MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

Seasonal Salt Usage Reduction Techniques Fact Sheet

Anti-icing

Anti-ice highways in advance of snowstorms. This is a proactive operation that involves spraying salt brine on roads and bridges prior to a snowstorm and allowing enough drying time. The brine prevents snow and ice from bonding or "packing" on the surface of the highway. It is important to note that if a storm is forecasted to begin as rain or sleet, SHA will NOT anti-ice because the liquid precipitation will simply wash the brine solution off the roadways.

Pre-treating salt

Pre-treating salt with salt brine (approximately 23% salt and 77% water) or magnesium chloride (eight gallons per ton of salt) helps salt better adhere to the road and prevents waste due to "bounce and scatter" as it's applied. Studies have shown that pre-treating salt can lead to a 96↘ .reduction.in.overall.salt.usage. SHA will be pre-treating the salt in the auger box prior to being sent to the spinner for road application.

Direct Liquid Application Routes (DLA)

SHA has designated at multiple DLA routes in each of its seven engineering districts. Meeting the standard criteria for DLA salt brine application, SHA will use only salt brine in the actual treatment of these roads during a snowstorm. The use of salt brine can reduce overall salt usage.

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 anti-ice highways reducing the initial salt applications.

Salt storage and loading

SHA salt domes and barns are constructed to prevent salt from becoming wet and producing running off that could negatively impact surrounding waterways. Additionally,

controls are installed to contain salt into the barn or dome and not onto the surrounding surface areas. Crews operating loaders are highly skilled at loading salt into the back of a dump truck without having any spill over outside of the truck body.

Truck speed and spreading

Slower travel speeds enable the 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.