

## Did You Know...

Road salts can make it safer for us to walk and drive around in the wintertime. It helps keep roads open, and allows businesses, government, and social services to stay open with little interruption.

However, it only takes one teaspoon of salt to permanently pollute 5 gallons of water.

Salt seeped into the environment can:

- Raise sodium levels in our drinking water and increase treatment costs.
- Harm fish, plants, and other wildlife.
- Corrode vehicles, roads, bridges, and parking lots.

Since there's no easy or cheap way to remove salt from our environment, we can all do our part to be **#WinterSaltSmart** by following the below tips for snow and ice maintenance.



## How should you prepare for a storm?

Shovels may be all that you need for winter weather in Northern Virginia. To make it easier on your back, you can choose shovel products with wheels. Remember to take breaks and avoid overloading your shovel with wet snow.

For big storms or to clear larger areas, snow blowers or other equipment may also be helpful. See below for a chart to decide which type of equipment to use depending on the size of the area that you need to clear (based on 2 - 3 inches of snow):

Sidewalk Clearing Equipment	Clearing Ability Per Hour
Shovel (2 ft shovel)	1,500 ft <sup>2</sup> per hour
Shovel (3 ft snow pusher)	3,000 ft <sup>2</sup> per hour
Snow Blower - (2 ft broom)	5,000 ft <sup>2</sup> per hour
ATV (4 ft blade)	8,000 - 12,000 ft <sup>2</sup> per hour
Skid Steer/Ventrac (4 ft broom)	10,000 - 21,000 ft <sup>2</sup> per hour



# Smart Salt Management

## Choosing the Best Salt or De-icing Product

- Always check product ingredients. Labels like “safe,” “pet-safe” and “environmentally friendly” can be used inaccurately on certain salt products.
- **All nitrogen and phosphorus salts are illegal in Virginia.**
  - Nitrogen salts include urea, ammonium sulfate and potassium nitrate, etc.
  - Phosphorus salts may have “phosphate” (PO<sub>4</sub>) in the ingredients, although these are rare.

If applying a salt to your driveway or sidewalk, choose a product based on the **Lowest Practical Melting Temperature**, not the **Eutectic Temperature**. See the table below for different product options:

Product Type	Chemical (3)	Lowest Practical Melting Temperature (1)	Eutectic Temperature (2)
Salts (contain chloride)	NaCl (sodium chloride) - also called rock salt	15° F	-6° F
	MgCl <sub>2</sub> (magnesium chloride)	-10° F	-28° F
	CaCl <sub>2</sub> (calcium chloride)	-20° F	-60° F
	KCl (potassium chloride)	25° F	13° F
Other Salts (do not contain chloride)	CMA (calcium magnesium acetate)	20° F	-18° F
	KAc (potassium acetate)	-15° F	-76° F

For more information on these salts and some alternatives, visit “[Materials to Treat Snow and Ice](#)” and for more information on the temperature ranges of the different salts, see “[Temperature Ranges and Terminology for Salts.](#)”

1 The temperature that a salt will melt ice in a reasonable amount of time. Also called “Lowest Effective Temperature.”

2 The lowest temperature that a salt can melt ice. This is not a practical temperature to reference (see the warnings below).

3 Source: [https://stormwater.pca.state.mn.us/index.php?title=Lowest\\_practical\\_melting\\_temperature](https://stormwater.pca.state.mn.us/index.php?title=Lowest_practical_melting_temperature)

## Salt Application Tips: Small Areas

- **Sodium chloride:** One 12-oz coffee mug holds enough salt to treat a 20-foot driveway or ten sidewalk squares. Aim for about 3 inches between pieces of rock salt.
- **Calcium chloride:** Apply at a rate that is one third of the rate used for sodium chloride.
- If it is too cold for salt to work, or you'd rather not use salt, consider using other traction materials. These include sand, bird seed (make sure to use a native blend), wood ash, and zeolite crystals (like EcoTraction™).



## Salt Application Tips: Large Areas

If applying salt to larger surface areas on your property, consider the Sustainable Salt Institute's recommended application rates based on pavement temperature and trends using rock salt (NaCl):

Pavement Temperature (F) and Trend (↑ ↓)	Pounds per 1000 ft <sup>2</sup>	Pounds per Acre
15 - 20 ↑	14	610
15 - 20 ↓	13.5	588
20 - 25 ↑	13.25	577
20 - 25 ↓	12.75	555
25 - 30 ↑	12.5	545
25 - 30 ↓	11	479
30 ↑	11	479
30 ↓	10	436

<sup>4</sup> The Sustainable Salt Initiative (SSI) rates are representative of the average of total rates collected from winter management companies participating in the Snow and Ice Management Association's SSI during 2015-2016 and 2016-2017 winter seasons. For more information and to access "Sexton, Phillip Charles. 2017. Sustainability Analysis of the Commercial Winter Management Industry's Use of Salt. Master's thesis, Harvard Extension School" visit <https://dash.harvard.edu/handle/1/33826971>.

## Additional Snow and Ice Management Tips



- Clear snow by shoveling early and often.
- Make sure to clear snow and apply salt only where needed.
- Be patient and give the salt time to work. The colder it is, the longer it will take for the salt to melt what snow or ice remains after shoveling.
- Never use salt to "burn off" snow. It will quickly dilute and requires excess use.
- If the sun comes out and you can wait, let the sun do some of the work before you apply salt.
- After the storm, sweep up the extra salt or traction material and use it again next time winter weather hits.