Road Salt Storage and Application

Goal

- Provide proper storage and application of road salt to reduce the impact of salt on:
  - Plants
  - Aquatic life
  - And local water bodies

Environmental Hazards of Over-Salting Roads

- Groundwater Contamination
- Accumulation in aquatic systems
- Possible negative impact
  - Decrease dissolved oxygen and stratification times
  - Reduce diversity of plants and animals
- Mammals
  - Deer- Drinking salty water makes them lose fear of vehicles and humans
  - Birds- Seed eating birds may not be able to distinguish between seed and salt particle
- Die back of plants along roadsides
- Automobile damage
- Concrete damage

Precautionary Steps to Take

- Use covered facility for salt storage (prevents lumping and run-off loss), sized properly for seasonal needs
- Store salt on highest ground elevation to mitigate contact with storm water
- Calibrate salt spreaders as necessary
- If possible, use a wetting agent with salt to minimize “bouncing” during application
- Unload salt deliveries directly into storage facility, or if not possible, move inside immediately
- Inspect salt storage shed for leaks and other problems, repair as needed

Continued…

- Inspect salt piles for proper coverage
- Inspect salt application equipment
- Inspect salt regularly for lumping or water contamination
- Inspect surface areas for evidence of runoff- salt stains on ground near and around the salt shelter, loading area or down slope
- Inspect for excessive amounts of salt on roads
- Inspect equipment to verify proper operation. Service trucks and calibrate spreaders regularly to ensure accurate, efficient distribution of salt

Consider Alternate Deicing Materials

- Calcium
- Chloride
- Magnesium Chloride

Check the Label For:	Works Down to:	Cost is:	Environmental Impacts:
Calcium Magnesium Acetate (CMA)	-3°C to -5°C	20x more than rock salt	(+) Less toxic — if used sparingly
Potassium Acetate (KAc)	-30°C to -60°C	8x more than rock salt	(+) Less toxic — biodegrades, but lowers oxygen levels in bodies of water
Calcium Chloride (CaCl)	-31°C	3x more than rock salt	(+) Lower rate of application; (+) No cyanide; (−) Chloride impact
Magnesium Chloride (MgCl)	-15°C	5x more than rock salt	(+) No cyanide; (−) Chloride impact
Potassium Chloride (KCl)	-11°C	2.5x more than rock salt	(+) No cyanide; (−) Slightly higher rate of application; (−) Chloride impact — contains 17-56% more chloride ions than other "salt"-type deicers
Urea	-4°C to -7°F	5x more than rock salt	(+) Less corrosive; (−) Slightly higher rate of application; (−) Adds needless nutrients — can be harmful to plants & waterbodies
Sand	Minimal melting effect	≈$3 for a 20 kg bag	(+) Improves traction; (−) Accumulates in streets and streams
Sodium Chloride (NaCl), aka rock salt	-10°C	≈$5 for a 20 kg bag	(−) Contains cyanide; (−) Chloride impact