



15 September 2017

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Re: Road Salt Contamination of Ramsey Lake – Ramsey Lake Sub-Watershed Study:

Dear Sirs:

One of the main stated purposes of the Ramsey Lake Sub-Watershed Study and Master Plan is to maintain and improve water quality in the water body that provides drinking water to over 30 percent of our population, estimated at over 50,000 individuals.

The Greater Sudbury Watershed Alliance is concerned that the rising levels of sodium and chloride, elements of road salt, in Ramsey Lake may not be given the attention deserved. It is widely recognized that increased levels of sodium can have a detrimental effect on human health, and that elevated levels of chloride can adversely affect aquatic life.

A Laurentian University published article by Dr. David Pearson and Dr. John Gunn stated, *“Perhaps because pollution in Sudbury has been so dominated by easily visible point sources, little attention has been given to the effects of surface runoff, even though storm water is discharged directly into Ramsey Lake, the main drinking water supply for residents in the urban core. One of the consequences with possible implications for human health is the elevated concentration of sodium, derived from road salt in Ramsey Lake”*¹.

The David Street Water Treatment Plant is a surface water plant that draws its drinking water from Ramsey Lake, and does not remove sodium chloride. Water quality sampling data for 2015 reports sodium levels at 52.80 mg/L.² As reported in The Greater Sudbury Source Protection Area Assessment Report, due to a variety of geological, historical and industrial practices, *“The majority of the Ramsey Lake Watershed is covered in bedrock and therefore has little infiltration*

¹ The Past, Present and Future of Sudbury’s Lakes, by D.A.B. Pearson, J.M. Gunn and W. Keller

² Greater Sudbury 2015 Annual Water Quality Reports, Per: Ontario Regulation 170/03, s. 11(1); Ontario Regulation 247/06, s. 10(1)

*capacity to attenuate contaminant runoff. Many of the tributaries into the lake are intermittent in nature and respond quickly to storm events. Impervious surfaces are measured as an indicator of the amount of area where road salt can be applied*³.

The World Health Organization, and most jurisdictions in Canada and the USA, have determined that sodium levels over 20mg/L can have injurious effects on 20 to 25 percent of the population, especially those on a salt restricted diet. Additionally, the local Health Units in Ontario, under Drinking Water Systems Regulation 170/3, are required to notify physicians to provide support to patients who have been medically advised to follow sodium restricted diets. Further, a range of studies have found that chloride from road salt can negatively affect fish, plants, and other aquatic organisms.

Despite the stated objective of the City to mitigate salt discharged into the environment, continued development in the watershed would likely negate these efforts. Current expansion of Second Avenue will almost triple the amount of road salt loading into Ramsey Lake. The City has indicated that the expanded road surface area for Second Avenue would increase from 7,500 m² to 19,500 m²,⁴ which is an approximate 160 percent increase, or an additional 12,000 m².

A quick estimate of proposed road widening and new road construction in the Watershed ⁵, and in particular on the north and south shores of Ramsey Lake, would total over 100,000 m², which could result in significant additional run-off into the watershed. In addition, new residential, commercial and public infrastructure that requires the use of road salt under winter conditions will further exasperate the problem.

Urban development in the watershed continues to increase, creating further amounts of impervious area requiring winter de-icing. Sodium and Chloride, the two primary ions in road salt, remain in solution, making it difficult with present-day technology to design effective management practices for reduction of road-salt loadings into receiving waters after application. Currently, reduction in usage appears to be the only effective road-salt-runoff management strategy.

GSWA requests that our concerns, and especially of those who depend on Ramsey Lake for their drinking water, be given special consideration in the development of the Ramsey Lake Sub-Watershed Study and final report. We recommend effective mitigation measures be employed to limit further road salt contamination, including possible constraints on hard surface development requiring the use of road salt, or any other substance that could adversely affect Ramsey Lake water quality.

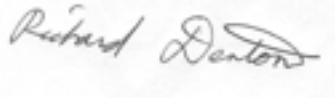
³ The Greater Sudbury Source Protection Area Assessment Report, (City and MOECC approved 2014).

⁴ Second Avenue Infrastructure Improvements Project, Municipal Class EA, Schedule B Project. Presentation: Second Avenue Reconstruction, August 14, 2014, Slide 10

⁵ Greater Sudbury Transportation Study Report.

We look forward to your response.

Respectfully,

A handwritten signature in cursive script that reads "Richard Denton". The signature is written in dark ink on a light-colored background.

Richard Denton
Chair, Greater Sudbury Watershed Alliance
Chair@GSWA.ca

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