



PLEASE NOTE

This article can be used by a CRWP Member community as a stormwater education piece to meet the requirements of their Phase II Stormwater Education Program. The article can be used in a community newsletter, posted on a community website, or format desired by the community.

All areas highlighted in *bold/italics* must be adjusted for your community.

Benefits of Reduced Road Salt Application

While salt is a necessary part of winter road and walkway safety, it does have its drawbacks. Road salts applied to roadways can enter air, soil, groundwater, and surface water from direct snowmelt runoff, release from surface soils, or wind-borne spray. The accumulation and persistence of salt poses risk to our cars, homes, landscaping, and stream life.

Like most Midwest states, Ohio has seen a dramatic increase in the price of salt needed to treat roadways and bridges. According to a recent Ohio Department of Transportation report, the cost of rock salt for this year increased between 50 and 300% from last winter. For example, the *[Community]* spent \$*XXX,XXX* during the 2007/2008 winter season to purchase *X,XXX* tons of salt. The same tonnage of salt purchased this year, if it can be found to purchase, could cost approximately \$*XXX,XXX*. To be mindful of the budget and product availability, action has been taken to cut back on salt usage. Many communities in Cuyahoga County, the Midwest, New England, and ODOT instituted a Smart or Sensible Salt Strategy developed to reduce salt usage by 30%. The strategy requires a more efficient salt use that still ensures continued safe and passable roadway conditions. While this was part of a strategy to reduce salt costs, the benefits go far beyond state and local budgets. Ohio EPA recommendations reducing salt usage as pollution prevention measure for to communities required to comply with state and federal storm water regulations.

The negative effects of salt have historically focused on the damage salt does to our vehicles. Salt's corrosive nature contributes to rusting, but road de-icing salt can also damage concrete, including bridge infrastructure. Although road salt rarely jeopardizes the structural integrity of bridges, its corrosive nature damages bridge decks. The chloride ions from the salt penetrate concrete and corrode reinforcing rods, causing the surrounding concrete to crack and fragment. Installing corrosion protection measures in new bridges and repairing old bridges could cost snowbelt states between \$250 million and \$650 million per year (Stormwater Magazine, May/June 2001).

Chloride from road de-icing salt in water runoff and streams can make their way into our groundwater aquifers and affect our drinking water. Approximately 55% of road-salt is transported via water runoff from roads to streams, while the remaining 45% of road salt seeps into the soil and into groundwater aquifers. Excess road de-icing salts have a toxic effect on the health of the stream, including its aquatic insects and fish. The *[Community]* and many communities along the I-271 *(or other major thoroughfare)* corridor are a part of the *[rivers to which community drains]* watershed, which means water runoff drains into streams that make their way to the Chagrin River and ultimately Lake Erie. It has been shown that prolonged exposure to high levels of chloride can have negative effects on stream aquatic insects.

Unfortunately, for plants, salt often ends up on landscaping, injuring plants in several ways. When salt spray gets onto plants, it may scorch leaves or kill buds and twig tips on deciduous plants, especially



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during spring. Accumulation of salt in the soil also makes it difficult for plant roots to absorb water, prevents seed germination, and decreases soil fertility.

⇒ ***NOTE: ONLY INCLUDE THE PARAGRAPH BELOW IF YOUR COMMUNITY'S DRINKING WATER SOURCE IS GROUNDWATER.***

While it may seem like a minimal impact, chloride in water runoff and stream can make their way into our aquifers (groundwater) and affect our drinking water. This can be a concern for people on low-sodium diets. Elevated levels of sodium and chloride can also interfere with taste, the watering of certain plants, and increase the corrosivity of water, which in turn can affect the household plumbing.

Although many communities have considered more efficient and sensible salt usage on roads due to the cost and availability of salt, the benefits of this practice include less salt entering the storm water system and ultimately reaching our streams and Lake Erie; reducing damage to landscaping and road surfaces, as well as a savings on long-term road maintenance.