DUPAGE RIVER
SALT CREEK
WORKGROUP

2008

FACT SHEET

Chloride Usage Education and Reduction Program

MAYORS/MANAGERS

Salt Improves Winter Road Conditions But Harms Ecosystems

Keeping roads and parking areas free of ice and snow is an essential part of modern life. However, road salt – one of the main tools used to achieve this task – contains chloride as its principal ingredient. Chloride does more than melt snow and ice; it negatively impacts local lakes and rivers. Other minor ingredients of commercial road salt include arsenic and cyanide.

As snow and ice melt they drain into landscaped areas or storm sewers, and then to natural bodies of water. Waters from a deiced area contain high levels of chlorides, which do not degrade, and there is no cost-effective way to remove it. Excessive levels of chlorides can severely impair the ability of plants to absorb water and nutrients. These negative effects are common to both aquatic and terrestrial plants in residential gardens, landscaped areas, and rivers. Fish and other aquatic organisms are then impacted by the decline in habitat.

Salt Reduction is an Environmental Concern Attracting Regulators

The Environmental Protection Agency (EPA) has set total maximum daily loads (TMDL) for chloride in the Upper DuPage River and Salt Creek. These TMDLs state that the legal level of chloride in the rivers is being exceeded, and require that the levels be reduced. In order to investigate current usage of chlorides and possible reduction strategies, the DuPage River Salt Creek Workgroup (DRSCW) conducted a Chloride Usage Education and Reduction Program Study. Based on a survey of 39 communities and eight private companies in the watersheds, an estimated 117,000 tons of chloride are used annually. This figure does not include residential use, meaning actual usage rates are much higher. Local municipalities may consider adopting practices that will allow them to maintain service levels but use less road salt.

Modifications to road treatment – such as plowing prior to salting or applying a salt brine as pretreatment – will reduce environmental impacts due to chloride, and reduce public works costs while protecting public safety. (Photo courtesy City of Naperville)

Alternatives to Salt Can Save Public Agencies Considerable Funds

The DRSCW is not recommending that salting stop. Road salting and resulting chlorides play a huge role in public safety. However, using less salt in general can help reduce chloride levels and help the community – environmentally and financially.

Small mouth bass are found in both branches of the DuPage River and Salt Creek. Chlorides from road salt damage river vegetation, reducing the numbers and species of fish that can survive there. (Photo courtesy Forest Preserve District of DuPage County)

- The City of Toronto reduced its salt use by 25% after educating staff on proper salting techniques. The resulting annual savings was approximately $1.8 million.
- Quebec also reduced its salt usage, trained staff on proper salting and plowing techniques, and used pre-wetted salt. The result was a benefit-to-cost ratio of 2.8:1.

The DRSCW Chloride Reduction Study describes alternatives to conventional road salting. One of the best-reviewed options – **anti-icing** – applies salt brine to roads prior to a forecasted storm, preventing the formation of ice and providing material and cost savings. Minnesota's Department of Transportation reported using 75% less salt with anti-icing compared to conventional salting practices. Agencies in Montana, Colorado, and Oregon also reported cost savings as high as 41, 52, and 75%, respectively.

Pre-wetting salt has also been shown to produce material and cost savings – as much as 53% in some communities. Pre-wetted salt is more likely to stay in the distribution area than be scattered by wind and traffic. Pre-wetting practices are also highly efficient as the salt is treated with moisture, which accelerates the de-icing process. Other alternatives include plowing just before salting, which prevents the application of salt on heavy snow, and transporting large snow mounds to a disposal facility so as to not inhibit continued plowing efforts.

Taking Action to Protect Our/Your Communities

By considering any one of these alternatives, your municipality will be taking an active role in protecting the DuPage River and Salt Creek, while providing material and cost savings for the community. Reductions will also count within the reporting of your municipality's NPDES Phase II permit. With anticipated efforts from public works departments, private plowing companies, and area residents, we can reduce chloride pollution in our lakes and rivers.

Some communities are switching from routine salt application to alternative forms of deicing. This protects the environment while saving communities thousands of dollars. (Photo courtesy Forest Preserve District of DuPage County)

The DuPage River Salt Creek Workgroup

The DuPage River Salt Creek Workgroup is a coalition of communities, sanitary districts, environmental organizations, and professionals working to improve the ecological health of Salt Creek and the Upper DuPage River. For more information go to www.DRSCW.org

For More Information . . .

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