



A convoy makes its way west on Route 70 near Frederick, Md., with the lead truck spraying a liquid anti-icing material, which should reduce potential harm to wildlife and vegetation caused by road salt runoff.

By Mike Buscher for USA TODAY

New approach to snow, ice removal reduces harm

[Larry Copeland](#), USA TODAY

Communities in cold climates around the USA are changing their approach to snow and ice removal from highways in an effort to reduce potential harm to wildlife and vegetation caused by road salt runoff.

Melting snow and ice and rain cause salt to run off roads onto vegetation and soil and into ditches, eventually seeping into streams, lakes and rivers. The runoff harms frogs, fish and other aquatic life and some roadside vegetation. Runoff from road salt has been found in residential drinking wells in some Northeastern and Midwestern states.

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"There really aren't tremendous alternatives to sodium chloride, which is what road salt is, when you want to keep ice from freezing to the road," says Stuart Findley, a senior scientist at the non-profit Cary Institute for Ecosystem Studies in Millbrook, N.Y. "What we can do is be more selective in how the salt is applied to the road."

Road salt, such as that used by highway crews along the East Coast during last weekend's heavy snow, works by lowering the freezing point of water, keeping ice and snow from bonding to roads and allowing easy removal by snow plows.

The large-scale use of salt began in the 1950s, Findley says. Today, about 15 million tons of de-icing salt are used in the USA each year, according to the Environmental Protection Agency.

What some cities and states are doing:

- Several communities are moving away from just using road salt, which is applied to snow and ice after storms. Instead, they're turning to brine, a mixture of rock salt and water that is applied to roads before precipitation forms on them and prevents ice from bonding to the surface. Brine is cheaper than regular rock salt and leaves behind less salt.

"It's totally opposite of what we normally do in the city of Syracuse," says Jeff Wright, commissioner of the Department of

Public Works in Syracuse, N.Y., which is testing brine on bridges this year. "It's anti-icing vs. de-icing."

Vermont, which built a brinemaking facility last year, is using brine on its roads for the second year, says John Zicconi, spokesman for the Vermont Agency of Transportation.

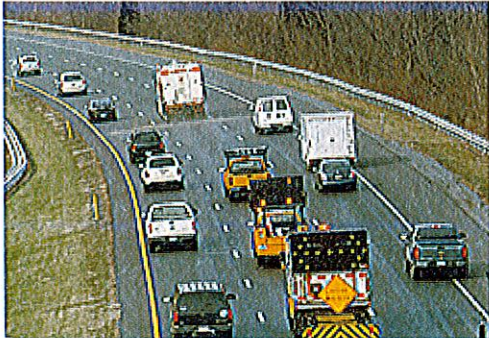
- Maryland is testing a fluid made from sugar beets, which is mixed with salt brine and sprayed onto highways. The molasses-based substance makes the brine mixture adhere to roads and allows highway crews to use less salt and recoat roads less frequently, says Valerie Burnette Edgar, spokeswoman for the Maryland State Highway Administration. "It also works at a lower temperature," she says.

- New Hampshire is considering legislation that would require state certification for anyone who puts down salt on public and private roads and parking lots. The state Department of Environmental Services requested the legislation after finding that about 50% of road salt runoff in four environmentally sensitive watersheds comes from private parking lots and driveways.

- Nevada's sophisticated snow-and-ice removal procedure includes a road weather information system comprised of hockey puck-sized pavement sensors that let highway officials know when they need to pre-treat roads with brine or a sand-and-salt mixture before precipitation falls, says Scott Magruder, spokesman for the Nevada Department of Transportation. The state is building four bridges between Reno and Carson City equipped with embedded de-icers that will automatically spray a light brine mixture onto the bridge surface when temperatures drop below a certain level, Magruder says.

- Massachusetts has reduced by 35% the amount of salt applied in environmentally sensitive areas by pre-treating with brine. The state also customizes weather forecasts for 14 regions, says Colin Durrant, a spokesman for the Massachusetts Department of Transportation.

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