

# Town of Binghamton Highway Department

## Best Management Practice

### Salt and Sand Storage

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The Town of Binghamton Highway Department is located at 865 Hawleyton Rd Binghamton, NY 13903. The land that the town of Binghamton Highway garage is located on was purchased in 1957 by our town's four fathers. The building was built in 1958 at its present location. Improvements to the building and the land have been on an ongoing objective to the administration of the town of Binghamton.

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#### On-Going Objectives:

- Proper storage of road salt and sand
  - General practices
  - Alternating materials
  - Employee training
  - Funding for salt storage building
  - Drainage of Town property
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#### Description:

The Application and storage of deicing materials, most commonly salts such as sodium chloride, can lead to water quality problems for surrounding areas. Salts, gravel, sand, and other materials are applied to highways and roads to reduce the amount of ice during winter storm events. Salts lower the melting point of ice, allowing roadways to stay free of ice buildup during cold winters. Sand and gravel increase traction on the road, making travel safer.

Both salt and sand materials must be stored properly to reduce impact on the surrounding area. The Town of Binghamton stores salt in an enclosed storage shed located beside the garage.

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#### Pollution Prevention:

- Facilities should be located on flat sites away from surface water and on impervious surfaces that are easily protected from overland runoff.
- Salt should be stored under cover to prevent a loss due to runoff.
- Place salt piles in areas not subject to flooding.
- Contain storm water runoff from areas where salt is stored by using buffers to diffuse runoff before entering water bodies.
- Use diversion berms to minimize run-on to storage areas.
- Cleanup "track out" after storm events.

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### Suggested Protocols:

- Salt should be covered, preferably in a permanent, roofed structure, to prevent rain and snow from reaching it.
- Salt should be stored on an impermeable pad, not on the ground. Asphalt is the most widely used material for pads, since salt has little effect on it. However, concrete is sometimes used. Concrete must be high quality, air-entrained and treated with linseed oil or asphalt-type coatings to reduce chloride penetration, and prevent scaling or spalling (i.e. flaking).
- Any runoff that might occur should be contained within the storage site through an appropriate drainage design. Storage pads should slope to let water drain away, and the water channeled to a collection point via ditches, pipes or tile. This brine can then be reapplied to the stockpile during dry seasons, or applied to spreader loads prior to street applications
- Any salt storage areas existing in sensitive areas (i.e. zone of influence of water supply wells, significant recharge areas, lakes and wetlands) should be relocated.

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### Impacts of Materials:

- Salt (NaCl)
  - Deplete the oxygen supply needed by aquatic animals and plants
  - Leach into the ground and change the soil composition, making it hard for plants to survive
  - Leach into the groundwater, which sometimes flows to surface water; both are sources of drinking water
  - Deteriorate paved surfaces, buildings, infrastructures, and the environment
- Sand
  - Bury the aquatic floor life, fill in habitats, and cloud the water
  - Erode the stream banks and other landscapes as it is carried to the surface waters by storm water runoff
  - Cause premature deterioration of floor surfaces as it is tracked into buildings
  - Lose its effectiveness after becoming embedded in snow and ice
  - Enter catch basins, storm drains, and surface waters if it is not swept up each spring
  - Contribute to plugged storm drains, which can cause flooding

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### Training:

- Train drivers to improve loading of materials, application techniques and reduce losses.

- Train drivers to report areas of “over salting” to allow possible cleanup and to reduce salt runoff.
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#### Costs:

Covering stored road salts may be costly; however, the benefits are greater than the perceived costs. Storing road salts correctly prevents the salt from lumping together, which makes it easier to load and apply. In addition, covering salt storage piles reduces salt loss from storm water runoff and potential contamination to streams, aquifers, and estuarine areas. Salt storage piles should be located outside the 100-year floodplain for further protection against surface water contamination.

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#### Further Detail of the BMP:

Training of employees, calibrating equipment, and use of brine solutions or other materials for certain situations need to be continuously evaluated to increase effectiveness and reduce potential environmental impacts. Use of temperature sensor technology in pavements and on vehicles is continuing to improve. As the technology improves, the costs will continue to decrease and become a more viable option.