My Purpose Today

- A report card on winter operations research – specifically Clear Roads research

Clears Roads Goal is to provide

**hands-on research**

Winter Maintenance Research Initiatives

- SICOP
- PNS
- Aurora
- Clarus
- Clear Roads

What is Clear Roads?

National research program focused on winter highway operations

FHWA Pooled fund project #TPF-5(218)
Clear Roads

Applied research for winter maintenance

Rigorous testing of winter maintenance materials, equipment and methods

Emphasis on field testing, practical applications and usable results

What Do We Do

Research Projects
Partnership Projects
Transportation Synthesis Reports
Reports and Website

Technology transfer
Quarterly winter maintenance e-newsletter
Product evaluation results sharing

Accomplishments
• Three completed research projects
• Winter Driving Safety Campaign
• Winter Maintenance Peer Exchange 2007 & 2009
• Seven research projects in progress
• Three new projects this year
Partnership Projects

National Winter Maintenance Peer Exchange
National Winter Safety Campaign
Computer-Based Training
Snowplow Design Project

National Winter Maintenance Peer Exchange
Developed 97 winter operations research problem statements
Statements were assigned to pooled fund study
Several were sent to TRB for consideration

Multi-Blade Plow Prototype

Prototype Plows
Henderson, Henke, Flink, and Monroe built concept plows for evaluation
Plows were tested in Ohio, Indiana, Minnesota and Iowa

Research Projects
Ideas come from
National Winter Maintenance Peer Exchange
State DOT representatives
State DOT research programs

COMPLETED PROJECTS

• Synthesis of Best Practices for Eliminating Fogging and Icing on Winter Maintenance Vehicles
• Determining Effectiveness of Deicing Materials and Procedures
Featured Research Project

Calibration Accuracy of Manual and Ground-Speed-Controlled Spreaders
- Completed January 2008
- Results included a Calibration Guide for use in the field

Problem
Ground speed control systems used on deicing material spreading trucks have not been tested for accuracy, benefits and savings.

Objectives
- Document controller settings and materials usage.
- Develop guidelines for establishing and maintaining calibration.

www.clearroads.org

• Development of Standardized Test Procedures for Evaluating Deicing Chemicals

• Correlating Lab Testing and Field Performance for Deicing and Anti-icing Chemicals (Phase I)

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• Identifying the Parameters for Effective Implementation of Liquid-only Plow Routes

• Developing and Evaluating Safe Winter Driving Messages

Development of Standardized Test Procedures for Carbide Insert Snowplow Blade Wear

Ice and Snow ... Take it Slow
Don’t crowd the plow.
• Development of a Toolkit for Cost-benefit Analysis of Specific Winter Maintenance Practices, Equipment and Operations

• Development of Interface Specifications for Mobile Data Platforms on DOT Vehicles

Understanding the True Costs of Snow and Ice Control Operations

• Best Management Practices for Reducing Corrosion on Maintenance

New Projects

• Developing a Training Video for Field Testing of Deicing Materials

Resources for winter highway operations
• Quarterly winter maintenance e-newsletter (Research & news from around the country)
• Downloadable Winter Driver Safety Campaign materials
• Product evaluation survey and results
• Synthesis reports on winter maintenance topics
• Listing of TRB papers related to winter operations
Contact:
Paul Brown, Massachusetts Highway Department
(617) 973-7792
North American Snow Conference                                      April 20, 2010
Winter Maintenance Resources

**SICOP**
Web Site:  [http://www.sicop.net/](http://www.sicop.net/)
Contact: Rick Nelson, Nevada DOT 775-888-7000

**CLEAR ROADS**
Web Site: [http://clearroads.org/](http://clearroads.org/)
Contact: Paul Brown, Massachusetts Highway Department  617 973-7792

**AURORA**
Contact: Carol Culver Iowa DOT 515-239-1208

**CLARUS**
Web Site: [http://www.clarusinitiative.org/](http://www.clarusinitiative.org/)
Contact: Ralph Patterson, Utah DOT 801-887-3735

**PNS**  Pacific Northwest Snowfighters
Web Site: [http://www.wsdot.wa.gov/partners/pns/](http://www.wsdot.wa.gov/partners/pns/)
Contact: Monty Mills, Washington DOT 360 705-7803

**CBT**  Winter Operations Computer Based Training
Contact: Your state LTAP center

**Ice and Snow, Take It Slow**
Web Site:  [http://clearroads.org/driver-safety-resources.html](http://clearroads.org/driver-safety-resources.html)

**Multiblade Plows**
Flink Company - [www.flinkco.com](http://www.flinkco.com)
Contact Dan Rohde at  danr@flinkco.com

Henderson Truck Equipment -  [www.henderson-mfg.com](http://www.henderson-mfg.com)
Contact Mark Hollinrake at  mhollinrake@henderson-mfg.com

Henke Manufacturing Company -  [www.henkemfg.com](http://www.henkemfg.com)
Contact Steve Kullberg at  skullberg@henkemfg.com

Monroe Truck Equipment -  [www.monroetruck.com](http://www.monroetruck.com)
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