

Road Salts & Water Quality/Sourcewater Implications

Regional Issue Briefing Paper *(as of 1/14/16)*

Background

Government transportation agencies are generally responsible with ensuring the safety of roads and other impervious surfaces during inclement weather - and the use of sodium chloride (i.e., road salts) for deicing are among the many important tools utilized to accomplish that mission. At the same time, it has long been known that the use of rock salt on those impervious surfaces has harmful side effects on the environment, particularly as the salt dissolves in melt water and runs off into urban streams. Elevated concentrations of chloride and other ions can in fact be toxic for aquatic organisms. Chlorides in sourcewaters can also pose a challenge for drinking water providers, as certain levels of chlorides may have taste and odor impacts. Water quality monitoring data from urban streams in the Washington region shows that high chloride levels are being detected, particularly during runoff events in the late winter and early spring. There is also some evidence that chloride levels may be increasing over time in the region's sourcewaters as monitored by local drinking water providers.

Efforts to minimize environmental impacts of these deicing products have included: changing application techniques to reduce use of the products; using salt brines to enhance the effectiveness of deicing agents and reduce the amount of product used; and employing alternative products for deicing - such as calcium-based products.

Regulatory Status & State/Federal Activities

EPA had previously defined regulatory limits under the CWA to address toxicity issues for aquatic organisms such as in local streams, and non-enforceable regulatory guidelines under the SDWA to address sourcewater issues.

The State regulatory agencies in Maryland and Virginia have also collected chloride monitoring data directly as well as other indicators of salt content. They are currently exploring whether high chloride levels contribute to the impairment of the growth of benthic macro-invertebrate organisms in streams. The Virginia Department of Environmental Quality has identified chloride as one of two major causes of impairment in Accotink Creek in Fairfax County (along with sediment) and has plans to issue a local Total Maximum Daily Load for chloride in this watershed sometime in 2016. The Maryland Department of the Environment already lists some streams as impaired by chloride and plans to issue several such TMDLs in the 2016-2022 time frame. The USGS is also planning a workshop in April, in conjunction with the Maryland Water Monitoring Council to address "Environmental Impact of Road Salts on streams, groundwater, aquatic life, etc. & Road Salts application practices".

COG Activities & Next Steps

Last year, COG awarded a regional contract for the purchase of an ice melt product for sidewalks and parking areas made with Calcium Magnesium Acetate (CMA), a product with less harmful impact on the environment than sodium chloride. This year, COG's Environmental Programs staff is planning a workshop to address chloride/road salt issues to be held in the spring of 2016 - following the USGS workshop. COG's workshop would summarize the USGS findings and local concerns; involve COG's Transportation Planning staff and local and state transportation department staff; and focus on best practices/options.