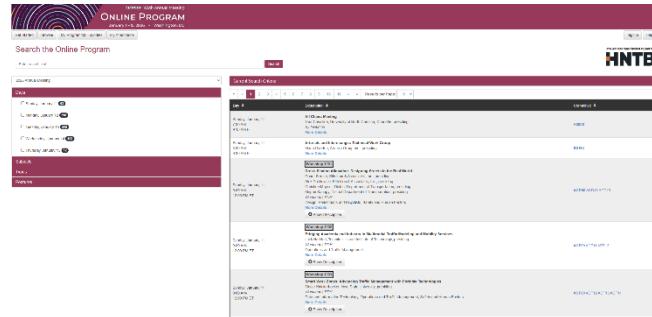




## Winter Maintenance at the 2026 TRB Annual Meeting

### ***Resource Spotlight: TRB Annual Meeting Online Portal***

If you're searching for the latest research on a transportation topic, be sure to visit the [TRB Annual Meeting Online Program](#). The program includes papers, posters and presentation materials from the 2026 Annual Meeting as well as the previous five meetings.



Below we've compiled selected links to the posters and presentations related to winter maintenance presented at the 2026 Annual Meeting. **Registration, attendance and access to materials are free for employees of state DOTs and other TRB Sponsor organizations.** Sign in to the Online Program to access all the resources shown here.

If you have trouble accessing this information, check with your DOT or other transportation library.

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## Equipment and Facilities

**26-05268 Data-Driven GPS-Based Work Record Validation for Large-Scale Winter Fleet Operations in Transportation Agencies**

[Lectern Session](#)

Anugunj Naman, Aaron Ault, Yaguang Zhang, James Krogmeier  
*Purdue University*

**26-04936 Evaluation of a Commercial Vehicle In-Cab Congestion and Weather Alert System**

[Lectern Session](#)

Noah Goodall, Chien-Lun Lan  
*Virginia Department of Transportation; Virginia Transportation Research Council*

**26-03744 Improving Snow Hauling Efficiency Through Optimal Dump Truck Allocation: Evidence from Asahikawa, Japan**

[Poster Session](#)

Takui Narayama, Kunihiro Kishi, Kosuke Shimazu, Issei Fukuba, Motoki Azuma, Naoki Funaoka  
*Hokkaido University; All Nippon Airways Co., Ltd.; Hokkaido Development Bureau, MLIT; Hokkaido Road Management Engineering Center; Pacific Consultants Co., Ltd*

**26-04633 In-Vehicle Auditory Alerts During Snow Removal Operations: Preliminary Analysis and Guidelines**

[Lectern Session](#)

A. K. M. Ashikuzzaman, Curtis Craig, Nichole Morris  
*University of Minnesota*

**26-05384 Thermal Image-Based Collision Avoidance for Snowplows Using an Improved Faster Region-Based Convolutional Neural Network Framework**

[Poster Session](#)

Imran Reza, Suresh Muknahallipatna, Khaled Ksaibati  
*University of Wyoming*

## Materials

**26-03821 Evaluation of Ice Melting Performance of De-Icing Materials with and Without Prewetting for Application on Ontario Roads**

[Poster Session](#)

Jalal Barzegaran, Kamal Hossain, Neil Pawluk, Nedim Oren  
*Carleton University; Ontario Ministry of Transportation*

**26-00196 Refinements to the Mechanical Rocker Ice Melting Test for Improved Accuracy**

[Lectern Session](#)

Scott Koefod  
*Cargill Deicing Solutions*

## Infrastructure, Pavements and Bridges

### 26-00912 Bridge Vulnerability Index for Extreme Weather Events

[Poster Session](#)

Danilo Inoue, Alejandra Kerber, Ruohan Li, Christian Sabillon-Orellana, Jorge A. Prozzi

*University of Tennessee, Knoxville; University of Texas, Austin*

### 26-02472 Comprehensive Synthesis of Winter Road Surface Conditions Monitoring and Modeling: Developments, Challenges, and Future Direction

[Poster Session](#)

Mingjian Wu, Ali Fares, Tae Kwon, Luis Miranda-Moreno

*Hong Kong Polytechnic University; University of Alberta; McGill University*

### 26-04043 Estimating Winter Road Grip from Road Weather Information System Imagery: A Comparative Study of Deep Embeddings and Hybrid Models

[Lectern Session](#)

Michael Urbitzondo, Tae Kwon, Colby Fortier-Brown

*University of Alberta; Maine Department of Transportation*

### 26-00971 Innovative Drifted Snow Control Through Solar Snow Fence

[Poster Session](#)

Iftikhar Ahmad, Mijia Yang, Dan Gullickson

*North Dakota State University; Minnesota Department of Transportation*

### 26-03027 Pavement Surface Grip Prediction from Road Weather Information System Data Through Long-Short Term Memory Modeling

[Lectern Session](#)

Tianjie Zhang, Hao Wang, Xiaoyu Zhang

*Rutgers University; Rutgers University, New Brunswick*

### 26-02100 Real-Time Estimation and Segmentation of Winter Road Surface Conditions Using Vision, Onboard Sensor, and Roadside Weather Data

[Lectern Session](#)

Jiarui Zhang, Fan Wu, Huiyu Chen, Kaizhe Hou, Tony Qiu

*University of Alberta*

## Technology and Information Systems

### 26-01659 Advancing Snowplow Operations Through Connected Vehicle Technology: A Multi-Phase Snow Plow Signal Priority and Preemption Evaluation in Colorado

[Lectern Session](#)

Vijay Sabawat, Alvin Stamp

*Parsons Corporation; Colorado Department of Transportation*

### 26-03423 Comparing Novice Drivers' Perceptions of Simulator-Based Snowplow and Commercial Driver's License Training for Effective Use in DOT Programs

[Poster Session](#)

Yanchao Zheng, Jae Heo, Luciana Debs, Soowon Chang  
*Texas State University; Purdue University*

**26-03086 An Integrated Simulation Framework of Urban Snow Removal Under Extreme Winter Storms**

[Lectern Session](#)

Chenglong You, Matthew Korp, Ana María Ospina Salazar, Jiangbo Yu, Luis Miranda-Moreno  
*McGill University*

**26-02572 Investigating Winter Operations to Support Effective Implementation of Simulator-Based Training in Snowplow Driving Programs**

Poster Session

Jae Heo, Yanchao Zheng, Luciana Debs, Soowon Chang  
*Texas State University; Purdue University*

**26-03439 Multi-Scale Model for Road Weather Information System Location Selection Considering Road Weather Characteristics and Network Topology**

[Lectern Session](#)

Kakan Dey  
*Michigan State University*

## Performance Management

**26-05489 Alternative Weather Solutions for Snow and Ice Performance Evaluation Tools**

[Poster Session](#)

Ntemi Masanja, Meshack Mihayo, Emmanuel Kidando, Josiah Owusu-Danquah, Abdul Ngereza, Philip Balyagati  
*Cleveland State University*

**26-20255 Balancing the Level of Service with Salt Use Concerns During Snow and Ice Operations**

[Lectern Session](#)

Scott Koefod  
*Cargill Salt Group*

**26-03547 Development and Validation of a Region-Specific Winter Severity Index for Michigan Based on Maintenance Material Costs**

[Lectern Session](#)

Ardeshir Fadaei, Farish Jazlan, Ali Zockaie, Mehrnaz Ghamami, James Roath  
*Michigan State University; Michigan Department of Transportation*