



TRANSPORTATION RESEARCH BOARD

2016

INTERNATIONAL CONFERENCE & WORKSHOP ON WINTER MAINTENANCE AND SURFACE TRANSPORTATION WEATHER



*Fort Collins Marriott, Fort Collins, CO
April 25 -27, 2016*

Sponsored by
TRB Committees on:
Winter Maintenance (AHD65) and
Surface Transportation Weather (AH010)



2016 INTERNATIONAL CONFERENCE & WORKSHOP ON WINTER MAINTENANCE AND SURFACE TRANSPORTATION WEATHER

TRB Committee on Winter Maintenance (AHD65)

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Institute (WTI), *Young member*
Eetu Pilli-Sihvola, Finnish Transport Safety Agency
Trafu, *Young member*
Joshua Seeherman, University of California,
Berkeley, *Young member*

TRB Staff Members

James W. Bryant, Senior Program Officer - Maintenance and Preservation Engineer
Joanice L. Johnson, Associate Program Officer

2016
INTERNATIONAL CONFERENCE & WORKSHOP ON
WINTER MAINTENANCE AND SURFACE TRANSPORTATION WEATHER

This is a Non-traditional conference in that presentations have been prepared in advanced and can be accessed by registered workshop participants ([On Demand Presentations](#)). Workshop participants are encouraged to watch the on demand presentations and access associated materials so that there is ample time to discuss the ideas at the interactive workshop.

The objectives of the International Conference on Winter Maintenance and Surface Transportation Weather are to provide a forum for the exchange of information on the state-of-the-art and state-of-the-practice in research and technology applications to improve snow removal and ice control operations with support of surface transportation weather information.

Over 30 technical presentations have been recorded, posted online, and available to on demand access to registered conference participants. The titles of the 8 on demand sessions are included below:

- SESSION 1: COST BENEFIT OF WINTER MAINTENANCE ACTIVITIES
- SESSION 2: LARGE VOLUME SNOW CONTROL
- SESSION 3: BEST PRACTICES TO REDUCE THE ENVIRONMENTAL IMPACTS OF WINTER MAINTENANCE
- SESSION 4: THE APPLICATION OF INNOVATIVE TECHNOLOGIES IN DECISION SUPPORT FOR WINTER OPERATIONS.
- SESSION 5: DECISION SUPPORT IN WINTER OPERATIONS
- SESSION 6: ASSESSING ROAD SURFACE AND ROAD WEATHER CONDITIONS
- SESSION 7 : INNOVATIVE SOLUTIONS AND EQUIPMENT FOR SNOW AND ICE CONTROL
- SESSION 8: POLICY AND MANAGEMENT FOR WINTER MAINTENANCE AND WEATHER SERVICES

The in-person workshop will draw from themes developed in the presentations to identify key advances since the 2012 conference, technologies that are on the horizon for near-term implementation, and key ongoing research needs.

AGENDA AT A GLANCE

As of March 15, 2016 (subject to change)

MONDAY, APRIL 25, 2016			
5:30 p.m. – 7:00 p.m.	Opening Reception		
TUESDAY, APRIL 26, 2016			
8:00 a.m. – 9:30 a.m.	Plenary Session		
9:30 a.m. – 10:00 a.m.	Break		
10:00 a.m.– Noon	Concurrent Workshop Breakout Sessions		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; padding: 5px;">Decision Support Part 1: Tools to aid travel planning</td> <td style="width: 33%; padding: 5px;">Best Management Practices Part 1: Focus on Sustainability</td> <td style="width: 33%; padding: 5px;">Big Data & Winter Maintenance: Turning data into useful information</td> </tr> </table>	Decision Support Part 1: Tools to aid travel planning	Best Management Practices Part 1: Focus on Sustainability
Decision Support Part 1: Tools to aid travel planning	Best Management Practices Part 1: Focus on Sustainability	Big Data & Winter Maintenance: Turning data into useful information	
Noon – 1:00 p.m.	Lunch		
1:00 p.m.-3:00 p.m.	Concurrent Workshop Breakout Sessions		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Equipment & Materials</td> <td style="width: 50%; padding: 5px;">Resilience & Climate Change</td> </tr> </table>	Equipment & Materials	Resilience & Climate Change
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3:00 p.m.– 3:30 p.m.	Break		
3:30 p.m. – 5:30 p.m.	Concurrent Workshop Breakout Sessions		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Decision Support Part 2: Maintenance Operations</td> <td style="width: 50%; padding: 5px;">Best Management Practices Part 2: Administration & Human Resources</td> </tr> </table>	Decision Support Part 2: Maintenance Operations	Best Management Practices Part 2: Administration & Human Resources
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WEDNESDAY, APRIL 27, 2016			
8:00 a.m. – 9:15 a.m.	<i>Focus on Emerging Issues: Industry, Academic, Public Sector</i>		
9:15 a.m. – 9:30 a.m.	Break		
9:30 a.m.– 11:30 a.m.	Breakout Session Reports and Discussion of Cross Cutting Issues		
11:30 a.m. - Noon	Closing Remarks		
Noon – 1:00 PM	Lunch		

CONFERENCE AGENDA

MONDAY, APRIL 25, 2016

5:30 p.m. – 7:00 p.m.

OPENING RECEPTION

TUESDAY, APRIL 26, 2016

7:00 a.m. – 8:00 a.m.

Breakfast

8:00 a.m. – 9:30 a.m.

WELCOME AND INTRODUCTIONS

James Bryant, TRB, Senior Program Officer - Maintenance and Preservation Engineer
Colorado State Department of Transportation
Fort Collins

Invited
Invited

TRB Sponsoring Committee intros: scope, objectives

TRB Winter Maintenance Committee

Tina Greenfield, Iowa Department of Transportation, Incoming Chair Committee

TRB Surface Transportation Weather Committee

Kathy Ahlenius, Wyoming Department of Transportation

TRB Equipment Maintenance Committee

Lisa Kunzman, California Department of Transportation, Outgoing Chair

Attendee Introductions

James Bryant, TRB Staff

Accomplishments from 2012 Conference

Wilfrid Nixon, Salt Institute

2016 Conference Objectives and Challenge to Attendees

Workshop Organization and Logistics, introduce workshop leaders

Max Perchanok, Ontario Ministry of Transportation

9:30 a.m. – 10:00 a.m.

BREAK

10:00 a.m. – Noon **CONCURRENT WORKSHOP BREAKOUT SESSIONS**

Decision Support Part 1: Tools to aid travel planning

Moderator: *Dr. Roemer Alfelor, Federal Highway Administration*

Decision support systems are so much more than simply saying when to plow and how much chemical to apply. Speed and travel time are also of critical concern to road users. This session contains presentations that explore novel uses of decision support systems and investigate how these uses can benefit winter operations.

Best Management Practices Part 1 - (Sustainability)

Moderators: *Wilfred Nixon, Salt Institute, and Richard Nelson, AASHTO*

Administrative and management policies for winter maintenance vary across agencies as well as the types and providers of services. Research and analysis are needed to evaluate the effectiveness of these policies and identify potential improvements. This breakout session will focus on management practices that support sustainability in use of materials, and other resources.

Big Data & Winter Maintenance: Turning data into useful information

Moderator: *Tina Greenfield, Iowa Department of Transportation*

The fields of automated and connected vehicle technologies will have a strong impact on winter maintenance operations in coming years. The emergence of remote sensing and mobile data collection technologies will also impact the amount of data that is collected to support winter maintenance operations. This breakout sessions focusing on tools and techniques to turn data into useful information for decision making

Noon – 1:00 p.m.

LUNCH

1:00 p.m.-3:00 p.m.

CONCURRENT WORKSHOP BREAKOUT SESSIONS

Equipment & Materials

Moderators: *Lisa Kunzman, California Department of Transportation*

Effective snow and ice control is a critical aspect of highway winter maintenance. Snow removal equipment, especially, is a key element that is affected by harsh conditions. This session is relevant for fleet management and maintenance and operations personnel who have winter maintenance responsibility

Resilience & Climate Change

Moderator: *Kathy Ahlenius, Wyoming Department of Transportation*

People are fond of saying "if you don't like the weather, wait a day, it will change". Climate does change and how it changes can affect the way transportation agencies maintain the roads especially in winter. What are some of issues your agency is dealing with in regards to climate change, extreme weather events and resiliency to future events? This session will focus on how agencies are facing changes and building in resilience to winter weather.

3:00 p.m. – 3:30 p.m.

BREAK

3:30 p.m. – 5:30 p.m.

CONCURRENT WORKSHOP BREAKOUT SESSIONS

Decision Support Part 2: Maintenance Operations

Moderator: Max Perchanok, Ontario Ministry of Transportation

Roadway condition determinations remain a critical component of winter maintenance, and many decisions are based upon data received from static and mobile sensors. This session explores the techniques to assess sensor accuracy, placement, and equipment and will discuss issues and opportunities revolving around data confidence in decision making.

Best Management Practices Part 2: Administration and Human Resources

Moderator: *Richard Nelson, AASHTO*

Having well trained, well equipment personnel is one of the keys for successful winter maintenance operations. This session explores the training and other program that are used in support of preparing operations and administrators for winter maintenance operations.

5:30 p.m.

Day adjourned

WEDNESDAY, APRIL 27, 2016

7:00 a.m. – 8:00 a.m.

Breakfast

8:00 a.m. – 9:15 a.m.

Focus on Emerging Issues: Industry, Academic, Public Sector

Presiding: Wilfred Nixon, Salt Institute,

9:15 a.m. – 9:30 a.m.

BREAK

9:45 a.m. – 11:45 a.m.

WORKSHOP BREAKOUT SESSION REPORTS

Presiding: Max Perchanok, Ontario Ministry of Transportation

11:45 a.m. - Noon

CLOSING REMARKS

Noon – 1:00 p.m.

Lunch

Meeting Adjourned