Clear Roads Pooled Fund

Mid Continent Transportation Research Symposium
September 2022

Craig Bargfrede
Winter Operations Administrator
Iowa Department of Transportation

www.clearroads.org
Overview:

- Clear Roads Winter Highway Operations Pooled Fund is a national research consortium focused on rigorous testing of winter maintenance materials, equipment, and methods for use by highway maintenance staff.

- Began in 2004

- $25k annual contribution
Currently 37 states are members with Minnesota DOT serving as the lead agency:

AK  AZ  CA  CO  CT  DE  IA  ID  IL  IN  KS  MA  MD  ME  MI  MN  MO  MT  NE  ND  NH  NV  NY  OH  OK  OR  PA  RI  SD  TX  UT  VA  VT  WA  WI  WV  WY
Core Activities:

- Evaluate winter maintenance materials, equipment and methods.

- Study and promote innovative techniques and technologies.
Core Activities:

- Support technology transfer by developing practical field guides and training curriculum to promote the results of research projects.

- Develop specifications and recommendations.
Our Website: www.clearroads.org

- Go-to source for all program and project information
- Details on completed and in-progress research
  - All reports, guides, tools
  - Research briefs
  - Recorded closeout videos with investigator Q-and-A
- Winter maintenance news
- Meeting minutes

www.clearroads.org
Clear Roads Qualified Products List (QPL)

### Clear Roads Snow and Ice Control Chemical Product Program

**Guidance Document for Material Qualified Products List, Specifications, Test Methods, and Product Purchasing**

*2020 (Updated October 2021)*

---

**Category 1 - Corrosion Inhibited Liquid Magnesium Chloride**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Manufacturer</th>
<th>Corrosion Rate % Effectiveness</th>
<th>Concentration</th>
<th>Date Approved</th>
<th>Expiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iceban 200®</td>
<td>Earth Friendly Chem.</td>
<td>8</td>
<td>26%</td>
<td>8/16/2003</td>
<td>12/31/2024</td>
</tr>
<tr>
<td>Caliber M1000 AP®</td>
<td>Envirotech Services Inc.</td>
<td>21</td>
<td>28%</td>
<td>8/2/2004</td>
<td>12/31/2024</td>
</tr>
<tr>
<td>Meltdown with Shield AP®</td>
<td>Envirotech Services Inc.</td>
<td>26</td>
<td>30%</td>
<td>8/2/2004</td>
<td>12/31/2024</td>
</tr>
<tr>
<td>Hydro-Melt Green</td>
<td>Cargill</td>
<td>24</td>
<td>28%</td>
<td>8/1/2005</td>
<td>12/31/2024</td>
</tr>
<tr>
<td>Meltdown APEX with Shield AP®</td>
<td>Envirotech Services Inc.</td>
<td>25</td>
<td>30%</td>
<td>1/25/2006</td>
<td>12/31/2024</td>
</tr>
<tr>
<td>Ice B’Gone II HF</td>
<td>Sears Ecological Appl.</td>
<td>29</td>
<td>25%</td>
<td>8/9/2007</td>
<td>12/31/2024</td>
</tr>
<tr>
<td>HydroMelt Liquid Deicer</td>
<td>Cargill</td>
<td>26</td>
<td>29%</td>
<td>8/15/2011</td>
<td>12/31/2024</td>
</tr>
</tbody>
</table>

**Date of Listing:** January 26, 2022

---

www.clearroads.org
New Research Projects

Comprehensive Guide to Pre-Wetting Application Rates and Methods
(James Morin, Washington)

The goal of this project is to determine the optimum pre-wetting rate (gallons per ton of dry material) in different delivery systems and spreader configurations.
New Research Projects

Best Management Practices for Liquid Chloride Storage and Pumping Systems
(Brian Burne, Maine)

The goal of this project is to document and share optimal system designs and management practices that contribute to safe, sustainable, and cost-effective liquid storage systems.
New Research Projects

Effects of Additives in Lowering the Freezing Point of Deicing Salts
(Rhett Arnell, Utah)

The goal of this project is to compare the eutectic points of various mixed salts (solid deicing salts with additives) to untreated salt to determine how well mixed salt products perform at lower temperatures.
New Research Projects

Synthesis: Corrosion and Connectors Don’t Mix
(Cliff Spoonemore, Wyoming)

This synthesis will identify various wing plow light setups/connectors used by Clear Roads members.
New Research Projects

Evaluation of Direct Liquid Application of Salt Brine Versus Granular Salt as Measured Through Various Performance Metrics

(Emil Juni, Wisconsin)

Collect and synthesize information about the different outcomes using direct liquid application (salt brine, salt brine with additives) and granular salt using performance and safety metrics.
New Research Projects

Use of Dashboards for Winter Operations
(Kevin Duby, Arizona)

Understand how dashboards are used to track and manage winter operations.

Understand how they can be used to communicate material use and performance in meeting level of service goals and at what cost.
Annual Survey of State Winter Maintenance Data (Year 8)

Winter 2020–21
DRY MATERIALS: Salt applied (tons)

Winter 2020–21
SEVERITY: Statewide average AWSSI

(Please select metrics at right to populate the graph below)

NOTE:
See comments on Tab 2. All Survey Data for individual state clarifications:

- Resources - column AH
- Materials - columns AN, AV and BA
- Costs - column BI

www.clearroads.org
Recently Completed Projects

Visit all Clear Roads research at:
https://clearroads.org/all-research-and-synthesis-projects/

19-01 Expanding Application Rate Guidance for Salt Brine Blends for Direct Liquid Application and Anti-icing
Recently Completed Projects (cont’d)

19-02 Recruitment and Retention of Highway Maintenance Workers
20-01 Entry Level Driver Training (CDL)

To learn more or to request access to the training modules, please visit:
http://clearroads.org/request-for-training-modules-form/
Recently Completed Projects (cont’d)

19-03 Measuring the Efficiencies of Tow Plows and Wing Plows
Winter Driving Safety

This website serves as an information clearinghouse to which state DOTs can direct the traveling public from their own DOT websites.

Web address: https://clearroads.org/winter-driving-safety/
Our Website: www.clearroads.org

- Meeting Minutes http://clearroads.org/meetings/
- Go-to source for all program and project information
- Details on completed and in-progress research
  - All reports, guides, tools
  - Research briefs
  - Recorded closeout videos with investigator Q-and-A
- Winter maintenance news
- Meeting minutes

www.clearroads.org
For More Information

Clear Roads Advisory Chair
Patti Caswell
Oregon DOT
Patti.CASWELL@odot.state.or.us
503-986-3008

Clear Roads Administration
Greg Waidley
CTC & Associates LLC
greg.waidley@ctcandassociates.com
608-490-0552

Lead Agency Contacts
Tom Peters (technical)
Minnesota DOT
tom.peters@state.mn.us
651-366-3578

Katie Walker (administration)
Minnesota DOT
katie.walker@state.mn.us
651-366-3765

www.clearroads.org
Questions??