

Do Deicers Have Environmental Impacts?



Photo Source: Tufts

The use of deicers is necessary at Tufts during winter weather to melt snow and ice to make removal easier to ensure safe pedestrian and vehicle travel. Deicers include common road salt or chemicals that are designed for different surfaces, application techniques, temperatures or environmental considerations.

According to the U.S. Environmental Protection Agency, road deicing became increasingly common in the 1930s-1950s with the expanded use of roads, cars and suburban living in the United States. In the 1950s demand grew for bare pavement at all times, and road salt helped meet this public policy goal.

At Tufts, we have come to expect campus roads and sidewalks to be clear of snow and ice during and after winter storms and Tufts Facilities Services works around the clock to meet this need. Facilities Services uses three deicers for different applications: magnesium chloride for sidewalks and stairs, potassium chloride for roads on the Medford/Somerville Campus and common road salt (sodium chloride) on the Grafton Campus. Sand is sometimes added as an abrasive to improve traction but does not melt ice.

The use of deicers is not subject to environmental regulation except for the prohibition against salt storage near drinking water supplies. The EPA regulates some chemical uses via the Toxic Substances Control Act; chemical waste management via the Resource Conservation and Recovery Act; wastewater discharges via the Clean Water Act; and drinking water in the Safe Drinking Water Act.

Excessive salt application can raise the amount of sodium and chloride in fresh water and kill vegetation. That is why roads near drinking water sources are sometimes labeled as low-salt areas. Interestingly, even though it is not a chemical, sand application is generally not recommended by state highway departments because it doesn't melt snow, clogs storm drains and is expensive to sweep in the spring.

After application, deicers dissolve and run off into stormwater systems. Historically, stormwater systems quickly transported runoff and any pollutants to the nearest water body but recently, Tufts has adopted a new environmental engineering practice to naturally remove some pollutants from stormwater by letting it settle in underground structures before conveyance to water bodies. Salt tolerant plants as well as soils can adsorb salt and reduce the amount in runoff. Regular street sweeping and catch basin cleaning in spring and fall can also help to remove sediment and maintain performance of stormwater systems.

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Maintaining safe transportation infrastructure is important to the safety of the Tufts community and the ability to complete the University's research and teaching mission with limited interruptions.