



## Maryland State Highway Administration Winter Operations Facts And Figures 2011-2012 Winter Season

The Maryland State Highway Administration (SHA) maintains most interstate, U.S. and numbered state routes. The Maryland Transportation Authority (MDTA) maintains Maryland's eight toll facilities such as the Bay Bridge, the Intercounty Connector and the Baltimore Harbor and Ft. McHenry tunnels. In addition MDTA maintains I-95 from Baltimore City to the Delaware line and I-395 in Baltimore City. Maryland counties and Baltimore City maintain local roads that are not under SHA's jurisdiction.

**Lane Miles Maintained by SHA and MDTA** **17,674**  
(Length of roadway times the number of lanes, including service roads/ramps)

**Number of People Available to Fight Winter Storms** **Up To 2,700**  
(Including SHA, MDTA and contract forces)

**Pieces of Equipment Available to Fight Winter Storms** **Up To 2,400**  
(Including SHA, MDTA and contract forces)

**Average Number of Winter Snow Storms per Year Since 2000**  
(Does not include the numerous maintenance shop activations for frost, black ice, and post-storm blowing and drifting snow)

Eastern Shore	7
Southern Maryland	7
Baltimore/Washington DC Metro Area	8
Western Maryland	30

<b>Date of Earliest Metro Area Winter Storm Since 2000</b>	<b>10/29/2011</b>
<b>Date of Latest Metro Area Winter Storm Since 2000</b>	<b>4/9/2000</b>

### Winter Operations Expenditures and Salt Usage

<u>Fiscal Year</u>	<u>Expenditures</u>	<u>Salt Used</u>
FY 2000	\$36,570,963	229,884 tons
FY 2001	\$35,404,738	238,948 tons
FY 2002	\$20,235,025	94,301 tons
FY 2003	\$73,399,067	427,112 tons
FY 2004	\$49,965,910	316,879 tons
FY 2005	\$47,743,201	291,388 tons
FY 2006	\$34,897,741	157,508 tons
FY 2007	\$48,372,623	252,840 tons
FY 2008	\$46,400,013	201,401 tons
FY 2009	\$52,897,496	222,230 tons
FY 2010	\$124,841,364	368,854 tons
FY 2011	\$70,449,052	258,923 tons
<b>Budgeted For FY 2012</b>		<b>\$36,000,000</b>
<b>Salt available for FY 2012</b>		<b>340,000 tons</b>

*Please note: Expenditures and salt usage varies from year to year due to the number and intensity of storms.*

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### Strategies for Winter Operations

- **Anti-icing** - proactive preventive winter maintenance strategy of applying materials prior to or at the onset of precipitation to prevent snow and ice from bonding to pavement. SHA is expanding its anti-icing operations in an attempt to lessen overall salt usage.
- **Deicing** - traditional winter maintenance strategy of breaking the snow/ice/pavement bond after it has occurred. It requires more material to break the bond than to prevent it.

### Materials Available for 2011-2012 Winter Season

- **Salt, rock and solar (sodium chloride)** is the principal winter material used by SHA. It is effective at pavement temperatures of 20° F and above.
- **Treated salt** is salt coated with magnesium chloride and/or sugar beet molasses. The additives allow salt to work at lower temperatures, extending its range of effectiveness.
- **Abrasives** including sand and crushed stone are used to increase traction for motorists during storms. Abrasives have no snow melting capability. SHA uses a limited amount of this material, concentrating its efforts on melting and plowing snow and ice from the pavement.
- **Calcium chloride** is a solid (flake) winter material used during extremely cold winter storms. SHA uses a limited amount of calcium chloride.
- **Salt brine (liquid sodium chloride)** is a solution that can be used as an anti-icer on highways prior to the onset of storms, or as a deicer on highways during a storm. SHA makes extensive use of this material. It has a freeze point of -6° F. and costs approximately seven cents per gallon to produce. Salt brine will be produced and used at SHA's 11 brine making facilities. In addition, salt brine will be transported to other maintenance shops throughout the state for their use.
- **Magnesium chloride (mag)** is a liquid winter material used by SHA in deicing operations. The material has a freeze point of approximately -26° F. It is used in the colder regions of the state, primarily in the northern and western counties.
- **GEOMELT 55 (De-sugared sugar beet molasses)** is an organic material that is blended with salt brine. The beet molasses lowers the freezing point of brine, and allows it to remain on bridge and road surfaces for longer periods of time, extending its effectiveness.

### Quantities of Materials Available for 2011-2012 Winter Season

• <b>Rock and Solar Salt in 96 Salt Domes/Barns</b>	<b>340,000 tons</b>
• <b>Abrasives (statewide) – sand and crushed stone</b>	<b>40,000 tons</b>
• <b>Calcium Chloride (various locations)</b>	<b>60 tons</b>
• <b>Salt Brine at 66 Sites</b>	<b>770,000 gallons</b>
• <b>Magnesium Chloride at 15 Sites</b>	<b>80,000 gallons</b>
• <b>GEOMELT 55 (De-sugared Sugar Beet Molasses)</b>	<b>30,000 gallons</b>

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### Technology Available for 2011-2012 Winter Season

In addition to its fleet of salt spreading/snow plowing dump trucks, SHA will deploy:

- **550 truck-mounted saddle tanks:** This equipment is used to pre-wet salt with salt brine or liquid magnesium as the salt is spread on highways. Pre-wetting salt helps it adhere to the pavement (reducing waste), go into brine solution quicker (making salt more effective) and work at lower temperatures. Nearly all of SHA's fleet of single axle dump trucks is equipped with this technology.
- **127 wing plows:** A wing plow is an additional plow mounted on the right side of a plow truck or grader. The extra plow allows crews to clear more snow from the road and shoulder in one pass, increasing efficiency.
- **14 truck-mounted liquid applicator spray tanks:** These units are used for anti-icing operations (spraying salt brine or salt brine blended with beet molasses on roads and bridges prior to precipitation to prevent snow and ice from bonding to the pavement).
- **11 salt brine machines:** SHA has added three additional salt brine machines and has increased salt brine storage to 66 locations throughout Maryland.
- **2 Tow Plows:** A tow plow is a separate plow that is towed behind an SHA salt/plow truck and will clear an extra highway travel lane. Tow plows will be used in conjunction with snow plow trains (several trucks driving in tandem). The introduction of the tow plow into SHA's fleet will help enhance highway snow clearing operations with fewer passes and less trucks on the highway, which will improve clearing of primary and secondary roadways.

#### CONTACTING SHA

Citizens can also log onto [www.roads.maryland.gov](http://www.roads.maryland.gov) and click "Contact us." There is an online submission form to report any issues pertaining to SHA-maintained highways for non-emergencies.

Free local traveler information can be obtained by calling 5-1-1.  
Go to [www.md511.org](http://www.md511.org) or follow us on Twitter at @MD511State.