



STATE HIGHWAY ADMINISTRATION

Maryland Department of Transportation State Highway Administration (MDOT SHA)

Seasonal Salt Usage Reduction Techniques Fact Sheet

Pre-wetting salt: MDOT SHA is intensifying its use of pre-wetted salt. Pre-wetting salt with salt brine or magnesium chloride helps salt better adhere to the road and prevents waste due to “bounce and scatter” as it’s applied. Studies have shown that pre-wetting can lead to a 30 percent reduction in salt usage. SHA will be pre-wetting the salt going into the spreader directly before road application.

Anti-icing (Pre-treating): MDOT SHA is continuing to pre-treat highways in advance of snow storms. This is a proactive operation that involves spraying salt brine on roads and bridges prior to a snow storm and allowing enough drying time. The brine prevents snow and ice from bonding or “packing” on the surface of the highway. It’s important to note that if a storm is forecasted to begin as rain or sleet, MDOT SHA will NOT pre-treat because the liquid precipitation will simply wash the brine solution off the roadways.

Liquid-only routes: MDOT SHA has designated at least one “liquid only” snow route in many of its seven engineering districts. Meeting the standard criteria for salt brine application, SHA will use only salt brine in the actual treatment of these roads during a snow storm. Using salt brine reduces overall salt usage, which is less intrusive to the environment. MDOT SHA has strategically placed an additional 1.5 million gallons of salt brine in key areas across Maryland.

Effective pre-storm planning: Tracking a winter storm and developing a comprehensive advanced winter emergency operations plan is essential in reducing overall salt usage. Using the pre-storm planning information, crews can pre-treat highways reducing the initial passes of salt spreading.

Salt storage and loading: MDOT SHA salt domes and barns are constructed to prevent salt from becoming wet and running off out of the structures. Additionally, controls are installed to contain salt into the barn or dome and not onto the surface. Crews operating loaders are highly skilled to dumping the salt into the back of a dump truck without having any spill over outside of the truck.

Truck speed and spreading: Slower travel enables salt being spread on the highway to stay on the highway. Faster speeds cause more salt bounce and scatter. Additionally, MDOT SHA uses ground speed controlled direct cast spreaders which automatically adjust spreader salt dispersion speed with the speed of the maintenance truck.