



SUSTAINABLE ROAD SALTING PRACTICES



MEASURE PAVEMENT TEMPERATURE



By measuring pavement temperatures, snow fighters can know whether it is too cold for rock salt to be effective or if salt is not needed as pavement temperatures are above freezing. The product most commonly used to prevent ice from forming on roads and other hard surfaces is sodium chloride. Sodium chloride is only effective at reducing the freezing point of water down to pavement temperatures of 15 F. Alternatively, if pavement temperatures are above freezing, no salt is needed.



BENEFITS

- By measuring pavement temperatures snow fighters can reduce salt use by only spreading salt when it is needed and when it will work to prevent ice formation on surfaces.
- Using less salt saves money and helps keep water bodies clean, vegetation alive, and soils healthy.

CONSIDERATIONS

- Pavement temperatures can be measured automatically using an air-ground temperature sensor or manually using an infrared thermometer.
- Air-ground temperature sensors provide real time, site-specific information while a truck is in motion, allowing precision salting based on local conditions.



CHALLENGES

- While relatively economical, air-ground temperature sensors require installation and set-up.
- Handheld infrared thermometers may be most useful to those who maintain smaller surfaces as they require the user to step out of the truck to measure pavement temperature.

COSTS

\$500-\$1000 per sensor; \$20 - \$30 for a handheld infrared thermometer

Pricing varies based on accuracy, range, ability to integrate with other systems, brand, and material.



COMPANIES

The companies listed below sell air-ground temperature sensors. Infrared thermometers can be sourced at a variety of online vendors and local stores.

- [Universal Truck Equipment](#), [RoadWatch®](#) Sensor
- [Vaisala](#), Mobile Detector MD30
- [Vision Design](#), Road Temperature Sensor

*Companies listed may offer additional products not included here. In addition, other companies not included in the table may carry similar products. Listing does not constitute endorsement on the part of the University of Vermont, Lake Champlain Sea Grant, or NOAA. Information is provided for educational purposes only.

LOCATIONS

The following communities and businesses are measuring pavement temperatures in Vermont and the Lake Champlain Basin of New York:

- Colchester
- Hyde Park - view [this video](#) about Hyde Park's success at reducing road salt use by 40%, in part, by using air-ground temperature sensors.
- Milton
- South Burlington
- Williston

Does your business or community measure pavement temperatures and want to be listed here and on the Lake Champlain Sea Grant website to share your story? Contact us at seagrant@uvm.edu to let us know.

Development of this information sheet was supported in part using Federal funds under NA24OARX417C0145 from the National Oceanic and Atmospheric Administration National Sea Grant College Program, and U.S. Department of Commerce. This research was also supported in part using funds from the University of Vermont Extension. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of Sea Grant, NOAA, the U.S. Department of Commerce, or UVM Extension.