

UTC Project Information	
Project Title	Measuring Dispersal and Tracking of Anti-Icing and Deicing Chemicals using In-Situ Hyperspectral Data – Phase II: In-Situ Terrestrial Field Data Collection
University	University of Alaska Fairbanks
Principal Investigator	Nathan Belz
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans \$67,000 Alaska DOT \$67,000
Total Project Cost	\$134,000
Agency ID or Contract Number	69A3551747110
Start and End Dates	September 1, 2018-August 31, 2020
Brief Description of Research Project	<p>The management of anti-icing and deicing efforts are critical for mobility and safety (Kuemmel & Hanbali, 1992) of travel during the winter season in cold climates. The statewide cost of a winter road closure has been estimated to be an average of \$700 million per day (IHS, 2015). The use and application of salt, sand and related mixtures and derivatives have proven to be highly effective for controlling or removing the development of ice on the roadway surface. Although ample research exists indicating the way in which application method, application rate and efficacy of mix contents can vary depending on temperature and surface conditions. There is also substantial research on environmental impacts to soil and groundwater from anti-icing and deicing applications, as well as the corrosive properties of different types of chlorides. However, there is little if any research to suggest the longevity and dispersal of antiicing and deicing compounds after they have been applied to the roadway surface (i.e., how long does it stay in place and where does it go post-application?).</p> <p>The objectives of this project are threefold. First, develop a robust in-field sampling plan to measure anti-icing and deicing chemical concentrations under varied environmental, geometric, and volumetric conditions. Second, conduct the field data collection. Third, develop and conduct a robust sampling strategy to quantify the amount of anti-icing and deicing chemical loss due to imposed processes. Lastly, use these findings to inform and improve winter maintenance efforts and strategies.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	
<p>Impacts/Benefits of Implementation (actual, or anticipated)</p>	
<p>Web Links</p> <ul style="list-style-type: none">• Reports• Project Website	