

## *Snow & Ice management Strategies for Businesses in Burlington*

*Departments of Public Works & Conservation*

### *Anti-icing*

Anti-icing using brine or an alternative product is an efficient and popular means of preventing ice-pavement bonding. Salt, sitting on the paved surface, is inert unless moisture is introduced and comes in contact with the granular rock salt. Once it starts to snow, the moisture causes the salt to dissolve into solution. The resulting salt brine prevents ice and snow from bonding with the pavement surface. Since no bonding takes place, once plowing operations commence the snow or slush is easily removed. This leaves a cleaner surface than if you plow the site after the snow and ice has bonded to the pavement.

Anti-icing can reduce the amount of salt used in a storm by half.

### *Timing is crucial*

Ideally, brine is sprayed as an anti-icing treatment prior to the storm's arrival. If that is not possible, then salt should be spread as soon as a storm begins in order to prevent bonding of snow or ice to the pavement. The salt will quickly produce brine or keep snow at a texture that allows for efficient plowing. The melting action of salt applied early in a

storm works from the pavement surface up so snow and ice do not form hardpack.

### *Make your own brine or ask your contractor to make and apply brine*

Add enough salt (roughly 2.5lb salt per gallon of water) to produce a 23.3% solution, which freezes at around 0 degrees. Mix the brine until all of the salt is dissolved.

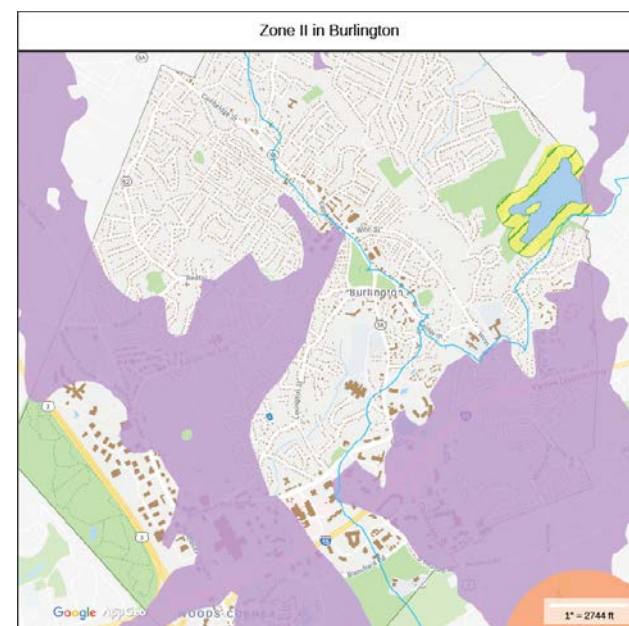
Using a masonry sprayer, apply the liquid several hours before a storm. Try an application rate of 0.25-0.5 gallons to a 10' by 50' area and adjust the application rate



based on the performance. Use a stream nozzle instead of a fan tip and have a filter in your dispersal system to prevent blockages.

### *Salt Storage*

Uncovered storage of salt is forbidden by Massachusetts General Law Chapter 85, section 7A in areas that would threaten water supplies. The Drinking Water Regulations, 310 CMR 22.21(2)(b), also restrict deicing chemical storage within wellhead protection areas (Zone I and Zone II) for public water supply wells "unless such storage is within a structure designed to prevent the generation and escape of contaminated runoff or leachate."



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Components of an "environment-friendly" roadway deicing salt storage facility include:

- a flat site;
- adequate space for salt piles;
- storage on a pad (impervious/paved area);
- storage under a roof; and
- runoff collection/containment.

### *Commercial Salt Application*

Rock salt (NaCl) is the least corrosive ice melting agent. It is most effective when pavement temperatures are 20 degrees or higher.

Calcium chloride and magnesium chloride are effective below 20 degrees but are more costly and corrosive than rock salt. Extended use may result in pavement damage.

### *Equipment calibration*

Application equipment must be calibrated regularly to ensure operation is safe and sustainable. Or ask to see your contractor's calibration chart. Spreaders should be calibrated with the material to be used.

*Find more information about the strategies described here in the Snowfighter's Handbook <https://tinyurl.com/ybqclemn>*

### **Salt application rates**

<b>One pound per 100 feet</b>	<b>4.5 pounds per 100 feet</b>	<b>8.5 pounds per 100 feet</b>
Effective for residential sidewalk application or general application when the temperature is 25 degrees or above.	Most commonly used home and small business application rate	Commercial application rate, which is usually accomplished by spreader equipment

### *Public Safety & Environmental Impact*

Protecting public safety in icy conditions is a common concern. This often leads businesses and snow removal contractors to liberally apply salt products to ice-covered sidewalks and parking lots. The hidden costs of over-application is often borne by the environment.

When road salt dissolves in water, the chloride molecules easily move with water flow and are not retained by the soil. Chemical reactions, evaporation or vegetation do not remove chloride in significant quantities. Therefore, nearly all of the chloride applied as road salt will eventually end up in the nearby surface waters or groundwater.

## **Snow and Ice Management Strategies for Businesses**

**When hiring contractors for snow management or planning your own winter snow and ice management, here are some strategies to consider:**