

**2022 BCRRRA Conference Frost Workshop**  
**“Managing Impact of Frost on Pavement Systems”**  
**Monday June 27, 2022**

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9:00 am	<b>Welcome</b> - Ben Worel (MnDOT)
9:15 am - 10:25 am (70 min)	<b>Monitoring Frost Action on Roadways</b> (Moderator Timo Saarenketo, Roadscanners, Finland) <ol style="list-style-type: none"> <li>1. <u>Measuring frost and frost action on roads</u> <ul style="list-style-type: none"> <li>• Timo Saarenketo, Roadscanners, Finland</li> </ul> </li> <li>2. <u>Winter maintenance and frost problems</u> <ul style="list-style-type: none"> <li>• Tomi Herronen, Roadscanners, Finland</li> </ul> </li> <li>3. <u>Frost Monitoring at MnROAD</u> <ul style="list-style-type: none"> <li>• Ben Worel, Minnesota Department of Transportation, USA</li> </ul> </li> </ol>
10:25 am - 11:20 am (55 min)	<b>HMA Seasonal Debonding</b> (Moderator J.-P. Bilodeau, Université Laval) <ol style="list-style-type: none"> <li>1. Behavior of partially saturated asphalt concrete pavement under freezing and accelerated pavement testing conditions: <ul style="list-style-type: none"> <li>• Part 1: Test pit construction, instrumentation and mechanical response <ul style="list-style-type: none"> <li>○ Jean-Pascal Bilodeau, Université Laval, Canada</li> </ul> </li> <li>• Part 2 : Test analysis using FE modeling for the thermal response and Viscoroute© for the mechanical response under moving loads <ul style="list-style-type: none"> <li>○ Olivier Chupin, Université Gustave Eiffel, France</li> </ul> </li> </ul> </li> <li>2. Freeze-thaw effect on flexible pavement interface <ul style="list-style-type: none"> <li>• Alan Carter, Ecole de Technologies Supérieure in Montréal, Canada</li> </ul> </li> </ol>
11:20 am – 11:35 am	<b>Break</b>
11:35 am - 1:00 pm (70 min)	<b>Seasonal/Frost Roadway Modelling</b> (Moderator Sigurdur Erlingsson, VTI, Sweden) <ol style="list-style-type: none"> <li>1. <u>Assessment of frost heave for mechanistic-empirical design</u> <ul style="list-style-type: none"> <li>• Jean-Pascal Bilodeau, Université Laval, Canada</li> </ul> </li> <li>2. <u>Frost heave prediction in M-E calculations – Sweden/Norway</u> <ul style="list-style-type: none"> <li>• Abubeker Ahmed, VTI, Sweden</li> </ul> </li> <li>3. <u>Correlating Air Freezing Index and Frost Penetration Depth – A Swedish Case Study</u> <ul style="list-style-type: none"> <li>• Sigurdur Erlingsson, VTI, Sweden</li> </ul> </li> </ol>
1:00 pm – 2:00 pm	<b>Adjourn / Lunch Monday</b> as noted on the BCRRRA website
No workshop on Frost Design planned for the afternoon from 2:00 to 4:30 pm as noted on the BCRRRA website	