

Materials

Buying the cheapest product is not always the least expensive practice and more is not always better!

- * Consider using magnesium chloride instead of sodium chloride. Though it costs more, a molecule of magnesium chloride provides twice as much chloride as a molecule of sodium chloride. Magnesium chloride is also more effective at lower temperatures and it is less corrosive and far less damaging to landscaping. That means a reduction in your client's capital and maintenance costs!
- * Use coarser aggregate for sanding. This will improve winter traction. It will also reduce the loss of effectiveness due to burial with continued snowfall or displacement by traffic. That means a reduction in re-application! Coarser aggregate also requires smaller additions of "antifreeze" salt to keep it free-flowing and it is easier to spread uniformly. All these factors can greatly reduce material volumes!

Application

When and how you apply materials make a big difference in how well they work, how much you apply, and ultimately how much it costs you!

- * Lightly apply deicers just before or just as snow begins to fall. This will help prevent formation of a bond between the ice and the surface, making it easier to shovel or plow later.
- * Do not apply deicers during the middle of a storm. They may appear to work right after application, but with continued snowfall will dilute and refreeze to form an even icier surface.

- * Do apply deicers at the end of the storm if feasible. Application will be most effective immediately after you have removed the last of the new fallen snow. This is because to work, salt deicers not only require some moisture (to dissolve the salt) but also some heat. The heat, which is what actually melts the snow, may come from warming ambient temperatures, the sun's heat, or traffic. Applying deicers at the end of a snow storm takes advantage of these processes. You will use less deicer and have greater effect because temperatures will still be warm from the retreating storm front and the deicer will maintain greater anti-freezing potency as the snow and ice melts.
- * Sweep or shovel surfaces free of slush and melted snow as soon as possible. A given concentration of salt is effective down to a certain temperature ... as temperatures fall following a storm, melted ice will refreeze, necessitating continuing ice removal expenses.



WHAT TO DO WITH ALL THAT SNOW!

SNOW STORAGE AND DISPOSAL PRACTICES FOR LOCAL CONTRACTORS

**LIMIT YOUR RISK!
LIMIT YOUR LIABILITY!**

The importance and practicability of best management practices ... brought to you by the Fairbanks Storm Water Advisory Committee (FSWAC).

Winter living in Fairbanks means snow ... typically more than 60 inches of it! Finding a place to put it when you clear driveways, sidewalks, and parking lots can be difficult. Along with ensuring clear, safe access to homes, schools, and businesses, snow clearing contractors must also consider the water quality impacts of snow storage and disposal. FSWAC hopes that the following tips will help you develop practices that reduce your environmental risk and limit your liability!

WHAT'S THE BIG DEAL?

Snow removed from roads, sidewalks, and parking lots may contain products from various land uses related to urbanization and human activities including salt, sand, litter, landscaping chemicals, animal waste, automotive byproducts, and petroleum. As snow melts, these contaminants are transported directly into surface water in concentrated amounts either overland or through the community storm drain system.

THE RESULTS?

Contaminants entering surface water can have severe consequences including:

- * Increased turbidity.
- * Reduction in dissolved oxygen levels.
- * Stimulation of nuisance plants and algae growth.
- * Destruction of habitat.
- * Deposition of litter on stream or lake bottoms and along shorelines.
- * Release of harmful bacteria.

In other words, the contaminants contained in snow melt can foul or kill fish, make humans sick, and destroy the riparian environment. And don't forget ... putting contaminated snow or snow melt into surface waters is considered an illicit discharge and subject to the fines outlined in both city and borough ordinances.

This picture shows snow contaminated with gravel, litter, and deicing salt plowed from a parking lot into a slough. The contractor was required to remove all contaminated snow per city ordinance.



This picture shows snow contaminated with litter, animal waste, and sand plowed from sidewalks onto a storm drain inlet. The contractor was required to remove all contaminated snow per city ordinance.

STORAGE AND DISPOSAL SITES

Location, location, location! The key to selecting effective snow storage and disposal sites is to locate them adjacent to or on pervious surfaces in upland areas where direct drainage to surface waters or storm drains is not possible and where the groundwater table is low. At such locations, snow melt can filter into the soil, leaving behind sand and debris which can be removed after breakup. The best disposal sites are lands that drain into detention basins or are protected by dikes or berms. Some dos and don'ts when selecting a site:

- * Avoid dumping snow into any waterbody, ice covered or open, including drainage ditches or storm drain inlets ... it is illegal! And remember, storm drain inlets do not treat melt water prior to discharge!
- * If a site must be located near a waterbody, maintain a vegetated buffer between the site and the waterbody. The buffer helps trap fine sediments, automotive byproducts, and petroleum.

- * Avoid sites near wellheads or other areas that could potentially affect groundwater including landfills or gravel pits.
- * Choose sites where there is little risk of human exposure after breakup. Accidental ingestion of contaminated soils can impact human health.
- * After breakup, remove and properly dispose of trash and litter from the site. Fencing a site will prevent litter from blowing or drifting.

BEST MANAGEMENT PRACTICES

Contractors responsible for snow storage and disposal are also frequently responsible for the application of sand, gravel, and deicers as well. Implementing best management practices when selecting and applying these materials will greatly reduce the amount of contaminants in the plowed snow and may reduce operation costs! The following up-front best management practices can be realistically applied and will help you avoid fines and costly cleanups.