

## For Information Only

### Fluoridation of the City of Greater Sudbury's Public Water System

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### Recommendation

For Information Only

### Background

Water fluoridation remains a contentious issue in Canada and many communities have initiated the debate as to whether or not their public water system should be fluoridated or not. This report has been prepared as per direction from Council for **an unbiased assessment of the use of fluoride in water at the Finance Committee Meeting held Thursday, March 3<sup>rd</sup>, 2011.**

Currently, approximately 45% of the Canadian population has access to fluoridated public water supplies. The main arguments for and against fluoridation have changed very little over the years, with supporters (including the World Health Organization and Health Canada) citing evidence that shows fluoridation as safe and effective means of cavity prevention, while detractors cite high costs and potential health risks.

The decision to fluoridate water supplies is made by local governments, with the federal, provincial and territorial governments setting the guidelines through the Fluoridation Act of 1990 (Appendix A). Even though the decision to fluoridate water supplies falls upon the municipalities, there are significant trends among the provinces regarding community water fluoridation. Ontario, Alberta and Manitoba have the highest percentage of community water fluoridation with rates of 76%, 75% and 70% respectively while British Columbia and the Territories have little or no municipalities with fluoridated water systems.

While the first connections between fluoride and dental health were made in the United States, the cause was taken up in Canada by Dr. W.L. Hutton, medical officer of health for the Brant County Health Unit. In 1945, Brantford, Ontario, became the first Canadian city to add fluoride to its water. Brantford was paired with neighbouring Sarnia in an 11-year case study of the effects of water fluoridation. Over this period, Brantford children had a 63% reduction in the severity of caries and a 35% reduction in the prevalence of caries. These initial studies opened the debate and cities across Canada began to make decisions on one side or the other.

### **CGS Current Situation**

Sudbury has been fluoridating its public water system since 1952. Currently all water provided to Sudbury

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residents is fluoridated including that processed through the Vermillion treatment plant (operated by Vale). Approximately 17% of Greater Sudbury residents are not serviced by municipal water systems.

Greater Sudbury operates 22 water supply wells and 2 water treatment plants, (Wanapitei and David St.), which fluoridate the water they process. These systems feed fluoride in the range of 0.5 -0.8 mg/L, which is within the legislated limits, and usually feed rates are maintained at the low end of this spectrum. The system is monitored by certified water treatment operators 24 hours a day from the control room at the Wanapitei plant. The operators use SCADA (Supervisory Control and Data Acquisition) software, which transmits data from continuous monitor instruments at remote facilities and provide alarms at high and low levels, as well as automatic and manual shut offs in case of overfeed.

## **Discussion**

### **Arguments for Maintaining the Fluoridation of Public Water Supplies**

Fluoride has long been supported by a large number of Health organizations citing its public health benefits. The Center for Disease Control and Prevention (CDC) calls it "one of the 10 great public health achievements of the 20th century" (Full list of Achievements found in Appendix B). The World Health Organization (WHO) considers access to this substance to be a part of the basic human right to life. Evidence has shown up to a 60% reduction rate in dental caries in communities that provide fluoride in water (Surgeon General Report on Oral Health, 2010). Most recently, Health Canada released a report on June 20<sup>th</sup>, 2011 outlining a 3 year study conducted on the effect of fluoridation of water and has released a revised statement of support as a result of this study. (Statement can be found in Appendix C)

Beyond these benefits, proponents also make claims that fluoridation of public water supplies is the most cost effective delivery method and would have to be replaced with other delivery methods to maintain current dental health rates. These methods, which in some places include public education campaigns, and in others include a dental hygienist program in schools, are costly and significantly less effective (CDC, Community Guide: Oral health: Cavity Prevention, 2011). They go on to point out that reactive costs of dental treatments can be high when dental health deteriorates, especially in marginalized populations.

### **Arguments against Maintaining Fluoridation System**

There are costs and risks of adding fluoride to a water system. There is the operating cost of actually adding the chemical to the water system, but there are also capital costs to provide & maintain the infrastructure needed to carry out the process. Fluoride is corrosive in concentrated forms and is hard on pipelines as well as on in-plant infrastructure such as electrical components. Fluoride supply facilities normally requires a separate room with special features such as spill containment and enhanced ventilation systems to vent fumes and isolate the product from other equipment. At many of CGS' older water supply facilities such rooms do not exist and the exposed equipment and infrastructure is at risk of premature deterioration. Full financial implications are discussed below.

Fluoride also presents an occupational health risk to the employees who work at the water supply facilities (Material Safety Data Sheet, WHIMIS # 00060388, 2009). Despite increased ventilation, employees must be provided with elaborate personal protective apparel and are tested for overexposure regularly. While these measures do reduce the risk of occupational injury, and no incidences have been reported to date at CGS, these preventative measures do not totally eliminate the risk of injury and do come at a cost.

There is also a risk of equipment malfunction affecting the feed rates and consequent dosage of the product into the water supply. There have been overfeed incidents in the United States where the equipment has malfunctioned and added dangerous amounts of the chemical into the water supply in a short amount of time. In several of those incidents, significant numbers of customers were impacted with many injuries reported, including skeletal fluorosis which is the weakening of the bones (World Health Organization, 2011).

Waste of the chemical is also a concern, as most water treated is not consumed by citizens. Much of the fluoride that is going into the water ends up in the environment after going down the drain, into toilets, or on the lawn. The full environmental impact of this is not yet known however fluoride levels in the great lakes

water generally increase lower in the chain of lakes which is thought to be from the influence of municipal wastewater effluents.

## **Public Debate**

Municipalities that have opened the fluoride debate have seen great public response. It is important to understand the public arguments that are often made to appreciate the potential for public response. The Fluoridation debate often comes down to an argument of “greater good” vs “personal choice”. Many of the public debates in other municipalities have fallen along these lines. The majority have included presentation by experts on the subject to the community and/or to Council.

Those that argue for the “greater good” focus on marginalized communities. They rely on the positions of the dental organizations, and public health organizations. They believe that it is the responsibility of the municipal government to care for the health of those who cannot access the fluoride through other means.

Those who argue on the other side of the argument make claims for personal choice; that they should have access to public drinking water without fluoridation. They claim that there are alternate means for the delivery of fluoride that should be explored so that everyone can have the choice whether to give themselves and their children fluoride regularly.

## **Other Municipalities / Other Delivery Methods of Fluoridation**

Since 2008, the fluoridation debate in Ontario has been very active. At least 4 communities have recently made decisions on the issues. Municipal councils in 2 of those 4, the City of Hamilton, and the Region of Peel, voted to continue fluoridation. While the other half voted to defluoridate their water system, the Region of Waterloo by referendum in 2010 and Niagara by regional council vote in 2009. The City of Thunder Bay, which has never been fluoridated, decided, by Council vote, to maintain status quo in 2009. The City of London and the Region of Halton, which are both fluoridated are currently reviewing the issue. Currently almost 50% of Canadians and approximately 75% of Ontarians are serviced by a fluoridated public water system. A chart outlining the OMBI and Northern comparative Municipalities’ current policy on fluoridation can be found in Appendix D.

Health Units across the province are mandated to maintain the Public Health Standards for dental care. These standards include screening programs for elementary school children and providing preventative dental care, including fluoride treatment, to at-risk children who are from low income families, and who have no other dental insurance provider. This program is funded 75% by the Province and 25% by Municipalities.

Some Health Units, especially those who are associated with Regional Governments, have received extra funding from their Municipality to provide care on top of this standard level. The Region of Waterloo, for example, offers services beyond preventative care including free basic dental health care to marginalized children until 17 years of age, and emergency dental health care to all low income residents, including adults, through the health unit.

The Health Unit in Greater Sudbury maintains the Public Health Standard but does not currently have additional funding to go beyond these services. They offer no dental care to adults or to children who are insured by another provider including Ontario Works and frequently refer these clients to the College clinics mentioned below.

Children in the Ontario Works system can access dental care including fluoride treatment through the Mandatory Basic Dental Plan. To be eligible for treatment, two or more of the following criteria must be met:

- 1) Water Fluoride content is less than .3 ppm

- 2) Past history of smooth surface decay in the last three years
- 3) Present smooth surface decay
- 4) Evidence of long standing poor oral hygiene
- 5) A severe medically compromised patient
- 6) Diagnosed with Xerostomia – a condition commonly known as dry mouth often a side effect of radiation or other medications.

Ontario Works does not provide any coverage for fluoride treatments for adults. In 2012, the cost sharing formula will be 82.8% funded by the Province, and 18.2% funded by the city for this program. This cost has been continuously uploading to the province in recent years. If fluoridation were to be discontinued, there is no evidence that any changes would be made to these criteria. It is worth noting that the natural fluoride levels across Greater Sudbury are generally below the .3ppm criterion.

ODSP does provide basic dental care to children and adults in their system; however this does not include fluoride treatments.

Cambrian College and College Boreal both provide dental care, including fluoride treatments, through their dental clinics. Anyone can register for the service for \$25 per person/year or \$35 for a family of two or more/year. This cost is not covered by any insurance.

### **Fluoridation Act**

The Provincial government passed the Fluoridation Act in 1990. It outlines the guidelines for adding and removing fluoride from public water supply systems, and the regulations for how it should be added. It provides provisions for the question of whether to add it, or remove it, to citizens. It states that if a petition of 10% of the population is submitted to a clerk's office than the Council shall, before or at the next municipal election submit the question to the electors. The full Act can be found attached in Appendix A.

### **Financial Implications**

There are significant financial implications for both the operating and capital budgets from adding fluoride to the water supply.

On the operational side, continuing to feed fluoride at CGS facilities costs in the range of \$95,000 to \$115,000 annually. These costs emanate from the purchase of the chemical itself (\$65,000), as well as operational labour (\$2000), and maintenance labour (\$15,000) & parts / material (\$22,000) costs, as well as medical surveillance costs for treatment staff (\$600). Costs do vary somewhat from year to year as they depend somewhat on variable costs such as water production rates and maintenance requirements.

Several of CGS' water supply facilities do not meet current standards for fluoride rooms and upgrades will be required to mitigate the various risks which range including the risk of premature deterioration of exposed equipment. Although most existing facilities use available mechanical ventilation systems to mitigate the effects of the fumes, capital upgrades to supply facilities to provide fluoride isolation rooms in accordance with the various standards established for such facilities (ie Ministry of the Environment design guidelines for drinking water Systems, 2008; AWWA Manual for Water Supply Practices M4 – Water Fluoridation Principles & Practices; Ontario Health & Safety Act & Regulations for Industrial Establishments; MSDS requirements) and control the risks more effectively are estimated to be in the order of \$2.2 million. A Well Facility Assessment Study is currently underway which will provide a more detailed preliminary costing for the required upgrades. The specific projects and funds for the fluoride room separation would then be requested in the 2013, 2014 or 2015 Capital Budget submissions.

Should fluoride feed be discontinued, it is estimated that capital costs in the order of \$85,000 to \$150,000 would be required to remove and properly dispose of the existing tanks, piping, feed equipment etc. as much of that equipment would not be suitable for reuse in other applications because of the properties of the fluoride chemical.

### **Considerations for Future Action Concerning Fluoridation**

Should Council wish to explore this matter further, the following are possible courses of action that could be considered:

- 1) Maintain the status quo - fluoridation of all CGS systems.
- 2) Raise the question of whether to discontinue fluoridation – this could be done 2 ways:
  - a) **Pose the question to citizen through a plebiscite.**

To do this, the Fluoride Act 1990 states: “The council may, before passing a by-law under subsection (1), submit to the electors of the municipality a question to the following effect:

Are you in favour of the discontinuance of the fluoridation of the public water supply of this municipality?

This must be a mandatory plebiscite; that is, the council will be bound to the results of the plebiscite. “Where the question receives the affirmative vote of a majority of the electors who vote on the question, the council shall pass the by-law, or where the question does not receive the affirmative vote of a majority of the electors who vote on the question the council shall not pass the by-law”.

The council may submit a question under this Act to the electors at anytime however to do so outside of an organized election would be very costly. Also, per the Act, Council must submit the question to the electors before or at the next municipal election if a petition is presented, signed by at least 10% of the electors in the municipality, requesting them to do so. This process would be consistent with the Public Participation Policy (Full policy can be found in Appendix E).

The Public Participation Policy relies on the International Association for Public Participation’s core values:

- The public should have a say in decision about actions that affect their lives.
- Public participation includes the promise that the public’s contributions will influence the decisions
- The public participation process communicates the interests and meets the process needs of participants.
- The public participation process actively seeks out and facilitates the involvement of those potentially affected.
- The public participation process involves participants in defining how they participate
- The public participation process provides participants with the information they need to participate in a meaningful way.

The process outlined above would allow Council to make a decision while in the *empower* level of public

impact on the public participation spectrum (see page 3 of Public Participation Policy). Under the “Promises to the Public” section of the policy Council has stated that under this level of public participation they will implement the decision made by citizens’ majority.

**b) Put the question to a Council vote**

To raise the question in Council for a vote generally involves the following procedure.

A panel of experts on the matter would be invited to present directly to Council for a fuller understanding of the issue beyond the information provided in this report. This information would also be presented in one or multiple open houses to the public to ensure citizens understand the issue. A public input meeting would be held in Council Chambers to give citizens an opportunity to have their opinions heard. This input model would be supported by receipt of input in other formats including on the CGS website and social media sites. Once a full report on public opinion is present to Council, an informed vote could be conducted. This process would be consistent with the CGS Public Participation Policy (The full policy can be found in Appendix D).

The process outlined above would allow Council to make a decision while in the *consult* level of public impact on the public participation spectrum (see page 3 of Public Participation Policy). This level promises to keep citizens informed, listen and acknowledge citizen’s concerns, and provide feedback on how public input will influence this decision.



R.S.O. 1990, CHAPTER F.22

**Consolidation Period:** From December 15, 2009 to the [e-Laws currency date](#).

Last amendment: 2009, c. 33, Sched. 18, s. 9.

## **Definitions**

**1.** In this Act,

“Chief Electoral Officer” means the Chief Electoral Officer appointed under the *Election Act*; (“directeur général des élections”)

“electors” means persons entitled to vote at a municipal election; (“électeurs”)

“fluoridation system” means a system comprising equipment and materials for the addition of a chemical compound to release fluoride ions into a public water supply; (“système de fluoration”)

“local municipality” means a single-tier municipality and a lower-tier municipality, excluding a lower-tier municipality that forms part of a regional municipality for municipal purposes. (“municipalité locale”) R.S.O. 1990, c. F.22, s. 1; 2001, c. 25, s. 476 (1, 2); 2007, c. 15, s. 40 (1).

## **Establishment of system**

**2. (1)** Where a local municipality or a local board thereof owns or operates a waterworks system, the council of the municipality may by by-law establish, maintain and operate, or require the local board to establish, maintain and operate, a fluoridation system in connection with the waterworks system. R.S.O. 1990, c. F.22, s. 2 (1).

## **Vote as to establishment of system**

**(2)** The council may, before passing a by-law under subsection (1), submit to the electors of the municipality a question to the following effect:

Are you in favour of the fluoridation of the public water supply of this municipality?

and, where the question receives the affirmative vote of a majority of the electors who vote on the question, the council shall pass the by-law, or, where the question does not receive the affirmative vote of a majority of the electors who vote on the question, the council shall not pass the by-law until the question has again been submitted to the electors of the municipality and it

has received the affirmative vote of a majority of the electors who vote on it. R.S.O. 1990, c. F.22, s. 2 (2).

### **Fluoridation systems**

2.1 (1) The council of a regional municipality may by by-law establish, maintain and operate or discontinue fluoridation systems. 2001, c. 25, s. 476 (3).

### **Continuation**

(2) Although a by-law has not been passed under subsection (1), the council of a regional municipality may continue to fluoridate the water supply of those areas in the area of jurisdiction of the regional municipality to which it was supplying fluoridated water immediately before June 29, 1987. 2001, c. 25, s. 476 (3).

### **Discontinuance of system**

3. (1) Where a local municipality or a local board thereof has a fluoridation system in connection with its waterworks system, the council of the municipality may by by-law discontinue, or require the local board to discontinue, the fluoridation system. R.S.O. 1990, c. F.22, s. 3 (1).

### **Vote as to discontinuance of system**

(2) The council may before passing a by-law under subsection (1) submit to the electors of the municipality a question to the following effect:

Are you in favour of the discontinuance of the fluoridation of the public water supply of this municipality?

and, where the question receives the affirmative vote of a majority of the electors who vote on the question, the council shall pass the by-law, or, where the question does not receive the affirmative vote of a majority of the electors who vote on the question, the council shall not pass the by-law until the question has again been submitted to the electors of the municipality and it has received the affirmative vote of a majority of the electors who vote on it. R.S.O. 1990, c. F.22, s. 3 (2).

### **When question may be submitted**

4. (1) The council may submit a question under this Act to the electors at any time. R.S.O. 1990, c. F.22, s. 4 (1).

### **Petition**

(2) Upon the presentation of a petition requesting that a question under this Act be submitted to the electors, signed by at least 10 per cent of the electors in the municipality, the council shall



before or at the next municipal election submit the question to the electors, but, if a petition is presented in the month of November or December in any year, it shall be deemed to be presented in the month of February next following. R.S.O. 1990, c. F.22, s. 4 (2).

### **Idem**

(3) A petition mentioned in subsection (2) shall be deemed to be presented when it is lodged with the clerk of the municipality, and the sufficiency of the petition shall be determined by the clerk and his or her certificate as to its sufficiency is conclusive for all purposes. R.S.O. 1990, c. F.22, s. 4 (3).

### **Joint waterworks, establishment of system**

5. (1) Where a waterworks system is operated by or for two or more local municipalities, the body operating the waterworks system shall establish, maintain and operate a fluoridation system in connection therewith,

(a) where there are two such municipalities, only after the councils of both such municipalities have passed a by-law requiring the fluoridation of the water supply of their respective municipalities; or

(b) where there are more than two such municipalities, only after the councils of a majority of such municipalities have passed a by-law requiring the fluoridation of the water supply of their respective municipalities. R.S.O. 1990, c. F.22, s. 5 (1).

### **Idem, discontinuance**

(2) A fluoridation system established under subsection (1) shall be discontinued where the councils of both municipalities or of a majority of the municipalities, as the case may be, have passed by-laws requiring the discontinuance of the fluoridation system in their respective municipalities. R.S.O. 1990, c. F.22, s. 5 (2).

### **Vote on question upon petition**

(3) Where petitions signed by at least 10 per cent of the electors in each such municipality, where there are two such municipalities, or in each of a majority of such municipalities, where there are more than two, are presented to the Chief Electoral Officer requesting that a question under this Act be submitted in both or all of such municipalities, as the case may be, each of the municipalities by or for which the waterworks system is operated shall submit the question to its electors on a date to be fixed by the Chief Electoral Officer, and the clerk of each such municipality shall certify the result of the vote in the municipality to the Chief Electoral Officer. R.S.O. 1990, c. F.22, s. 5 (3); 2007, c. 15, s. 40 (1).

### **Result of vote, establishment**

[\(4\)](#) If a majority of the votes cast in both or all of such municipalities, as the case may be, on the question set out in section 2 is in the affirmative, each such municipality shall pass a by-law under subsection (1), or, if a majority of the votes cast in both or all of such municipalities, as the case may be, is in the negative, no by-law under subsection (1) shall be passed until the question has again been submitted to the electors and has received the affirmative vote of a majority of the electors who vote on it. R.S.O. 1990, c. F.22, s. 5 (4).

### **Idem, discontinuance**

[\(5\)](#) If a majority of the votes cast in both or all of such municipalities, as the case may be, on the question set out in section 3 is in the affirmative, the council of each such municipality shall pass a by-law requiring the discontinuance of the fluoridation system in its municipality. R.S.O. 1990, c. F.22, s. 5 (5).

### **Public utility company**

[6. \(1\)](#) The council of any local municipality that obtains its water supply under an agreement with a public utility company may pass a by-law requiring the fluoridation of the water supply, and thereupon the company shall establish, maintain and operate a fluoridation system in connection with the water supply of the municipality on such terms and conditions as the council of the municipality and the company agree upon or, failing agreement, as are determined by arbitration under the *Arbitration Act, 1991*. R.S.O. 1990, c. F.22, s. 6 (1); 2009, c. 33, Sched. 18, s. 9 (1).

### **Idem, discontinuance**

[\(2\)](#) Any fluoridation system established under subsection (1) shall be discontinued where the council of the municipality has passed a by-law requiring its discontinuance, and the terms and conditions of the discontinuance may be agreed upon by the council of the municipality and the company or, failing agreement, may be determined by arbitration under the *Arbitration Act, 1991*. R.S.O. 1990, c. F.22, s. 6 (2); 2009, c. 33, Sched. 18, s. 9 (2).

[7.](#) Repealed: 1997, c. 26, Sched.

### **Systems existing on March 29, 1961**

[8.](#) Every fluoridation system that was being operated on the 29th day of March, 1961 under the authority of *The Public Health Act*, being chapter 321 of the Revised Statutes of Ontario, 1960, shall be deemed to have been established and to be maintained and operated under the authority of this Act. R.S.O. 1990, c. F.22, s. 8.

### **Regulations**

[9. \(1\)](#) The Lieutenant Governor in Council may make regulations,

(a) governing and regulating the equipment and processes that may be used in fluoridation systems;

(b) prescribing the nature and amount of the chemical compounds that may be used in fluoridation systems;

(c) respecting any matter necessary or advisable to carry out effectively the intent and purpose of this Act. R.S.O. 1990, c. F.22, s. 9 (1).

**Idem**

[\(2\)](#) Any such regulation may be general or particular in its application. R.S.O. 1990, c. F.22, s. 9 (2).

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**Appendix B** - List of top 10 Great Public Health Achievements

Source: Centre for Disease Control and Prevention 2009

- Vaccinations
- Motor-vehicle safety
- Safer workplaces
- Control of infectious diseases
- Decline in deaths from coronary heart disease and stroke
- Safer and healthier foods
- Healthier mothers and babies
- Family planning
- Fluoridation of drinking water
- Recognition of tobacco use as a health hazard

<http://www.cdc.gov/mmwr/preview/mmwrhtml/00056796.htm>

# Health Canada Statement on Fluoride in Drinking Water

2011-82

June 21, 2011 (revised June 23, 2011)

For immediate release

**OTTAWA** - Health Canada understands that Canadians are concerned about the safety of their drinking water. Drinking water in Canada is among the safest in the world.

Health Canada collaborates with the provinces and territories through the Federal-Provincial-Territorial Committee on Drinking Water to develop the *Guidelines for Canadian Drinking Water Quality*. The guidelines are continuously under review, to take into consideration new pertinent scientific knowledge. An updated guideline technical document on fluoride was published today, which reaffirms the maximum acceptable concentration for fluoride in drinking water. Currently available peer-reviewed scientific studies continue to indicate that there are no adverse health effects from exposure to fluoride in drinking water at or below the maximum acceptable concentration.

The technical document also recommends an updated, slightly lowered optimal fluoride concentration for communities choosing to fluoridate their water supply. While the fluoridation of drinking water supplies is a decision made by municipalities, or the appropriate provincial/territorial authority, Health Canada continues to strongly support water fluoridation as a safe, effective and cost effective public health measure to help prevent dental cavities. The safety and efficacy of water fluoridation has been frequently studied and continues to be supported by current science, and the beneficial effects of fluoride in the prevention of dental cavities have been well documented in scientific literature.

These benefits are recognized and endorsed by Health Canada and by more than 90 national and international professional health organizations including the Canadian Dental Association, the American Dental Association, the Canadian Public Health Association, the Canadian Pediatric Society, the Canadian Association of Public Health Dentistry, the American Public Health Association, the American Centers for Disease Control and Prevention (CDC), the Australian National Health and Medical Research Council, the World Health Organization, and the World Dental Federation which represents one million dentists worldwide.

Source: [http://www.hc-sc.gc.ca/ahc-asc/media/ptr-ati/2011/2011\\_82-eng.php](http://www.hc-sc.gc.ca/ahc-asc/media/ptr-ati/2011/2011_82-eng.php)

**Appendix D - OMBI Comparators**

<b>Municipality</b>	<b>Has it been debated?</b>	<b>Fluorinated</b>	<b>Decision</b>
Region of Halton	Under Review	Yes	
City of Hamilton	Yes	Yes	Council voted to maintain in 2010
City of London	Under Review	Yes	
City of Ottawa	No	Yes	
Region of Peel	Yes	Yes	Council voted to maintain 2011
City of Greater Sudbury	No	Yes	
City of Toronto	No	Yes	
Region of York	No	Split	
City of Windsor	No	Yes	
Region of Durham	No	Split	
Region of Waterloo	Yes	No	Defeated by referendum in 2010
District of Muskoka	No	Yes	
Region of Niagara	Yes	No	Discontinued by Council vote 2009

**Northern Comparators**

<b>Municipality</b>	<b>Has it been debated?</b>	<b>Fluorinated</b>	<b>Decision</b>
City of Thunder Bay	Yes	No	Maintained Status Quo in 2009
City of Timmins	No	No	
City of Sault St Marie	Yes	No	Maintained Status Quo in 2007
City of North Bay	No	Yes	

## Public Participation Spectrum

Different issues require different levels of public engagement. The following Public Participation Spectrum can be used as a guideline for action. The Public Participation Spectrum is a tool to assist with the planning of specific civic engagement activities. The pillars of this spectrum are; **inform, consult, involve, collaborate, and empower**, providing a mechanism to clarify complex issues, and to ensure that decision-making processes are transparent.

## IAP2 Public Participation Spectrum

Developed by the International Association for Public Participation

INCREASING LEVEL OF PUBLIC IMPACT				
INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
<b>Public Participation Goal:</b>	<b>Public Participation Goal:</b>	<b>Public Participation Goal:</b>	<b>Public Participation Goal:</b>	<b>Public Participation Goal:</b>
To provide the public with balanced and objective information to assist them in understanding the problems, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
<b>Promise to The Public:</b>	<b>Promise to The Public:</b>	<b>Promise to The Public:</b>	<b>Promise to The Public:</b>	<b>Promise to The Public:</b>
We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
<b>Example Techniques to Consider:</b>	<b>Example Techniques to Consider:</b>	<b>Example Techniques to Consider:</b>	<b>Example Techniques to Consider:</b>	<b>Example Techniques to Consider:</b>
<ul style="list-style-type: none"> <li>• Fact sheets</li> <li>• Web sites</li> <li>• Open houses</li> </ul>	<ul style="list-style-type: none"> <li>• Public comment</li> <li>• Focus groups</li> <li>• Surveys</li> <li>• Public meetings</li> </ul>	<ul style="list-style-type: none"> <li>• Workshops</li> <li>• Deliberate polling</li> </ul>	<ul style="list-style-type: none"> <li>• Citizen Advisory Committees</li> <li>• Consensus-building</li> </ul>	<ul style="list-style-type: none"> <li>• Citizen juries</li> <li>• Ballots</li> <li>• Delegated decisions</li> </ul>