

Road Weather Community Activities Session #3

“AASHTO SICOP, Clear Roads & TRB”

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AASHTO Winter Maintenance Technical Service Program (WMTSP/SICOP)

The principal mission of the Winter Maintenance Program (WMP) will be to ensure that the requisite testing and evaluation of potentially implementable **international or domestic winter maintenance technologies** are performed and that the results of these efforts are presented and disseminated in such a manner that modern winter maintenance technologies are easily understood and integrated into individual state and municipal operational programs. Beyond this principal mission, the WMP should work toward establishing a sustainable systems approach to snow and ice control in the United States—one involving the vehicle, the driver, the equipment, the materials and practices, and the receiving environment for managing roadway and bridge snow and ice.

www.sicop.net

AASHTO Winter Maintenance Technical Service Program (WMTSP/SICOP) [Continued]

- **Click on Document Repository**
 - Special Section
 - Click on WMTSP
 - Click on 2007, 2009 and 2011 National Winter Maintenance Peer Exchanges Research Needs Statements Progress Report
 - Click on CBT Handout
 - Documents



Friday,
August
03,
2012

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Document Repository

From time to time, SICOP projects will produce documents and reports that may be of value to the snow and ice community. Where possible, these documents will be made available on this web site. Documents will be made available as Adobe Acrobat® Files. If you need the Adobe software to read these files, it may be obtained from the [Adobe Website](#). We also include example specifications.

Special Section

Special items of interest for a brief period of time are placed here. After the time has lapsed, they are placed elsewhere on the page.

[WMTSP: Proposed Four Year Program \(2013-2016\) Winter Maintenance Technical Service Program \(WMTSP\)](#) | Posted July 30, 2012

[2007, 2009 and 2011 National Winter Maintenance Peer Exchanges Research Needs Statements Progress Report](#) | Posted July 30, 2012

[CPT Update: AASHTO's suite of CPTs provides comprehensive training in all aspects of winter](#)

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Proposed Four Year Program (2013-2016)

Winter Maintenance Technical Service Program (WMTSP)

2013

Support the 2013 mission and vision of the AASHTO Highway Subcommittee on Maintenance in being the leader for preserving and maintaining a world class highway system by providing to the winter maintenance workforce: 1) effective and efficient training programs and technology transfer processes; 2) exposure to the latest innovations in equipment, materials, and operational/managerial techniques, and; 3) best method practices, that will utilize sustainable methods to improve winter operations "...to preserve and maintain a healthy and reliable highway infrastructure that meets the performance expectations of its customers" by performing the following:

- **Promote performance-based management & performance measurement**
 - Develop an outreach program to promote performance-based measures that will increase focus and awareness of the importance of safe winter maintenance operations and reliable all weather mobility through effective liaison and collaboration with:
 - The AASHTO Standing Committee on Performance Management in their focus to maximize the performance of transportation systems using performance based, results-driven management; and
 - The Subcommittee on Public Affairs as they work on informing the public about the importance of transportation to our social and economic well-being and the associated funding necessary for transportation.

Promote the findings of NCHRP 6-17, "Performance Measures for Snow and Ice Control Operations", NCHRP Synthesis 389, "Performance-Based Contracting for Maintenance" and NCHRP 20-68A with conference presentations, technical field reviews and whatever techniques result in efficient and effective technology

- **Maintain a current and comprehensive training program that will strengthen workforce development** for winter maintenance personnel by promoting Computer-Based Training and Web-Based Programs:
 - Anti-icing/Road Weather Information Systems Computer and Web Based Training
 - Monitor state and local government snow and ice control best practices and research programs for material to update Anti-icing/RWIS Version 2 CBT that was distributed in 2007 and the web-based program completed in 2012.
 - Evaluate completed NCHRP winter maintenance research projects for either updating the existing CBT or producing a separate CBT to achieve technology transfer.
 - Work with state DOTs on refining CBTs for use in an interactive computerized classroom.
 - Complete the implementation of the Internet Browser Format and SCORM-compliant version of the CBT and evaluate it for improvements that will enhance its deliverability and compatibility with agency learning management systems.
 - Maintenance Operations Training (Six CBTs developed in collaboration with the Clear Roads Consortium).

- **Explore opportunities to integrate sustainability into winter operations**
 - Promote FHWA's Sustainable Highway Self-Evaluation Tool (see <http://www.sustainablehighways.org>).
 - Promote outcomes from APWA's "Sustainability in Public Works Conference" held in Portland, Oregon, June 27-29, 2011 (www.apwa.net/sustainability) and their 2012 Sustainability in Public Works Conference held on June 25-27, 2012.
 - Support the proposed NCHRP Problem Statement to investigate financial sustainability through asset management principals
 - Seek out examples of winter maintenance practices and programs that demonstrate sustainability and post them on the Center for Environmental Excellence by AASHTO website.
 - Continue coordination through web meetings with PIARC B-5 Committee and their winter service sustainability initiatives..

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2011 Winter Maintenance Peer Exchange Prioritized Research Needs Statements

Progress Updated to June 2012. Questions or update information can be directed to Lee Smithson, 515-239-1519 or leland.smithson@dot.iowa.gov

Rank	Short Title	Number of Votes	Problem Statement	Research Group	Progress to Date
1	How Effective Are Existing Application Rates for Salt?	46	Look at how effective the existing application rates are for salt. Address what measurable differences exist from 250lbs/ lane mile compared to 300 lbs/ lane mile. The goal is to develop and implement consistent application rates that gather acceptance from a level of services perspective as well as the operational forces. It is difficult to communicate these significant differences of material application rates without good data to support it.	Clear Roads/	-Salt gradation being considered in RNS #24 may have some overlapping attributes that need to be considered in this RNS. Update: This project has been selected for funding in 2012 by Clear Roads. Monty Mills <millsm@wsdot.wa.gov> and Paul Brown <Paul.Brown@mhd.state.ma.us> are the project champions.
2	Synthesis of Outsourcing Benefits & Risks	31	Many state agencies are getting pushed to contract more snow and ice control operations to private vendors. There are risks and benefits to doing this. Our question is where can we go to consult with another state or states that have done this or tried to do this? Are there reports, papers, syntheses that are available for review?	Clear Roads/ SICOP	Clear Roads determined this is a good candidate for a Synthesis Report. Note: Outsourcing goes beyond snow and ice, however, it should focus on snow and ice, while also looking at other areas for additional information. SICOP is also interested in pursuing this. Caleb Dobbins <cdobbins@dot.state.nh.us> is the contact person for Clear Roads. NCHRP 20-7, Task 329 is currently being organized and should address portions of this research needs. Gabe Guevara <gabriel.guevara@dot.gov> is the SICOP contact person.
			Determine the uses and application of social media tools in communicating winter maintenance to the public. Of specific concern is understanding new technologies, social		Contact persons for Clear Roads are Tim Peters <Tim.Peters@illinois.gov> and Allen Williams <Allen.Williams@VDOT.Virginia.gov>, for Aurora <Leigh Sturges <leighsturges@utah.gov> and Travis Lutman <tlutman@nd.gov>, and for SICOP Rick Nelson <melson@dot.state.nv.us> and Wilfrid Nixon <wilfrid-nixon@uiowa.edu>. Clear Roads piloted a Facebook and Twitter page and found that it was not an effective way to promote research to our target audience, because so many agencies block access to these sites. There is likely still a role for social media in winter operations, but not for promoting research per

AASHTO Winter Maintenance Technical Service Program (WMTSP/SICOP) [Continued]

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Documents

The following documents are available:

[NCHRP Report 708 “A Guide for Sustainability Performance Measurement for Transportation Agencies”](#). This guidebook provides a practical and easy-to-use approach to identify and apply sustainability performance measures to produce a new lens through which decision makers can view their agency’s performance. A reference compendium of performance measures has also been provided. | Posted July 30, 2012
[Direct link to report](#)

[NCHRP Synthesis 389, “Performance-Based Contracting for Maintenance” \(PBMC\)](#). This report explores experience with PBMC in places where it has been adopted, including such issues as whether it has the potential to reduce costs and improve maintenance levels of service. Methods for implementing PBMC are also discussed. The report is likely to be useful for those agencies who are evaluating whether to include PBMC in their highway maintenance program. | Posted July 30, 2012

[NCHRP Project 6-17, “Performance Measures for Snow and Ice Control Operations”](#). The study provides information on performance measures for snow and ice control operations. A survey of winter maintenance practices in the United States, Canada, Europe, and Japan revealed that preferred performance measures are generally those related to accounting and management systems. The survey identified 4 input parameters, 5 output parameters, and 11 outcome measures used by public agencies to measure snow and ice control performance. The information obtained in this project provides a basis for evaluating performance measures used for snow and ice control operations. | Posted July 30, 2012

[AASHTO Center for Environmental Excellence](#) has been developed to promote environmental stewardship and to encourage innovative ways to streamline the transportation delivery process. | Posted July 30, 2012

[NCHRP Project 20-07, Task 287, Grand Challenges: A Research Plan for Winter Maintenance](#). This report identifies the “grand challenges” that face winter maintenance operations and outlines the research that will be needed to address these challenges. | Posted January 19, 2011

[Update of the AASHTO Guide for Environmental Control](#). | Posted August 30, 2010

AASHTO Winter Maintenance Technical Service Program (WMTSP/SICOP) [Continued]

- Click on “Links to Agency Web Sites”
 - Click on “Clear Roads Web Site”
 - Welcome page should appear, Click on “About Clear Roads”
 - Click on “Research Projects” in left column
 - Click twice on “Back Arrow” upper left of tool bar which will take your back to the AASHTO “Links to Agency Web Sites”
 - Click on “TRB Winter Maintenance Committee”
<http://sites.google.com/site/trbcommitteeahd65/>



research for winter highway maintenance



Welcome

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Requests for Proposal/Information

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Synthesis Reports

Winter Maintenance News

Links/Resources

Product Experience

Winter Safety Campaign

Multiple Blade Plow Prototypes

Contact Us

Members Only



Clear Roads is an ongoing pooled fund research project aimed at rigorous testing of winter maintenance materials, equipment and methods for use by highway maintenance crews. Launched in 2004 by experienced winter maintenance professionals, Clear Roads responds to a need for research based on practical experience.

By conducting structured field testing and evaluation across a range of winter conditions and highway maintenance organizational structures, Clear Roads projects will deliver immediately useful data and recommendations on the effectiveness, ease of use, optimum application rates, durability, and more, of many advanced winter operations technologies.



Clear Roads Goals:

- * Work with the nation's premier researchers
- * Evaluate winter maintenance materials, equipment and methods under real-world conditions
- * Develop specifications and recommendations
- * Study and promote innovative techniques and technologies that will save agencies money, improve safety and increase efficiency
- * Make results quickly available to interested agencies

Project Administration

Clear Roads is pooled fund project [#TPF-5\(218\)](#). Minnesota is the lead state and has contracted with CTC & Associates LLC to provide administration, project management and information services.

[CTC's Report of Progress - March 31, 2012](#)

Annual Work Plan

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Research Projects

The Clear Roads Technical Advisory Committee proposes new research projects for funding at the beginning of every year. Below is a list of current research efforts.

Projects to Award Soon

1. Establishing Effective Salt and Anti-icing Application Rates
2. Understanding the Chemical and Mechanical Performance of Snow and Ice Control Agents on Specialized Pavement Types
3. Snowplow Operator and Supervisor Training
4. Comparison of Materials Distribution Systems - Phase I
5. Improving Snowplow Design

Research in Progress

1. [Environmental Factors Causing Fatigue in Snowplow Operators](#)
2. [Snow Removal at Extreme Temperatures – Phase 1](#)
3. [Cost-benefit Analysis Toolkit Phase II](#)
4. [Determining the Toxicity of Deicing Materials](#)
5. [Development of a Totally Automated Spreading System](#)
6. [Understanding the True Costs of Snow and Ice Control Operations](#)
7. [Mapping Weather Severity Zones](#)

Completed Projects

1. [Developing a Training Video for Field Testing of Deicing Materials](#) (December 2011)
2. [Development of a Toolkit for Cost-benefit Analysis of Specific Winter Maintenance Practices, Equipment and Operations](#) (November 2010)
3. [Identifying the Parameters for Effective Implementation of Liquid-only Plow Routes](#) (September 2010)
4. [Development of Standardized Test Procedures for Carbide Insert Snowplow Blade Wear](#) (September 2010)

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TRB Committee “Winter Maintenance” (AHD65)

This committee promotes research that will provide winter maintenance professionals with current and reliable information for effective procurement and implementation of materials, technologies and processes for controlling snow and ice on highways. The committee does this by promoting and facilitating research, technology transfer and education in technical areas that impact winter maintenance operations. Subjects that are important to the committee include: physical properties, geographical distribution and management of winter precipitation (frost, ice, snow, fog) and frozen ground, and their impact on road safety, traffic flow and traffic control; the management of winter maintenance forces through performance measures and standards of service; storage of winter materials and their environmental impacts; mobile and road-based equipment for monitoring and controlling snow and ice accumulation.

<https://sites.google.com/site/trbcommitteeahd65/>

AASHTO Winter Maintenance Technical Service Program (WMTSP/SICOP) [Continued]

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 - Click on last Agency Link
<http://www.trb.org/CommitteandPanels/OnlineDirectory.aspx#DetailsType=Committee&ID=3489>

TRB Committee “Surface Transportation Weather” (AH010)

SCOPE: This committee is concerned with the exchange of information on the effects of weather on all modes of surface transportation both within and between the transportation and meteorological communities; identification and development of research needs and technology transfer on techniques to better manage surface transportation; and promotion of efforts to minimize the impacts of weather and maximize safety and mobility.

<http://www.trb.org/CommitteeandPanels/OnlineDirectory.aspx>

Closing & Questions

- AASHTO Winter Maintenance Technical Service Program/SICOP
- Clear Roads
- TRB Committees
 - Winter Maintenance
 - Surface Transportation Weather