

DRISI

CALTRANS DIVISION OF RESEARCH,
INNOVATION AND SYSTEM INFORMATION

Research Results

Maintenance

JULY 2023

Project Title:

Caltrans seeks to evaluate a snow melter for winter operations.

Task Number: 4133

Start Date: October 1, 2022

Completion Date: July 30, 2023

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Evaluation of a Portable Snow Melter for Use in Caltrans Maintenance Yards

This project researched a snow melter system to improve snow clearing operations in District 3.

WHAT WAS THE NEED?

The California Department of Transportation (Caltrans) must remove snow from its maintenance yards to prevent accumulations from impacting work. Current operations involve loading snow into trailers, then hauling it to a remote location off-site to be unloaded. This requires numerous staff and time to operate the necessary equipment and to shovel, then transport snow. Use of a snow melter system held the potential to free up staff, reduce maintenance and operation costs of trucks hauling snow, and reduce risk involved with transporting snow.

WHAT WAS OUR GOAL?

The goal of this project was to determine if use of a snow melter system could reduce safety risks to staff and reduce overall operational costs of snow removal.

WHAT DID WE DO?

This project assessed the suitability of a snow melter system for Caltrans operations with the Division of Maintenance agreeing to fund this project. Under this contracted research, the UC Davis Advanced Highway Maintenance and Construction Technology (AHMCT) Research Center identified and procured a snow melter system suited to Caltrans needs. The researchers then developed a list of features to monitor for evaluation, supported field testing, obtained operator feedback, and completed a summary report.



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WHAT WAS THE OUTCOME?

After evaluations and obtaining operator feedback, the research results indicated that current operations at the test site were more efficient than the snow melter system due to environmental restrictions limiting the amount and temperature of discharged water in the Tahoe basin in addition to system cleanout time due to sand utilization within the yard. It was determined that yards that do not use sand would decrease the system cleanout frequency. The snow melter system will be placed at a different yard this winter for continued use by Caltrans maintenance crews.

WHAT IS THE BENEFIT?

Use of a commercially available snow melter system could free up staff to perform other pressing winter maintenance tasks, reduce wear and tear on haul trucks, reduce fuel costs, and reduce the possibility of collisions occurring while transporting snow off-site, increasing safety for both Caltrans and general traveling public. A portable system has the potential of supporting operations in multiple facilities in a region and may allow for more efficient removal in the districts.

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