

Best Practices for Disposing of Snow (Snow Dumps and Snow Melters)

Many municipalities are routinely faced with disposing of snow that is removed from streets and parking lots. There are environmental impacts associated with snow disposal. The following information and “best practices” were taken from the web pages of a number of States, Provinces, and Associations including: the Province of Alberta, the State of Alaska, the State of Wisconsin, the State of Massachusetts, the State of New Hampshire and The Transportation Association of Canada.

There are also NPDES II and local watershed and other regulations that must be addressed.

CONTAMINANTS OFTEN FOUND IN HIGHWAY AND PARKING LOT SNOW

- Suspended Solids (sand and similar)
- Organic and other Toxic Chemicals
- Phosphates and other Nutrients
- Animal Wastes
- Dissolved Salts
- Heavy Metals
- Trash
- Oil
- Dust, dirt and Airborne pollutants

LOCATION, DESIGN, AND OPERATIONAL CONSIDERATIONS FOR SNOW DUMPS

1. Location

Avoid the following:

- Landfills
- Agricultural Land
- Areas containing sensitive vegetation
- Wetlands and floodplains
- “high water” locations adjacent to water bodies
- Areas having steep slopes and erodible soils

CORNELL LOCAL ROADS PROGRAM

416 RILEY-ROBB HALL, ITHACA, NY 14853

PHONE: (607) 255-8033

FAX: (607) 255-4080

E-MAIL: clrp@cornell.edu

INTERNET: www.clrp.cornell.edu

Tech Tips are published by the Cornell Local Roads Program with support from the Federal Highway Administration, the New York State Department of Transportation, and Cornell University. The content is the responsibility of the Local Roads Program.

- Areas over fractured or folded (non horizontal layers) bedrock that is near the surface
- Areas that could contaminate an aquifer being used for drinking water
- Areas having above-ground or below-ground utilities
- Areas close to residential housing (noise and aesthetic considerations)
- Areas that may impact combined storm water/sewage systems
- Recreational areas
- Direct dumping into a water body
- Direct dumping into or over existing drainage features (catch basins, ditches, swales, etc.)
- Potential Acceptable Dump Sites:
 - Seasonal gravel parking lots
 - City Park land (away from recreation areas)
 - Undeveloped or abandon industrial sites

2. Design Considerations

- Sufficient size to accommodate snow from a “heavy” winter
- Cost analysis of haul distances
- Adequate access, egress, site mobility and signage
- Features to prevent groundwater contamination
- Features to properly contain, channel and discharge meltwater
- Consideration of downstream discharge impacts
- Proper grading
- Silt fence
- Vegetation buffer strip (downstream)
- Aesthetic considerations (berms, plantings, etc.)
- Easy collection and storage of debris
- Maintenance areas (equipment, fuel, utilities, office, etc.)
- Necessary permits, zoning, etc.

3. Operational Considerations

- Environmental monitoring procedures and stations
- Record keeping and accounting procedures
- Off-season maintenance provisions
- Decommissioning procedures (as necessary)
- Security

A snow dump area should have good drainage and must be able to handle the effects of the trucks and loaders using the site in the Winter and early Spring. Poor soils under the dump site will result in a huge mess in the Spring when you try to clean up all the debris left behind.

SNOW MELTERS

Snow melters may be portable or permanent. Snow is dumped or pushed into these devices which contain a large heat source. The resulting meltwater typically goes into a stormwater discharge system. There are fairly easy procedures and techniques available for removing trash and solids from the meltwater. Although the energy demand from the fuel can be quite costly, snow melters may be more cost-effective than hauling.

The first step in deciding if snow melters are a viable alternative to hauling and disposing of snow in snow dumps is a life-cycle cost analysis. The production rate, equipment purchase price, service life, salvage value, maintenance costs and energy costs of a snow melting system are compared to the production rate and costs associated with hauling and the snow dump.



This work by the Cornell Local Roads Program (CLRP) is licensed under a [Creative Commons Attribution-NonCommercial-Share Alike 3.0 Unported License](https://creativecommons.org/licenses/by-nc-sa/3.0/).