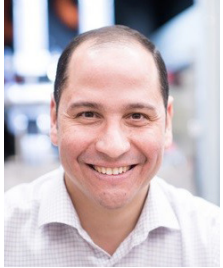




# UNIVERSITY TRANSPORTATION CENTER RESEARCH BRIEF

## Pavement Winter Operations in Cold Regions

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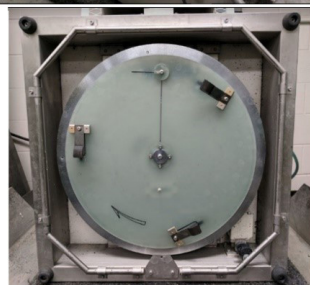
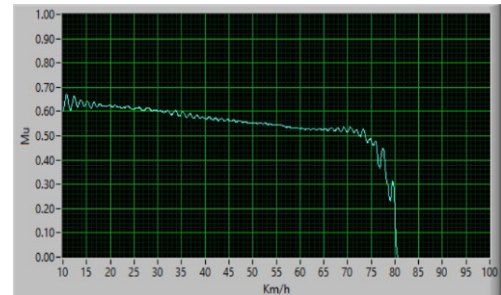


### Background

Several winter maintenance operations and techniques are used by transportation agencies to improve road safety. These techniques include the application of deicing and anti-icing chemicals combined with snow removal. Deicers are applied to melt and break the ice, while anti-icing is applied before ice formation to prevent and weaken the bond between the pavement surface and ice. The application of anti-icing has several advantages over deicing operations including reduced cost and efforts to remove the snow and reduced negative impacts on the environment. The selection of proper type as well as application rate of both deicing and anti-icing materials is necessary for optimal performance. The lack of test methods used to evaluate the effectiveness of different materials and application rates limit viable options for effective winter maintenance operations.

### Research Project

The proposed study will use a new laboratory testing protocol to evaluate the performance of different deicing and anti-icing materials at different conditions for efficient winter maintenance operations. This study has two main objectives: 1) develop and evaluate a new laboratory testing protocol that can be used to evaluate the effectiveness of various deicing and anti-icing chemicals at similar conditions in the field, 2) develop guidelines and recommendations for anti-icing and deicing material selection and proper application rate. The outcome of this study will assist the transportation agencies to make informed decisions that lead to efficient winter maintenance operations.



### ABOUT THE AUTHORS

The research team consisted of Emad Kassem of the University of Idaho.

### ABOUT THE FUNDERS

This research was funded by the Pacific Northwest Transportation Consortium, with additional support from the University of Idaho.

### EXPECTED DATE OF COMPLETION

August 2022

### FOR MORE INFORMATION

<http://depts.washington.edu/pactrans/research/projects/pavement-winter-operations-in-cold-regions/>