

Managing Winter De-Icing Materials and MS4 Outreach

Ensuring Environmental Compliance and
Community Safety



Welcome and Introduction

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Rutgers Cooperative Extension

Rutgers Cooperative Extension (RCE) helps the diverse population of New Jersey adapt to a rapidly changing society and improves their lives through an educational process that uses science-based knowledge.





Water Resources Program

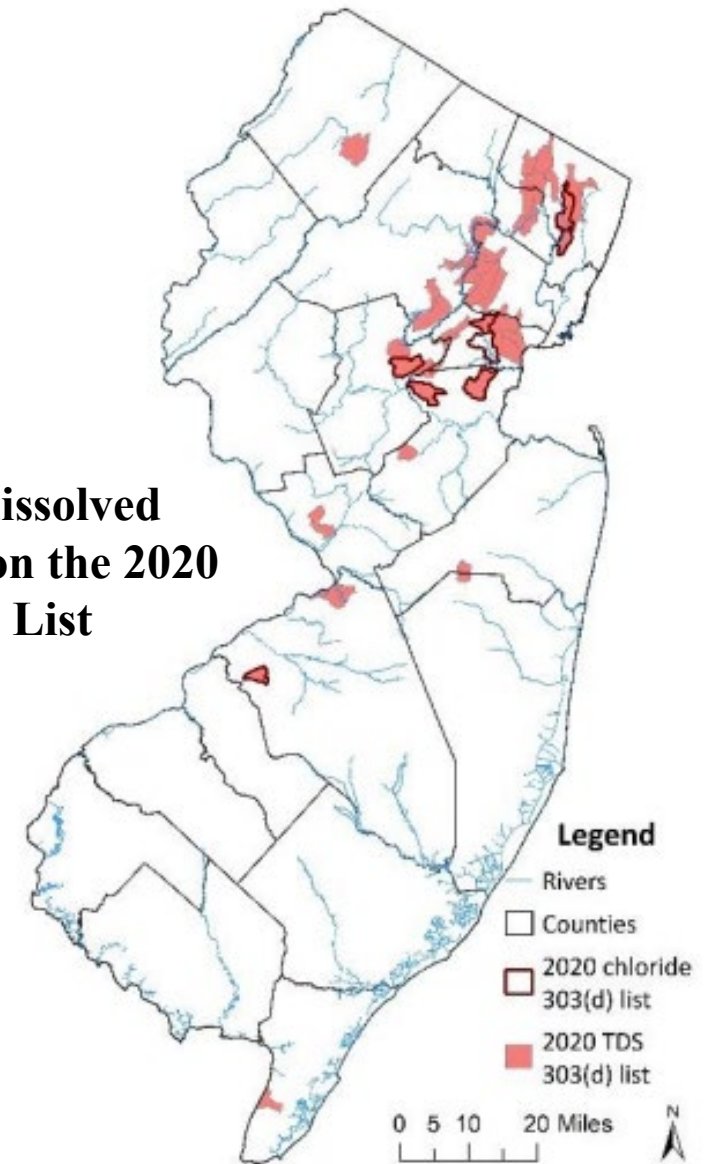


Our mission is to identify and address water resources issues by engaging and empowering communities to employ practical science-based solutions to help create a more equitable and sustainable New Jersey.

Background: The Impact of Road Salt

- **Water Quality Impairments:** NJDEP assessments show increasing exceedances of chloride and total dissolved solids (TDS) standards since 2002
- **Environmental Costs:** Excess salt leads to water and air pollution, soil deterioration, vegetation damage, and wildlife habitat degradation
- **Sustainability:** Reducing salt usage balances the need for safety (avoiding accidents) with the environmental and economic costs of mining, transport, and liquid effluent

Total dissolved solids on the 2020 303 (d) List



Source: <https://dep.nj.gov/wp-content/uploads/bears/ir-assessment/2022-media/2022ir-tdschloridesdetailedstudy.pdf>

Regulatory Requirements for Excess Material

- **The 72-Hour Rule:** Must remove piles of excess salt and de-icing materials deposited during spreading operations within 72 hours after the storm event
- **Disposal and Reuse:** Recovered excess material must be managed for reuse or proper disposal to prevent it from washing into storm drains
- **Equipment Rinsing:** Prior to rinsing vehicles used for salt application, equipment should be cleaned using dry methods like shoveling or sweeping; recovered materials must be returned to storage



Proper Storage to Prevent Runoff

- **Permanent Structures:** are required to store salt and solid de-icing materials in permanent structures with a roof, walls, and floor
- **Fabric Frame Option:** The NJDEP allows fabric frame structures if they meet strict specs, including 110 mph wind resistance, fire-rated covers, and impermeable slabs
- **Bulk Liquid Storage:** Secondary containment, such as spill containment dikes or double-walled tanks, is required for all aboveground tanks containing liquid de-icing materials



Outreach to Businesses: Privately-Owned Salt Storage

- **Ordinance Adoption:** The municipality/county ensures businesses are included in salt management through the adoption and enforcement of a privately-owned salt storage ordinance
- **Requirements for Businesses:** This ordinance requires that any piles of salt or solid de-icing materials not stored in permanent structures be covered by tarps and secured when not in use
- **Mechanical Snowmelters:** Businesses using these must notify and obtain approval from the municipality/county before discharging

Outreach on Illicit Connections and Disposal Hazards



- **Defining Improper Disposal:** Outreach materials must clarify that snow or melted snow may not be dumped into waterbodies, wetlands, near public water supply wells, or on top of stormwater basins and swales
- **Identifying Hazards:** Businesses must be informed that discharging de-icing materials or salt-laden snow into these areas constitutes a hazard and a potential illicit connection to the MS4
- **Public Awareness Campaigns:** The municipality/county can launch campaigns to educate the community and local businesses on the environmental impacts of road salt and encourage responsible usage on private properties

Engaging Businesses in Best Management Practices (BMPs)

- **Collaborative Planning:** Salt reduction plans should include input from various stakeholders, which can include community organizations and business representatives
- **Anti-icing Education:** Outreach can encourage businesses to invest in liquid deicers or anti-icing agents, which prevent ice from bonding to pavement and reduce the overall need for salt
- **Calibration Education:** Businesses that manage their own lots can be encouraged to calibrate equipment to ensure accurate application rates, mirroring municipal BMPs

Conclusion: Municipality and County Responsibility and Oversight

- **Compliance Affirmation:** The municipality/county maintains an inventory of its practices and affirms compliance with MS4 requirements annually
- **Maintenance:** Street sweeping is conducted tri-annually on roads with storm drains to remove residual salt and debris
- **Goal:** To maintain road safety while minimizing the reliance on salt through better planning, training, and community-wide engagement

Resources:

Minnesota Snow and Ice Control Handbook for Snowplow Operators:

https://mdl.mndot.gov/_flysystem/fedora/2023-02/2022ric01.pdf

Winter Operations Training Series (IOWA DOT):

<https://www.youtube.com/playlist?list=PLurY2WfsVWKn9ismDC4Uz3IbRivAnf0Ld>

Total Dissolved Solids and Chloride Increases Study: <https://dep.nj.gov/wp-content/uploads/bears/ir-assessment/2022-media/2022ir-tdschloridesdetailedstudy.pdf>

Rutgers Continuing Education: Snow and Ice Removal for Municipalities and Public Grounds:

<https://cpe.rutgers.edu/landscape/snow-ice-removal>

NJ DEP Snow Removal and Disposal Policy (January 22, 2026): <https://dep.nj.gov/wp-content/uploads/njpdes-stormwater/snow-removal-and-disposal-policy.pdf>

NJDEP De-Icing Storage Material Storage Requirements and Policy: https://dep.nj.gov/wp-content/uploads/njpdes-stormwater/deicing_policy.pdf

Sustainable Jersey - Winter Best Practices to Reduce Road Salt Impacts:

<https://www.sustainablejersey.com/actions/#open/action/607>

Resources:

Smart Salting training: Minnesota Pollution Control Agency:
<https://www.pca.state.mn.us/business-with-us/smart-salting-training>

Smart Salting for Roads Manual: Minnesota Pollution Control Agency (2023):
<https://www.pca.state.mn.us/sites/default/files/p-tr1-13.pdf>

Sustainable Winter Management (SWIM) Program: <https://witadvisers.com/swim/>

WIT Advisers Current Articles: <https://witadvisers.com/articles/>

Lake George Association: Reduce Salt: <https://lakegeorgeassociation.org/act-now/reduce-salt>