




Overview of Winter Operations Research Groups Aurora, Clear Roads, PNS, SICOP


<http://www.aurora-program.org/>
<http://www.clearroads.org/>
<http://www.wsdot.wa.gov/partners/pns/>
<http://sicop.net/?siteid=88>

What is Aurora?



Aurora is an international partnership of public agencies who work together to perform collaborative **research** activities, **development**, **advocacy**, and **deployment** in the area of road weather information systems (RWIS).




Aurora Participants



Iowa Dot (Administrator) Ontario MT Quebec MT Swedish NRA Alaska DOT Ohio DOT Pennsylvania DOT North Dakota DOT	Utah DOT Virginia DOT Minnesota DOT Wisconsin DOT New York DOT Illinois DOT Michigan DOT Indiana DOT Nevada DOT
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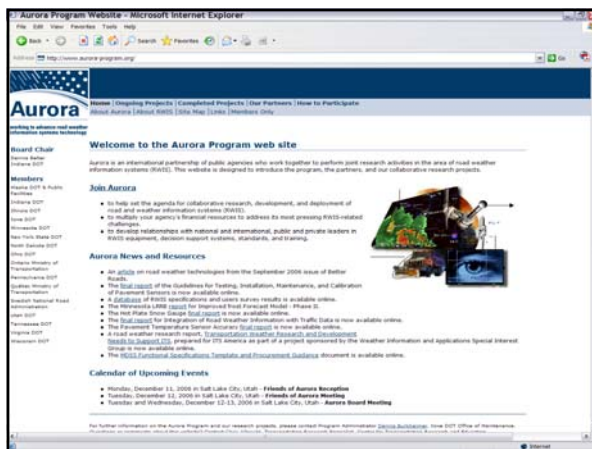



Aurora Participants

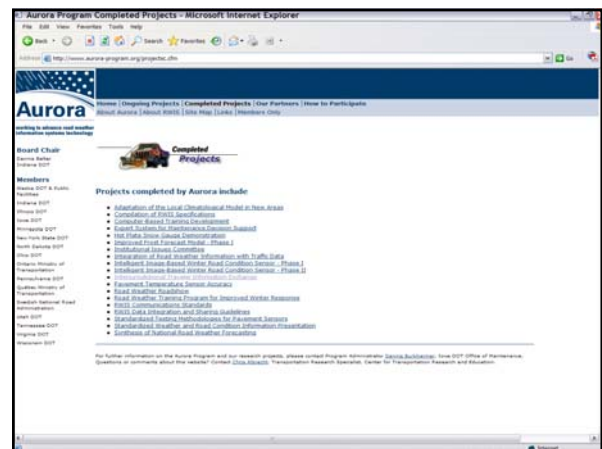


Affiliates/Partners:


National Center for Atmospheric Research (NCAR) Meteorological Service of Canada Swedish Meteorological and Hydrological Institute Penn State University University of North Dakota	University of Minnesota University of Wisconsin Purdue University Massachusetts Institute of Technology Iowa State University Ohio University University of Waterloo University of Gotenburg
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The screenshot shows the Aurora Program website homepage. It features a navigation menu with links for Home, Ongoing Projects, Completed Projects, Our Partners, and How to Participate. The main content area includes a 'Welcome to the Aurora Program web site' message, a 'Join Aurora' section with bullet points about collaborative research and funding, and an 'Aurora News and Resources' section listing various reports and documents. A 'Calendar of Upcoming Events' is also visible at the bottom.






The screenshot shows the 'Completed Projects' page of the Aurora Program website. It lists several projects that have been completed, including 'Validation of the Road Operational Model of Snow Depth', 'Validation of RWIS Identification', and 'Evaluation of Road Weather Information Systems'. Each project entry includes a brief description and a link to the project page.







Ongoing Projects:

- 2011 National Winter Maintenance Peer Exchange
- Benchmarking the Performance of RWIS Forecasts
- Benefit/Cost Analysis and Instruction for Migrating to Open RWIS
- Co-Funding Winter Road Research
- Cold Weather Testing of the Halliday Road Grip Unit
- Determining RPU and Sensor Failure
- Development and Demonstration of a Freezing Drizzle Algorithm for ESS
- Development of a National Road Weather Testing Program

What is Clear Roads?


- Pooled fund project #TPF-5(218)
- Began in 2004
- 20 current members:
CO, IA, IL, IN, MA, ME, MI, MO, MN, ND, NE, NH, NY, OH, PA, UT, VA, WA, WI, WY
- Focus on winter operations research with practical applications, field testing and usable results
- New projects funded every. Members contribute \$25K annually. 100% SPR funds can be used


Completed Research

- Identifying the Parameters for Effective Implementation of Liquid-only Plow Routes
- Synthesis of Best Practices for Eliminating Fogging and Icing on Winter Maintenance Vehicles
- Calibration Accuracy of Manual and Ground-Speed-Control Spreaders
- Determining Effectiveness of Deicing Materials and Procedures
- Developing and Evaluating Safe Winter Driving Messages
- Development of Standardized Test Procedures for Evaluating Deicing Chemicals
- Development of Interface Specifications for Mobile Data Platforms on DOT Vehicles
- Development of Standardized Test Procedures for Carbide Insert Snowplow Blade Wear
- Correlating Lab Testing and Field Performance for Deicing and Anti-icing Chemicals (Phase I)
- Development of a Toolkit for Cost-benefit Analysis of Specific Winter Maintenance Practices, Equipment and Operations








Research in Progress

Developing a Training Video for Field Testing Deicing Materials

- A step-by-step instructional video that demonstrates the three levels of field testing that can be performed to determine the effectiveness of a deicing chemical.
- A DVD that will be distributed to state DOTs for use in training their maintenance staff on basic field testing.


Research Starting in 2011

- Understanding the True Costs of Snow and Ice Control Operations
- Mapping Weather Severity Zones
- Cost-benefit Analysis Toolkit Phase 2
- Determining the Toxicity of Deicing Materials
- Environmental Factors Causing Fatigue in Snowplow Operators
- Snow Removal at Extreme Temperatures – Phase 1
- Improved Snowplow Design and Material Used in Construction on Both Front and Underbody Plows
- Development of a Totally Automated Spreading System – Phase 1







Partnership Projects

National Winter Maintenance Peer Exchange
Collaboration with the Aurora pooled fund, Snow and Ice Pooled Fund Cooperative Program, FHWA, and the Pacific Northwest Snowfighters.

National Winter Safety Campaign
A national multimedia campaign designed to educate drivers about the importance of driving safely in winter conditions.

Computer-Based Training
Developing computer-based training modules that help train snow plow drivers, maintenance crews and others.

Snowplow Design
Conduct research on optimum snowplow design.







Technology Transfer Leadership

Winter Maintenance E-Newsletter
A bi-monthly e-newsletter that highlights applications of winter maintenance research and technology and the latest transportation research reports by state DOTs, universities, TRB and FHWA.

Product Experience Feedback
An informal survey that allows states to share experiences with new or existing products.






Clear Roads Web Site

www.clearroads.org

Details about Clear Roads

- How to get involved
- Goals and results of research projects
- Meeting minutes and project proposals

Resources for winter highway operations

- Quarterly winter maintenance e-newsletter (Research & news from around the country)
- Downloadable Winter Driver Safety Campaign materials
- Product experience survey and results
- Synthesis reports on winter maintenance topics
- Listing of TRB papers related to winter operations







For more information:

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www.clearroads.org www.pooledfund.org




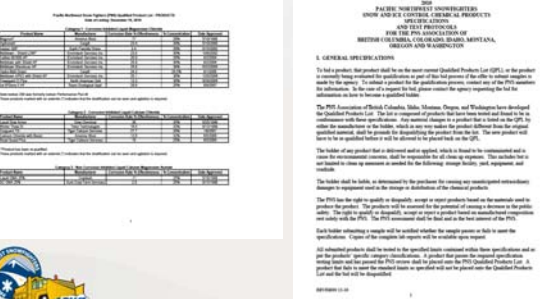
Transportation agencies within the states of Washington, Oregon, Montana, Colorado and Idaho and the provinces of British Columbia formed a committee several years ago to develop specifications for chemicals related to snow and ice control.

By consolidating resources and purchasing power of the member agencies, the association leverages the quality and cost of these products. The association encourages the development of contracts that specify, only products on the PNS Qualified Product List can be bid.




The mission of the PNS is to provide specifications for the highest quality products balancing quality of environment with providing the safest possible transportation system and maximum mobility for the traveling public during snow and ice conditions, within reasonable budgetary, product performance and environmental constraints.

The association is comprised of technical experts in the fields of chemistry, environment, maintenance operations and management, insurance law and claims, public affairs and purchasing. The association has been privileged to work with the foremost pioneers in deicing technology.

The document shows a table with columns for product name, manufacturer, and other details. Below the table, there is a section titled 'GENERAL SPECIFICATIONS' which outlines the requirements for the products, including environmental considerations and testing procedures.

PNS Research Proposals



Equipment corrosion study, possible Pooled Fund



Evaluating Longevity and Driver Performance Study





Publications

Anti-icing, Deicing and Pre-wetting

Applying a proactive approach where chemicals are added to the roadway in advance of freezing weather conditions... (text continues)

Benefits of Anti-icing, Deicing, and Pre-wetting Compared to Traditional Methods

- Reduced use of abrasives
- Lower accident rates
- Better performance
- Better vehicle mobility
- Reduced maintenance when costs
- Fewer winter personnel

The Pacific Northwest Snowfighters Association

The mission of the Pacific Northwest Snowfighters Association (PNSA) is to coordinate and coordinate safety, environmental preservation, infrastructure protection, and job training and development.

PNSA has developed specifications that can guide transportation agencies in the selection of chemical products for snow/ice control. Products that meet PNSA specifications must:


- Have a series of tests for chemical, physical, biological and performance and health standards.
- Be at least 70% less corrosive than road salt.


PNSA has become a recognized driver in establishing and implementing chemical products for snow and ice control throughout the state and province outside the Pacific Northwest has adopted the PNSA specifications.

Pacific Northwest Snowfighters

Leading the Way:



- Snow & Ice Specifications
- Material Testing
- Research
- Qualified Product List (QPL)





Pacific Northwest Snowfighters
www.wsdot.wa.gov/partners/pnsa/

Snow and Ice Pooled Fund Cooperative Program (SICOP) Website





What is SICOP?

SICOP is the Snow and Ice Pooled Fund Cooperative Program. It was developed by AASHTO (The American Association of State Highway and Transportation Officials)

"In order to experiment with snow and ice technology and systems not now in use in this nation", to determine their suitability to the United States and to help introduce the use of those with the most promise, the AASHTO Board of Directors endorses the concept of establishing a voluntary AASHTO Snow and Ice Pooled Fund.

SICOP is under the oversight of the Winter Maintenance Technical Service Program (WMTSP). The task of the WMTSP is to promulgate the Winter Maintenance Program (WMP). Recognizing that an effective winter maintenance program encompasses all streets, roads and highways.





Mission:

A 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.

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.





Goals:


The goals of the proposed WMP are to (1) sustain or improve levels of winter maintenance service with significant benefit/cost improvements, (2) provide an enhanced level of sustainability and environmental protection, and (3) place technology in service on operational maintenance sections within two winter seasons. Another highlight of WMP is that it brought all levels of government together to cooperatively work on these projects. The concept of funding was also unique in that all funding will be via a pooled funding mechanism.



Guiding Principles

Four guiding principles for SICOP are:

- 1) Discovering technology not now in general use.
- 2) Evaluating it.
- 3) Disseminating it in easily understood manner.
- 4) Taking a sustainable systems approach.



Accomplishments:

Computer Based Training Winter Maintenance.
AASHTO Guide for Snow & Ice Control.
NCHRP 20-7 Task 287 A Research Plan for Winter Maintenance.
2007 and 2009 Winter Peer Exchange.
And many more you will find them on the website.

**2011 Peer Exchange @ (WTI) Bozeman Montana.
September 19-21, 2011**

<http://www.westerntransportationinstitute.org/professionaldevelopment/peer-exchange/default.aspx>

