- Avoid landfills. The added moisture can flush contaminants into groundwater.

- Avoid wetlands and floodplains. These areas are especially sensitive to excess water.

Street strategies for pollution prevention

Contaminants can build up in large snowpiles and lead to "shock" doses of pollutants into waterways during spring runoff. Thus, maintain clean snow at disposal sites by always removing snow from busy roads within 48 hours of snowfall. Use less sand and especially less salt. Consider using alternative de-icers such as calcium chloride. If you use sand, use covered, sturdy street barrels that are no taller than they are wide. Make sure barrels are level and avoid placing them near gutters or storm water drains, where any spills would get an easy ride to surface waters.

Here are some additional ways to "go for clean snow:"

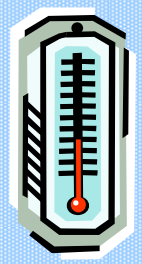
- Equip sand-spreading trucks with sensors that control release rates.
- In the spring and fall, clean up debris that has accumulated in the streets.
- Develop a local snow management policy.

For assistance with water pollution prevention or choosing a snow disposal site, contact the Wisconsin Department of Natural Resources (DNR) office nearest you.

DNR does not have direct authority to choose municipal snow disposal sites or set snow management policies, but can assist with these matters. DNR staff do have the authority to address any complaints regarding water resources contamination in Wisconsin and will handle these matters case by case.

Smart salting

Vermont's "smart salting" program calculates sale application rates using infrared sensors on trucks to measure winter pavement temperatures, which are typically 7 to 40°F warmer than the air. When the pavement is so cold (about -6°F) that salt would be inefficient, crews apply sand or other abrasives.



Sand is frequently mixed with salt to help "embed" the sand into colder surfaces and increase friction. Overall, state transportation crews have found that applying salt and sand in frequent, small doses *during* a snowfall, versus "waiting out the storm," achieves the best results. They are using 25 percent less salt and sand than in previous years.

Where to go with the snow

Snow treatment and disposal guidance for municipalities

Wisconsin Department of Natural Resources
PUBL-WR-154-06REV

DNR Runoff Management:
http://dnr.wi.gov/org/water/wm/nps/

To Wisconsin municipalities, winter means snow and having to find a place to put the tons of it removed from roads, sidewalks and parking lots. Along with protecting safety and maintaining access to homes and businesses, a primary concern in handling snow should be to prevent environmental damage. We hope the following tips will help guide your community's decisions on snow removal and disposal.

What's in the white stuff?

Snow removed from streets, cars and parking lots can contain salt, nutrients, oil, sand, silt, litter, heavy metals and toxic chemicals. All these things can harm surface waters and groundwater, especially when tons of snow are dumped directly into lakes and streams. Spring meltwater from large snow piles can also deliver accumulated doses of pollutants directly to waterbodies.

Suitable disposal sites

Disposing of snow on land where contaminants and debris can be gradually released, contained or collected is better than dumping it into surface waters or on land that drains directly into surface waters, groundwater or storm drains.

The best disposal sites are lands that drain to detention basins, which capture meltwater pollutants that would otherwise reach storm sewers and surface waters. A dike or berm may be needed to prevent overload drainage to nearby lakes and streams.

The concern over contaminated snow

Toxic substances, sand, silt and litter in city snow that's improperly disposed of can combine with other polluted runoff to:

- Reduce levels of dissolved oxygen in surface waters.
- Stimulate nuisance aquatic plant and algae growth.
- Kill fish and other aquatic life.
- Contribute to contamination in game fish, making them inedible.
- Introduce heavy metals into water and sediments.
- Cover habitat for fish and other aquatic life.
- Clog navigation channels.
- Impair terrestrial plant growth and erode soil.
- Little stream and lake bottoms and shorelines.
- Contaminate groundwater.

The amount of snow brought to a site should be based on estimated runoff rates, meltwater quality, the receiving water's ability to absorb runoff, and downstream uses of the receiving water. Local WDNR staff can help in making these assessments.

- Do not choose disposal sites with steep slopes or readily erodible soils.
- Choose sites where there is little risk of human exposure to potential contaminants.
- Avoid playgrounds, ballparks and parking lots.
- Remove debris from snowpiles after spring thaw or before any potential flooding. Fencing the site will prevent litter from blowing offsite or into waterways.
- Avoid placing sites near high-traffic areas to lessen salt and heavy metal buildup from tire and brake wear.

Protect groundwater

- Snow piles should be at least 1,000 feet away from water supply wells. Locate sites downhill of wells, avoiding lakes, streams and wetlands.
- Fine-textured soils are better than sandy soils for filtering certain heavy metals, thus they help protect surface waters and groundwater. (However, most soils cannot detain road salt chlorides, which are soluble in water.)
- Avoid areas with fractured bedrock near the surface. Contaminants can be easily channeled to groundwater at these sites.