



Road Salt Management and Source Protection Plans

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Paving the Road to Success in Ontario

Source Protection Plan Implementation:

- **Municipalities:** About 60% policies implementation across Ontario: salt management plan updates, risk management services, education, septic system inspections, etc.
- **Provincial government:** about 30% policies implementation: compliance approvals, permits to take water, monitoring, etc.; provides municipal implementation funding.
- **Businesses, farmers, other landowners:** best management measures to protect drinking water sources

Salt Vulnerable Areas - Provincial Working Group

- **Goal:** Address the winter treatment of roads in salt vulnerable areas
- **Membership:** Municipal road operations managers, conservation authorities, MOECC, ECCC (co-chairs: CO, OGRA)
- **Activities 2016:** Discussed ECCC and Clean Water Act mandates, municipal liability challenges, current best management measures; Prioritized sodium and chloride 'Issue Contributing Areas'
- **Activities 2017:** Best management measures guidance document for salt management plans and risk management plans, considering municipal budgets and capacities



Salt Management – Best Practices

Region of Waterloo:

- Electronic controller spreaders, calibrated twice
- Automated vehicle location (GPS)
- Carbon-reinforced front blades for better snow removal
- On-board pre-wetting tanks to enhance salt melting capacity
- Direct Liquid Application (DLA) reduces chlorides up to 10X
- Road Weather Information System (RWIS) influences salt application rates
- Magnesium chloride winter liquids, used at 50% less than previous liquids
- Controlled drainage at storage yards
- Other: Smart About Salt program, trained operators, joint municipal committees, winter maintenance specialist

Salt Management – Best Practices

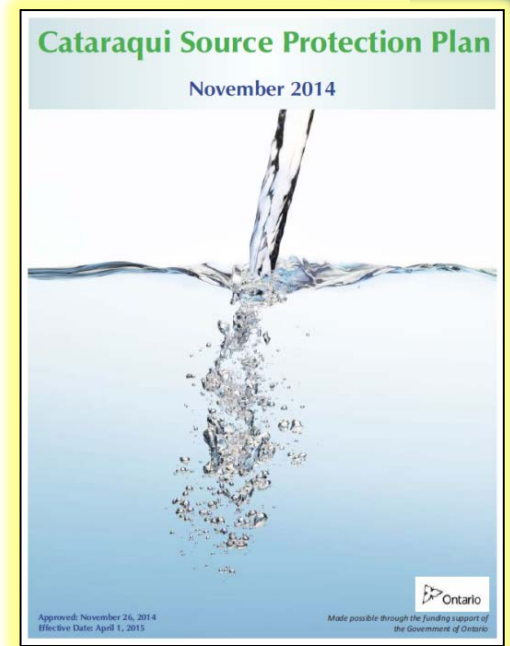
Lake Simcoe Region Conservation Authority:

- Watershed-wide Salt Management Strategy
- Working group: CA, MTO, municipalities, academia
- Salt management plan guidelines draft
- Three prong approach: built areas, public sector, private sector
 - Built areas: standard designs (sidewalks, snow disposal sites, entry ways), site plans, templates for Official Plans, zoning by-laws
 - Public sector: adopted ECCC Code of Practice, training and equipment
 - Private sector: need to overcome barriers to salt usage reduction

A Salt Reduced Diet...

Discussions:

- Spreader calibration workshops
- Sharing winter maintenance specialist amongst municipalities
- Trucks equipped with advanced technology to be used in prioritized Salt Vulnerable Areas
- Road Weather Information System (RWIS) partnerships
- Training for private sector contractors to reduce salt applied to parking lots and better salt storage
- Address runoff through parking lot design
- A guidance document for municipalities.



Thank you.



Chitra Gowda

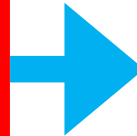
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Municipality	SMP	Materials	Sand: Salt	Equipment	Storage
Athens	No	Sand / Salt	< 10:1	Automated (contracted)	
Brockville (P)	Yes	Sand / Salt / Brine	6:1 (pre-wet) 4.5:1 (brine)	Updating with automated	Covered
Elizabethtown-Kitley (P)	Yes	Sand (with Protek) / Salt (with MgCl)	16:1	Automated	Covered
Front of Yonge	No	Road Salt	12:1	Automated	Covered
Frontenac Islands (P)	No	Sand / Salt (Thawrox)	2:2:1	Automated	Cover Proposed
Gananoque (P)	Yes	Sand (with Protek WTS 100) / Salt (NaCl)	10:1	Updating with automatic	Covered
Greater Napanee (P)	Yes	Sand / Salt	1:1	Automated	Covered
Kingston (P)	Yes	Sand / Salt / Brine	4.5:1		Covered
Leeds and the Thousand Islands	Yes	Sand / Salt	12:1	Automated	Covered
Loyalist	Yes	Sand / Salt	10:1	Automated	Covered
Rideau Lakes	No	Sand / Salt	14:1	Automated	
South Frontenac (P)	New	Sand / Salt (sometimes with MgCl)	20:1		Covered
Lennox and Addington County (P)	Yes	Sand / Salt	4:1	Automated	Covered
Frontenac County					
United Counties of Leeds and Grenville	New				Covered