

<p><b>PUTNAM VALLEY CENTRAL SCHOOL DISTRICT PUTNAM VALLEY, NY</b></p>	<p><b>1. Snow &amp; Ice Control</b> Snow/ice removal consists of plowing snow and ice from bridges, roadways, and shoulders. Salt is used for de-icing and temperature suppressant chemicals such as magnesium chloride (MgCl) are applied as an anti-icer or de-icer, and for pre-wetting of abrasives, for general winter maintenance. Sanding activities place abrasives on road and bridge surfaces to provide for temporary traction and safer driving.</p>
<p><b>MS4PY3 STORMWATER PROGRAM</b></p>	<p><b>2. De-icing Salt</b> Much of the salt that is placed on a road during snow and ice control operations eventually runs off with the roadway drainage. While sodium may bond to negatively charged soil particles or be taken up in biological processes, chloride ions are less reactive and can be transported to surface waters through soil and groundwater. Road salts applied to roadways can enter soil, groundwater and surface waters from direct or snowmelt runoff, and/or wind-borne sprays. Deicing salt reaches the natural environment in a number of ways through:</p>
<p><b>FACT SHEET # 4 MARCH 2013</b></p>	<ul style="list-style-type: none"> <li>• Salting practices in which some of the spread salt lands directly on or bounces onto roadside verges or walkways</li> <li>• Salt being thrown to the edge of the road by the action of the wind</li> <li>• Dissolved salt running off roads and into drainage systems, which eventually discharge into nearby waters</li> <li>• Dissolved salt being splashed or sprayed onto roadside soil, vegetation, and surface waters by passing traffic</li> <li>• Salted snow being blown or plowed onto the roadside by snow blowers or snowplows</li> </ul>
<p><b>STORMWATER MANAGEMENT: SNOW AND ICE CONTROL</b></p>	<p><b>3. Sand and Abrasives</b> Sand and abrasives such as grit, cinders, etc., have been used for snow and ice control since the early 20th Century. Agencies tend to spread sand and abrasives many times throughout the winter months, an expensive process that can create large debris deposits on roadways and require road sweeping and subsequent disposal as solid waste. Sweeping picks up only a small percent of the total sand applied during a typical winter. Sand and abrasives, not picked up by sweepers, remains in the environment, much of it in catch basins or on or around roadways:</p>
<p><b>FOR MORE INFORMATION CONTACT YOUR STORMWATER COORDINATOR:</b></p> <p><b>DOUGLAS JUDSON AT: 845-526-7854 or at <a href="mailto:djudson@pvcsd.org">djudson@pvcsd.org</a></b></p>	<ul style="list-style-type: none"> <li>• Much of the sand and abrasives not retained in catch basins stays in drainage pipes, decreasing their capacity</li> </ul>

- Sand and abrasives can clog stormwater inlets and catch basins, requiring cleanup of these stormwater conveyance systems
- Frequently, these materials may wash downstream, contributing to sedimentation in streams and impacting fish and other aquatic resources
- These materials also have a negative effect on water quality as a result of the increased turbidity caused by the presence of sand particles in water
- The increased water turbidity can result in mortality of fish and bottom-dwelling invertebrates that may be covered by the sand
- The increased turbidity will also reduce or inhibit photosynthesis in aquatic plants

#### **4. Environmental Impacts of Snow and Ice Control**

Sensitive environmental areas generally impacted by snow and ice control practices include:

- Freshwater or tidal wetlands where salt, sand and debris may be flushed from melting snow
- Stormwater drainage swales which eventually discharge into our nearby protected public water supply reservoirs
- Areas immediately adjacent (within 100 ft.) of private or public drinking water wells
- Spawning streams and those inhabited by federally protected or state listed sensitive aquatic species, especially trout and other listed or candidate fish
- Impaired water segments listed on the state's "Section 303(d) List" for Total Maximum Daily Load (TMDL) Plan
- Small, poorly flushed ponds, lakes and wetlands

#### **5. Best Management Practices**

Best Management Practices (BPAs) should include the following guidelines, where possible or appropriate:

- Place barriers along streams or direct drainage swales to route sanding/anti-icing material away from watercourses
- Reduce plowing speed in sensitive areas
- Stop sidecast sweeping within 50 feet of structures over water
- Reduce quantity of sand applied where appropriate
- Clean inlets prior to first rain as feasible
- Timely road and parking lots clean-up of excess salt, sand and de-icing chemicals is necessary to control salt loss
- Provide onsite covered storage facilities/sheds to store, salt, sand and chemical de-icing agents
- Return unused materials to covered storage facilities
- Keep accurate records of materials usage to allow monitoring and improvement of operations
- Ensure that a single individual is assigned responsibility for the winter operations and is accountable for its operation and environmental performance
- Educate maintenance staff on water quality and environmental impacts of excessive applications of salt, sand and de-icing chemicals

#### **5. Salt Storage Facilities**

Provide onsite covered storage facilities/sheds to store, salt, sand and chemical de-icing agents, understanding the following principles:

- All salt and sand/salt blends should be covered to minimize salt loss
- Salt-handling/ mixing activities should be carried out under covered facilities to prevent the release of salt to the environment

#### **6. Managing Snow Disposal Sites**

Selection of snow disposal sites should be based on the following criteria, where applicable:

- Manage the snow pile to facilitate melting
- Dispose the snow where it will not impact nearby waterways during melting

#### **7. Policy Document**

The District should adopt a policy that addresses:

- Handling and storage of salt, sand and de-icing agents
- Identification of environmentally sensitive areas
- Procedures for the application of salt, sand and de-icing agents