theresa Romell, Metropolitan Transportation Commission

### **Development of a Transit Asset Management Plan at Metra**

**(PPT Presentation)**

Robert Peskin, AECOM; Michael Rowe, Metra

### **Collaboration to Support Regional and Statewide TAM: Lessons**

**Learned in Greater Cleveland, Ohio (PPT Presentation)**

Sam Van Hecke, Cambridge Systematics; Kathy Sarli, Northeast Ohio Areawide Coordinating Agency

### **California's Update on Its Transportation Asset Management Pilot Program (PPT Presentation)**

Michael Johnson, Hamid Sadraie, California Department of Transportation (CALTRANS)

### **Take an "A" Train: Transit Asset Management Implementation** 🚆

Mshadoni Smith, John Giorgis, Federal Transit Administration, *presiding*

Jennifer Weeks, Washington Metropolitan Area Transit Authority, *recording*

This session provides an overview of the implementation of asset management programs at transit agencies. Presenters will highlight modifications to business processes, the establishment of performance targets, and lessons learned through implementation.

#### **CTA's Linear Asset Management Implementation (PPT Presentation)**

Leah Mooney, Robin Roever, Chicago Transit Authority

#### **Target Setting in Transit: Using Data to Involve Staff Across an Agency (PPT Presentation)**

Yvonne Carney, Washington Metropolitan Area Transit Authority

#### **Implementing an Asset Management Program at a Legacy Transit System (PPT Presentation)**

Laura Zale, Southeastern Pennsylvania Transportation Authority

#### **TAM Implementation: Lessons Learned (PPT Presentation)**

Rick Laver, CH2M Hill

### **Moving the Dial** 🚆

David Rose, Gannett Fleming, *presiding*

Laura Zale, Southeastern Pennsylvania Transportation Authority, *recording*

This panel provides specific examples of asset management that is moving the dial—resulting in improved reliability, reduce life-cycle cost, reduced safety risk, and improved customer experience.

**(PPT Presentation)**

#### **Panelists**

Satyen Patel, Massachusetts Bay Transportation Authority  
John McCormick, Bay Area Rapid Transit

Mike Hubbell, Dallas Area Rapid

Transit Paul Edwards, Utah

Transit Authority

Collete Erricson, New York Metropolitan Transportation Authority Bus

Operations Lou Cripps, RTD Denver

### **On the Road Again: Implementing a Sustainable Asset Management Program at Your Agency**

Adjo Amekudzi-Kennedy, Georgia Institute of Technology, *presiding*

Shayne Gill, AASHTO, *recording*

This panel will provide examples of aligning the agency's business practice to better create a sustainable asset management program.

**Creating a Sustained Implementation of MassDOT's Asset Management Strategic Plan (PPT Presentation)**

Patricia Leavenworth, Massachusetts Department of Transportation;  
Nathan Higgins, Cambridge Systematics

**Framework and Case Studies for Calculating the Return on Investment for Transportation Asset Management Systems and Process Improvements (PPT Presentation)**

William Robert, Spy Pond Partners, LLC; Chris Williges, HDR, Inc

**Organizational Issues in Performance Management and Transportation Asset Management: Are You Prepared? (PPT Presentation)**

Jonathan Groeger, Deepa Thandaveswara, Amec Foster Wheeler

**A Framework for Enhancing TAM Implementation for Sustained TAM Programs (PPT Presentation)**

Margaret-Avis Akofio-Sowah, WSP-Parsons Brinckerhoff; Adjo Amekudzi-Kennedy, Georgia Institute of Technology

## Poster and Reception

### "How To:" Technical Sessions to Advance the State of Practice

**1. Who's Your Audience: Structuring Your TAMP to Meet the Needs of the Reader**

Wayne Francisco, Zach Rubin, GHD

**2. How to Use Asset Type Variants to Model Complex Rehabilitation Policies using TERM Lite**

Nicholas Richter, Metropolitan Transportation Commission

### Connecting Risk and Asset Management

**3. Active Asset Management Risk**

Milos Posavljak, Susan Tighe, University of Waterloo

**4. Key Issues in Life Cycle Planning of Chinese Transportation Asset Management**

Ronghua Wang, Jiangbi Hu, Beijing University of Technology

**5. Communicating Multiobjective Risk: A New Geotechnical Need for Transportation**

Scott Anderson, Federal Highway Administration; Mohammad Dehghani, GHD

**6. Risk Management and Project Prioritization in an Integrated GIS Environment**

Greg Yarbrough, Allen Ibaugh, Data Transfer Solutions, LLC

**7. Improving Bridge Risk and Deterioration Modelling: A How to Guide for All State's to Improve Their Bridge Performance Modeling**

Zach Rubin, Mohammad Dehghani, GHD

**8. The Silver Bullet: How to Use the National Bridge Investment Analysis System for Developing Bridge Targets and Bridge Asset Management Plans**

Nathaniel Coley, Federal Highway Administration

**9. Analysis of National Bridge Inventory (NBI) Data for California Bridges**

Rosa Vasconez, California State Polytechnic University, Pomona

**10. Development of a Risk-Based Management Approach for Ancillary Highway Structures**

Elizabeth Burkhart, Michael Garlich, Collins Engineers, Inc.

### Data, Performance Measurement, and Target Setting

**11. Skid Assessment Using a 3-D Laser Profiler**

Humaira Zahir, Kansas State University

**12. Improving Automated Sign Retroreflectivity Data Collection And Database Management Using Unique Identifiers**



Chris Vaughan, Sarah Searcy, Institute for Transportation Research and Education

**13. Performance-Based Maintenance Contract: Woodrow Wilson Bridge Case Study**

Adrian Burde, Leidos; Ken McEntire, Asset Management Associates

**14. Dynamic Asset Surveys: Gaining Public Opinions of Roadway Assets Using Roadway Reviews and Focus Groups**

Chris Cunningham, Daniel Findley, Institute for Transportation Education Research

**15. Setting Customer-Focused Performance Measures and Condition Indicators**

Royce Greaves, Opus International

**16. If These Rails Could Talk: An Asset Management Approach to Short Text Analysis**

Akhil Nair, Ian Gordan, Amey Consulting USA Inc.

**17. Enhanced Framework for Dynamic Segmentation of Pavement Sections**

Ahmed Abdelaty, H. David Jeong, Iowa State University

**Moving Beyond MAP-21**

**18. Operational Systems Informing Enterprise Asset Management Success**

Henry Eibel, New Jersey Turnpike; Jeff Siegel HNTB Corporation

**19. A Smart Framework in Bridge Management System to Move Beyond MAP-21**

Mohammad Sayyar, Md. Schafiul Azam AgileAssets Inc.

**20. Integrated Planning and Change Management at Pennsylvania Department of Transportation**

Seth Yoskowitz, Wayne Francisco, GHD

**21. Moving Beyond MAP-21: A Comprehensive Asset Management Approach**

Stephen Schorn, Benoit Kroely, Advitam Inc.

**22. Asset Management for Traffic and Safety Assets**

Nancy Lefler, VHB; William Robert, Spy Pond Partners, LLC

**23. ADA Curb Ramp Asset Management and Improvements in Virginia**

Ning Li, William Duke, Virginia Department of Transportation

**TAM Implementation**

**24. Road Asset Management Gap Analysis in Costa Rica: Challenges and Good Opportunities for a Middle-Income Developing Country**

José David Rodríguez, LanammeUCR University of Costa Rica; Jorge Arturo Carmona, Independent Consultant

**25. The Next Generation of Bridge Management with AASHTO Ware BrM**

Jeremy Shaffer, Bentley Systems, Judy Skeen, AASHTO

**26. Ready for Takeoff: Aviation Asset Management**

Andrew Ardrey, John Fortin, CH2M.

**27. Implementing Tunnel Assets into Colorado DOT's Strategic Asset Management System**

Jeffrey Zavitski, Deighton Associates Limited; Tyler Weldon, Colorado Department of Transportation

**28. Sidewalk Scout, Sidewalk Sentry, and Sidewalk Quality Index: Tools for Assessing and Managing Community Sidewalk Assets**

Jack Cebe, Randall Guensler Georgia Institute of Technology

**29. Minnesota DOT's Experience Implementing and Enterprise Transportation Asset Management System**

Ray Starr, Dave Solsrud, Minnesota Department of Transportation

**Closing Session**

Katie Zimmerman, Applied Pavement Technology, Inc., Conference Chair, *presiding*

**From Inception to Evolution**

The conference presentations demonstrate the evolution that is taking place in asset management today. Just a few years ago, most agencies were identifying an asset management champion and

focusing on building an asset management culture. Today, agencies are moving towards a more sustainable, cross-cutting, and evolved program.

During the closing session, each of the Track Chairs will share highlights from their sessions related to ways in which:

- The practice of asset management is evolving,
- Agencies are creating sustainable asset management programs that are embedded in the organization's culture,
- Technology is influencing the way decisions are made, and
- Data is being used to speak to multiple audiences.

The session will conclude with a summary of gaps that would benefit from further research or technology transfer efforts.

**Panelists:**

Scott Richrath, Spy Pond Partners

Matthew Hardy, American Association of State Highway and Transportation

Officials David Schrank, Texas A&M Transportation Institute

Brad Allen, Applied Pavement Technology, Inc.

Laura Zale, Southeastern Pennsylvania Transportation Authority