



# ROAD SALT DISCUSSION Summary Report

5 February 2018

## **Abstract**

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Summary Report prepared by the:  
Drinking Water Protection Committee  
Greater Sudbury Watershed Alliance

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# ROAD SALT DISCUSSION

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## ROAD SALT DISCUSSION – SUMMARY REPORT:



The Greater Sudbury Watershed Alliance (GSWA) held a Road Salt Discussion event on 5 February 2018, at the Vale Living with Lakes Center. The purpose of the event was to raise an awareness, and to explore possible solutions to increasing sodium and chloride levels in Ramsey Lake, a primary source of drinking water for over 50,000 residents in the City of Sudbury. The Lake's sodium levels are approaching three times the level at which the Medical Officer of Health must be notified so patients on sodium-restricted diets can be alerted; and chloride levels are rapidly approaching a level that can harm aquatic life.

GSWA has formally expressed concern to the City with regard to the additional winter road salt required to service the [Second Avenue Industrial Improvements](#), the proposed [Casino](#) parking lot, and the numerous other road projects proposed in the recent [Transportation Study Report](#). These developments, as well as the proposed Arena parking lot, would result in an increase in hard-surface road and parking areas within the Ramsey Lake Watershed, and would mean a significant increase in sodium and chloride concentrations, elements of road salt, in Ramsey Lake.

GSWA has also expressed concern that the [Ramsey Lake Sub-Watershed Study](#) is not adequately considering the road salt issue and, to that point, a poster board at the 3<sup>rd</sup> Public Information Center, hosted by the City, described the rising sodium and chloride concentrations as “*have increased but are within accepted limits*”.

Richard Denton, Chair of the GSWA, facilitated and opened up the Road Salt Discussion with a welcome to panelists and attendees, and made an [introductory presentation](#) to provide an overview of GSWA’s concerns and questions.

Dr. John Gunn, Canada Research Chair, Stressed Aquatic Systems and Director of Vale Living with Lakes Centre, suggested that the City should focus on long-term vision and planning when it comes to protecting our lakes, and approving development. He expressed concern that the Ramsey Lake Sub-Watershed Study fails to reflect a made in Sudbury solution, and said there is a need for the same kind of investment in our lakes as we are putting into large local developments. Dr. Gunn also pointed out that salt is simply a signature and synthesis of all the other insults we do on the land, and the failures we have had in Ramsey Lake are expressed in tangible ways that people care about, in what you can see, smell, and taste. Property values and thus the tax base will be heavily impacted as water quality degrades and the quality of life in Sudbury’s City of Lakes no longer draws high-tech industry nor entices our children back to this area.

Dr. Charles Ramcharan, Associate Professor, School of the Environment, Laurentian University, warned that even at the lower end of elevated salt levels we are seeing some effects on diatoms and eventually some effects on green algae, and that reducing the competitiveness of these species favours blue-green algae. He also emphasized the need for the City to have a hydrology budget to tell us how much salt is coming from the landscape, and what the different sources are.

Anoop Naik, Water Resources Specialist, Conservation Sudbury, informed us that the Source Water Protection Authority has authored an Assessment Report, under the Clean Water Act, to characterize the watershed, and under water quality threats and issues, road salt, sodium and chloride, are now identified as water quality issues.

Those attending also offered many potential solutions, such as using less road salt, using alternative de-icers, and/or using only sand within the Ramsey Lake Watershed. A great deal of concern was also expressed with regard to the additional road salt that will be required to de-ice a 27-acre Casino parking lot, and there was a suggestion of diverting its run-off into the adjacent watershed. Prevention was also emphasized, in that many other jurisdictions don’t allow any development in and around a public drinking water source.

The Road Salt Discussion was deemed by many to be a huge success. It attracted approximately 65 participants, including members of City Council, Conservation Sudbury and its Source Water Protection Committee. The event also generated several articles and interviews that can be found linked on the [GSWA Blog](#).

Next steps for GSWA is to review and provide comments on the Ramsey Lake Sub-Watershed Study when it is released sometime this spring; and to partner with the City of Sudbury on a Road Salt Pamphlet to help educate and inform the public on what they can do to help reduce sodium and chloride levels in local water bodies.

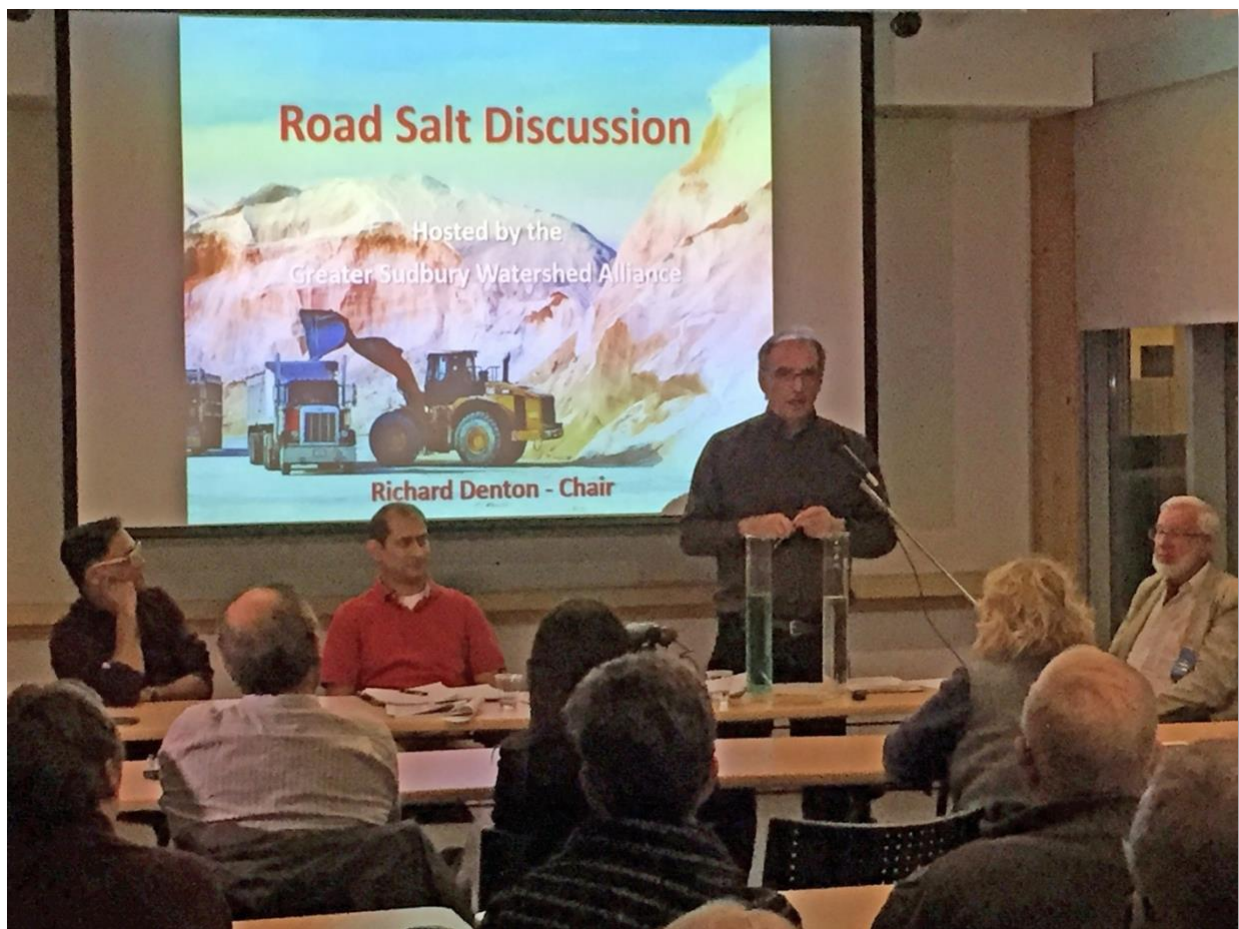
GSWA recommends reading the full report for a more fulsome accounting of the Road Salt Discussion.

## THE VISION, THE CONCERNS & THE CHALLENGES:

What follows are key excerpts from the Road Salt Discussion, both from the Science Panel and those who participated in the discussion. Panel Members were:

- Dr. John Gunn (JG), Canada Research Chair, Stressed Aquatic Systems and Director of Vale Living with Lakes Centre
- Dr. Charles Ramcharan (CR), Associate Professor, School of the Environment, Laurentian University
- Anoop Naik (AN), Water Resources Specialist, Conservation Sudbury

Nels Conroy (NC), Chair of the Source Protection Committee, was also in attendance and made an excellent contribution to the discussion.



The following are excerpts from a transcript of the event:

**The City expressed a clear and magnificent vision through the 100-year Ramsey Lake Plan – it was a really exciting time – that plan is now a quarter of the way through. What have we achieved?**

More than 25 years have gone by and we don't yet see the vision out the window that we all imagined at the time. A vision that something extremely special in planning and design was going to happen in Sudbury, that would make this a City of Lakes where kids would want to stay.<sup>JG</sup>

**One of the ways to make it special is to make the same kind of investment into the lakes as we are willing to invest in casinos or the Performing Arts Center.**

It needs that same scale of thinking and investment to make this a really attractive city with clean water where a quality of life and a knowledge infrastructure is surrounded by lakes, and a place to compete with Toronto or Silicon Valley.<sup>JG</sup>

**What we fail to bring together in the Ramsey Lake Sub-Watershed Study is a made in Sudbury solution.**

We haven't had the support and the will-power to try some new things and do something different with the watershed plans. We're just applying standard engineering suggestions, technologies, that are used elsewhere to the same effect with salt levels continuing to build up over time.<sup>JG</sup>

**Salt is a synthesis of all the mistreatment and failed management efforts we make on the land.**

The thing that disturbs me most about salt is it is simply a signature of all the other insults we do on the land - if salt makes it to the water, then everything else makes it to the water too. We need to start to think of how we can stop or slow these processes down.<sup>JG</sup>

**The kind of predictive models of salt effects that other communities use are often driven by first assessing percent impermeable surfaces in the watershed. For example, does your lake have more than 1% hard surfaces?**

Such models don't really apply in Sudbury. We don't have any areas that have less than 1% - we have rock, ridges and we're always going to have that, so run-off of water and salt is always very rapid. Then we have tens of thousands of tons of metal particulate still in our soil - copper, nickel, zinc - 100 years of deposition. When you open a new road bed and you spread salt, during construction or whatever, you leach out the organics and metals stored in the soil.<sup>JG</sup>

**So, there's a challenging time bomb we face out there.**

It's not surprising when the bypass was constructed to Coniston that Perch Lake and Lake Laurentian exhibited spikes in road salt. The same thing happened after the bypass was constructed to Lively - Hannah and Middle Lakes - salt levels spiked.<sup>JG</sup>

**With our rocky thin soil, we have very little resistance to the hydraulic changes of climate change, and the current sub-watershed study is not facing this future at all.**

Sudbury is a drought prone city, but flashy at the same time. Such landscapes need different management prescriptions and new techniques. So, if our precipitation is all coming in winter, it's not only miserable for skiers, but we now need to design our culverts, our infrastructure, and our

salt management strategies, with this season shift in mind? I hope we can describe what those might be for Sudbury. <sup>JG</sup>

**Most Sudburians are happier if the lakes are clear and clean.**

I don't get very far with the vast majority of the public if I stand up here and appear to be a 'tree-hugger' and talk about aspects of lake ecosystems that many people don't even like, such as bugs, and fish and invertebrates. <sup>JG</sup>

**If we are going to effectively engage the public, we need to link the salt issue to things the public care deeply about.**

Algae blooms is one concern we all share. People truly care about what can you see, what can you smell, and what can you taste? <sup>JG</sup>

**The water clarity issue, algae, is probably a good way to galvanize support for this issue.**

We have identified phosphorus as a major problem, but we haven't been able to convince the city or the citizens to manage phosphorus any better than we have before. <sup>JG</sup>

**I think salt will trigger algal changes that are going to be truly troublesome.**

Salt not only leaches nutrients from freshly disturbed soils but creates anoxic zones in lakes. I can't sort out the literature very clearly yet, but it looks like there will be advantages given to blue-green algae over healthy green algae as we salt up our lakes. In high salinity areas, cyanobacteria blooms occur – whether it's going to operate at the levels we have here, I'm not sure, but the nutrient additions that accompany the salt are likely going to make this transition happen. <sup>JG</sup>

**It's not a small financial matter. You can convert lost property value to algae, to tax base, to arenas, whatever way you like.**

In the State of Maine, for every loss of about a foot or two of lake water clarity, property values drop by 7%. You can take a calculation on Ramsey tonight, for a 100' lot, that amounts to about \$20,000 to \$30,000. Across the lake, about \$20,000,000 or more of lost property value might then occur. As we pollute lake after lake we then lose our property value and our tax base. <sup>JG</sup>

**So, you can express increasing algae and declining lake water quality as lost property value, a big hit to the tax base - as much money as it might take for instance to build an arena. Lake deterioration is a big deal!**

You're here because you live on lakes. The quality of life and the property values that people would like to maintain if they were to come to Sudbury and build a high-tech industry or a chromium smelter. <sup>JG</sup>

**When we start to look at rising salt levels in our lakes, we are simply looking at poor management of our watersheds.**



That lost opportunity is that we will never become the ‘clean water City of Northern Ontario’. If we allow the lakes to deteriorate again, your kids and grandchildren won’t want to stay or come back to Sudbury – as simple as that. Without our lakes we don’t have much to offer. <sup>JG</sup>

**Our stormwater management ponds where salt accumulates are not managed.**

We don’t remove sediments in front of the hospital when the pond dries up and fills up. We don’t go looking for ways of collecting and gathering the salt. We have made a good job of where to put snow dumps, but are we going to see the vision that the Ramsey Lake Management Plan had – it was a glorious vision. <sup>JG</sup>

**We need some new thinking about how to do all those things.  
The old thinking is in front of us here.**

That’s our drinking water, it’s just free water that comes right out of the tap. When we do have toxic events they’re usually acute events, maybe a snow melt. We could have designed that into catchment ponds or tried other ways of dealing with it, but the persistent, steady deterioration means we have to reduce our use, and be very careful of bringing salt into the watershed and taking as much as we can out of the watershed. <sup>JG</sup>

**Algae is another one that we should be able to come together and  
agree that a \$50,000,000 to \$100,000,000 investment in  
clean water in our lakes is the scale that deserves attention.**

I left it as just a big issue that I think ultimately translates down to algal effects will be even worse. I’m just thinking that we haven’t done it well enough yet, and we’re just going to have to have some smart groups working hard on new techniques as best we can. <sup>JG</sup>

**But what you see in these systems is the integration of effects.**

Some of the more sensitive organisms are freshwater mussels – that’s something people don’t pay much attention to, but in terms of what’s on the endangered species list, it’s freshwater mussels. About 65% of the species that are in North America are on the endangered list, not the threatened list. Then moving up from there, there are effects on some fish species and then effects on invertebrates as well, which tend to be further down the list. <sup>CR</sup>

**Even at the lower end of elevated salt levels we’re getting some  
effects on diatoms and eventually some effects on green algae, and as John  
said, reducing the competitiveness of these species favours blue-green algae.**

One of the most important things in water chemistry for determining how much phosphorus is available for algae is ionic strength of the water, and if you increase ionic strength you do get more phosphorus that’s available for blue-green and other algae as well. I don’t know if there is a direct link, I haven’t seen that link made, but the potential is there. <sup>CR</sup>

**John also talked about climate change, and that’s very big!**

I know the City is doing everything they can to reduce the amount of salt that’s getting into our system, but it’s getting tougher because we’re not just getting a warmer environment, but also freeze/thaw cycles that are more extreme. <sup>CR</sup>

**I would love to see a water budget for the City, a hydrology budget that tells us how much is coming in from different sources – then we could evaluate how much salt is coming from the landscape.**

People are putting salt on at their homes, commercial lots, and how much is coming from the roads that the City is able to control. <sup>CR</sup>

**Ramsey Lake is right in the middle of the City,  
and it has various types of stress.**

So, when I was looking at the data, sodium and chloride concentrations range anywhere from between .02 mg to close to 65, 70 and sometimes I have seen 200 mg on certain watercourses. There's a lack of data to say that's the normal concentration - most samples were collected during the spring freshet. <sup>AN</sup>

**So that's one of the things that changed when we started  
working under the Clean Water Act. <sup>AN</sup>**

John also mentioned that there used to be open salt storage not far away from Ramsey Lake, right along the wetlands of Frobisher Creek. So, a lot has changed and is changing slowly.

**Because we authored the Assessment Report,  
I know the water quality data we have...**

Once we hear from the MOECC we might update the graph you saw, which ends at 2013 – once we get a little more data we can update it rather than arbitrarily extending that trend line. I would say it's more appropriate having the actual data reflected to see where it's going. Definitely there is an increasing trend. <sup>AN</sup>

## QUESTIONS & COMMENTS FROM THE FLOOR:



**How difficult would it be to get the City to conserve each and every wetland that we have in the entire watershed area, because wetlands help filter and improve water quality in our lakes?**

We definitely should be protecting wetlands for many, many purposes, especially as we go into a drought future. <sup>JG</sup>

**I think Ramsey Lake as it stands is an embarrassment as a drinking water reservoir. It may be okay to water your lawn, but it isn't okay to drink out of.**

So practically speaking I drink the water, and I'm over 50, and no one says it's great to be drinking water that's 53 to 54 ppm. So as a citizen, I figure, well I moved up here, the least they could do is give me potable water.

**Although I know there are challenges here, why do you allow ice huts in the winter on your reservoir when other jurisdictions put fences around theirs.**

In Vancouver, the only way you get to look at the reservoir is when you walk across a suspension bridge. You don't see any houses there, you don't see anything there but water. So, to me, practical reality is that we're living in a City with somewhere around 160,000 people, there's a big variation in water quality, but we have 50,000 people drinking out of that lake.

**As one of the people drinking out of that lake I want to know that the**

**City is thinking about this reservoir where I am.**

This reservoir is too far down, it's been ignored far too long, so why don't we simply take that water from Wanapitei? It seems like the City has been doing everything to make the situation worse, not better. All I hear about is some guys going to the OMB to fight for his development along the shore of Ramsey Lake. In Vancouver, nobody's fighting for development in their reservoir because it wouldn't be allowed.

**It's very clear that if we get drinking water from here  
that we keep all non-conforming uses at a distance, and  
I think we have to admit that this is not a good drinking water reservoir.**

So now, what are you going to do for 50,000 people – are you going to buy my water for me? I shouldn't have to buy bottled water because these people can't figure out how to provide good drinking water.

**A newspaper article came out in the Sudbury Star  
over the weekend, and suggested that the sodium and  
chloride levels had stabilized, and I haven't seen any data that supports  
that, but I'm wondering what difference the Casino will make on Ramsey Lake  
with a 27-acre parking lot at the top of the watershed, and what would be an  
effective means of mitigating that large parking area with over 2,000 parking  
spots? Is there any way to protect Ramsey Lake, our drinking water source,  
from the run-off of a large parking lot like that?**

I just want to add to what Linda said about the new casino. Storm Water Management is based on the 2003 Stormwater Best Management Practices and Guidelines, so based on that then the water quality objective was primarily focused on suspended solids, but not road salt or anything else. So unfortunately, we are kind of stuck with what is happening there. Only the new guidelines, or the new updated Stormwater Manuel might help better focus on water quality. <sup>AN</sup>

There is an opportunity in that particular case to basically divert all the parking lots over to East Romford Creek, and thus not increase the chloride loadings into Ramsey Lake. Empties into Coniston Creek, and then into the Wanapitei River – so that would protect Ramsey Lake. It does protect the drinking water supply. Whether they are considering that option, I can't speak to, but practically it can be done.

**There is a very nice sign just down the road that was put up  
by Conservation Sudbury saying it's a water protected area, well it's not.**

There's so much salt that goes in there, they don't salt my road because there's very little traffic on it, but the guys, they drop the salt, what they want to. If we're trying to do something as a watershed group we have to get back to the City and to our Councillors to see what the band aide is, and how much salt is actually put in there, because it doesn't sound like there's any easy solution in the near future. Use beat juice, leftover alcohol from a brewing plant, whatever you want, what we have to face here is to stop using salt. Salt is cheap, that's why we use it. It's effective at certain temperatures, that's why we use it.

**We spend X amount of dollars on salt each year, take that and put it into  
extra grader time and sand, instead of salt, and try and have a program like that.**

That's something you could do almost immediately, you could look to see what the feasibility is, do a cost-benefit analysis versus the cost of the salt and all the damaging effects that it has. Perhaps that's a good start, and it's simple – it can be done almost immediately if Council decided that's something that made sense.

**I don't think salt is something we have to have,  
we can live without it when there are other jurisdictions  
that are doing it, so why don't we take a serious look at it.**

I think there are some very simple things that can be done very quickly to start the process of people becoming more aware and be more supportive of it.

**The City is now making their 5-year plan, and we  
should be giving them this as a priority because just as you  
jokingly said you have hypertension, that's one of the major problems.**

We have got more hypertension, more diabetes, more health problems in this area than the rest of the province. I'm a registered nurse with the College of Nurses. I've been a registered nurse for 53 years and worked in this community here. I know the health problems are directly related to a lot of our environmental problems.

**I know on Lake Simcoe they're concerned  
about 50 mg/L of Chloride, and we are at 100 now.**

They're concerned about the future looking at the year 2100. What are we looking at by the year 2100 here in Sudbury? What is our grand plan for the future? I think that's what we really have to look at. As John put it very nicely, are we going to have a liveable community or are we going to have a desolate community. We've done so much to re-green our community, we're world famous for what we've done. We've re-greened land, we want to be sure we don't re-green our lakes.

**The core of mitigation is to understand the problem in the first place.**

I just wanted to emphasize that if we had a detailed hydrological profile for the City and we knew what the inputs were into Ramsey, that might help answer this question because then we know how much is coming in from the roads directly, or from residential and commercial properties. That would really help. <sup>CR</sup>

**I was hoping that was the type of  
information we would get out of the watershed studies.**

I was hoping we were spending that kind of money on those quality firms that would bring those answers to us, but outside of what we've heard tonight about controlling, using substitutes, limiting loss from storage, I have not seen too many other exciting new ideas. Just like we did with sulphur dioxide, it comes down to reducing at the source. We have to find ways to limit the amount of road salt we use, have far more efficient machinery, and procedures in which to use it. So, I didn't see any magic. <sup>JG</sup>

**When we look at the areas in southern Ontario, they've**

**done regulations, and I've been told by the City of Sudbury that we can't have regulations like the Greenbelt Act, or whatever they have down there.**

The Source [Water] Protection Plan is in fact law, and when the Risk Management Plan for salt management are brought before the [Source Protection] Committee, and the Committee approves them, if they're approved, that's law. You can't even go to the OMB with them after that, so they're not a guideline, they're law. We're a little concerned that our plan is not strong enough, that we may not have anticipated 30 or 40 acres of parking lots and so on and so forth. If that's true, that plan will be rewritten. We will have to look at it again and again and again. The Source Protection Committee worked hard to develop plans that include Risk Management Plans on how they pour salt, how they use salt in parking lots, and also includes a bunch of education and outreach programs where the public can buy-in to how they can help reduce it. All that will accomplish is perhaps in lessening the salt, because at the same time we're going to continue to use anything that's going to prevent broken hips. I think Dr. Denton put it into context very well that there is no magic here.<sup>NC</sup>

**I had the honour of sitting on the Lake Simcoe Act, and it was considered the gold standard for Ontario.**

Development could not proceed without meeting very, very high standards under their new processes. I don't feel I'm seeing the same evidence here, that we carry forth on construction and building codes anywhere near as rigorously as Barrie is doing. So, I believe there are opportunities in retrofits and new development, that we should be as rigorous as the southern communities are.<sup>JG</sup>

**In the past we used to dig up ore and lay it on fields of trees that had been cut down, and we used to burn it on the O'Donnell roast beds and we thought that was a good idea – we got what we wanted out of it. We realize now how bad that idea was bad for the environment, and we changed what we did.**

I think this is one of the first steps in moving forward. We now know we can't keep doing what we've been doing because we are going to destroy our environment, our infrastructure, our health and everything else. So, I think this is a great first step into realizing that we're going to have to do things a little differently. Even if it's just on our front door steps. Shoveling more – a little bit less salt, using sand. Then deciding, do we need a lot more roads in the watershed, can we do without, can we go a little slower, should we not go down to bare roads, can we leave a little snow on the roads. So, I think this is a good first step in thinking about how to move forward.

**If you look at the species list, if you want to include some biology in this as well, the most sensitive organisms that we lose are the natural water cleaners. The daphnia and the freshwater mussels are the first to go, and those are the things that keep our water clean.**

So, I think when we go out to schools or any other groups, the road salt issue clearly resonates on the health and the risk assessment issue, but on the environmental front it's the greening of the lakes and the loss of aesthetics of the lakes which will have an impact.<sup>JG</sup>

**I often get calls from real estate people wanting to**

**move clients to Sudbury and wanting to know what the quality of the water is in a particular lake, and that makes a huge financial choice.**

That's why I think that building and construction codes should just take that into cost of doing business. We shouldn't have to bear it all ourselves, the price of those valued properties, or the loss of those values, are something that should bring attention to this issue. If you tried to put a dollar value on the lakeshore properties of Sudbury, what would it be? It's an enormous value, and if you degrade that by 7, 10 or 15%, that's an enormous loss. <sup>JG</sup>

**I think we're at the point where, with climate change creating more and more uncertainties, it's most likely to appear in issues like anoxia, oxygen problems, and phosphorus coming back.**

So, I think we can capture the imagination and the support of the public with the algal issues – it's a way of visualizing it anyway. <sup>JG</sup>

**We need a key fundamental shift in the attitude at City Hall.**

A number of us went to City Hall and we said, here's a development, we're not opposed to development, but we don't want the stormwater management pond of this development put in a flood plain, and the Councillors agreed, and they said, take it out of the flood plain. Then they met behind closed doors and they made those concessions to the developer, and they said okay you can build in there because we've got a new Ministry of Conservation agreement.

**Perhaps we need that 100-year plan, and we need vision where we can establish goals and priorities and values that we can figure out what activities we want to do.**

Maybe we need to focus our activities on what we call our jewel in the City, before we tarnish our jewel and it's no longer there. We can build a green economy, I think that's what I heard you saying John. That there are lots of ways to generate income, not just property values, but income through a green economy. By being innovative we can gain back our reputation, but maybe we haven't lost it, maybe we need to build on it. We can have a green economy and have everyone involved in what we're doing.

**The current road salt reduction program and risk management program, have you seen any significant improvement in water quality, in the amount of sodium and chloride in our lakes?**

So there are two parts, one of them is that if you look at the sodium and chloride graph in our assessment report, somewhere early in 2000 you can see a shift in the pattern of concentration. There was much more diverse availability of the sodium and chloride distribution. But somewhere close to 2000 we weren't sure when we were analysing the data, was it because at the same time the City had changed the way they apply salt. That's where their Class 1 to 4 and 3 to 6 roads, salt and sand was applied, and those kinds of distribution. So, we are still trying to understand how it correlates. <sup>AN</sup>

**The best vehicle, and possibly the only one for institutional land in mall parking lots is a site plan**

If it's a new site plan you probably can change some of the issues related to salt. If it's an old site management plan, and by old, I mean a decade old, then probably not. So, one of the issues with our Source Protection Plan is we want all those areas to have Risk Management Plans, and those will be negotiated between the owner and the City on behalf of the Source Protection Committee.<sup>NC</sup>

**It is not just that they do a lot of salting – but they do do a lot of salting.**

But it's also the salt storage, and one of the easiest things that's being done in a lot of areas, is that snow that's piled up should be taken to the snow dump and shouldn't be allowed to stay in the watershed. That's hopefully covered in the Risk Management Plans that are now being submitted. If it's not our Committee is going to send them back.<sup>NC</sup>

**They've [Lake Simcoe] been working with the developers, but it's data driven. It's driven by real research from real scientists to get those answers. It's not that expensive, it's doable, and it works.**

We have a lot of questions that I think are still in people's minds about where the salt is coming from and what the impacts are, what the long-term impacts would be on biota, as well as on humans. John brought up example of Lake Simcoe, and other people have as well. Lake Simcoe enjoys the benefit of being the only lake in Ontario that actually has a line item in the Provincial budget because of the Lake Simcoe Act, and a lot of that money goes into research.<sup>CR</sup>

**If we can have proper models that run the City, predict the future with climate change, we can possibly make far more efficient management decisions.**

They do have a functional model for that whole region, and we haven't got the same, but on phosphorus, all the common knowledge we had going into it proved to be wrong. About 60% of the phosphorus was coming from the atmosphere through poorly managed soil piles, and construction sites - dust. That model helped show a way forward in managing construction sites, that was extremely helpful. That is the sort of opportunity we might have in the future here.<sup>JG</sup>

**I think there has to be some recommendation from this Committee that the Public Health Unit make that as part of their mandate for the next 5-years.**

We have to move this forward, not just as an academic thing, but this is a health issue. We have got lots of other issues about this, but it is a major health issue for our residents and citizens in this whole area.

**Is there any chance that the second thing from this meeting could be the elimination of the salt, and the enrichment of using more sand, and possibly lower speed limits so they're not going 80 km/h.**

Is it feasible for this organization to apply for an exemption of the provincial bare pavement policy within the jurisdiction of this watershed? We have to use something other than salt, that's number four.



## SUMMATION:

**What once was thought of as a great idea is not thought of as a great idea a few years down the line.**

Unfortunately, chloride-based salts are the most abundantly available de-icing agents, and not the best one. I know some of our counterpart CAs are working with municipalities to find alternative solutions, and they're still working on it. Some of it they are trying out, and the results have yet to come out. Having said that, most of them are doing some form of dilution of some chloride-based salts. So, it's not that it's completely salt-free solutions out there. <sup>AN</sup>

**Liability is the biggest thing which drives most of the people applying road salt.**

I keep criticizing how lawyers and insurance companies are dictating our day-to-day work, unfortunately. I keep criticizing how lawyers and insurance companies are dictating our day-to-day work, unfortunately.

**These are answerable questions - it's not rocket science.  
If we had a set of studies, we could be talking about this knowledgeably,  
and from there we formulate the plan.**

Until we have that I don't know how to proceed. <sup>CR</sup>

**If we are going to be the City of Lakes, and we're going to do something different, we really have to stay the course on this.**

There are different groups with different angles that will tackle the major challenges, and the one that we haven't used to date is the financial issue. <sup>JG</sup>

**I think we have got to push hard, and I would like to see that vision of 1990 brought back.**

That we start to use our lakes as our primary focus in our logos and our images and start to make Sudbury the City of Lakes again. I think hard decisions at Council might be loosened up a little bit at that time. <sup>JG</sup>

**So, look at the solutions proposed  
- less salt, no salt, more sand, less polluting Ramsey Lake  
or Wanapitei Lake. Prevention is the way to go. <sup>RD</sup>**