



The Corporation of the Town of Parry Sound

Council Report and Recommendation

Open or Closed Agenda:

Open

Section 239 (2), Municipal Act, Subsection:

n/a

Council Meeting Date:

November 3, 2015

Subject:

Referendum (Plebiscite) - Discontinuance of Fluoridation of Town's Drinking Water

TOMRMS File Number:

E05 - Fluoride

Spokesperson(s) Name and Title:

Peter Brown, Director of Public Works

Jackie Boggs, Clerk

Department:

Public Works

Administration

Report Recommendation

By-Law:

Resolution:

That Council for the Town of Parry Sound acknowledge receipt of the Report and Recommendation (R&R) regarding a possible petition by 10% or more of Parry Sound and McDougall's electorate to remove fluoride from the drinking water system, attached as Schedule "A"; and

That a copy of this R&R be provided to the Council of the Municipality of McDougall for their information.

Direction (For Direct Staff Follow-Up):

Direction (For Open Council Resolution):

Direction (For Open Council By-law):

Purpose:

At the Mayor's request, to provide information regarding a referendum (plebiscite) on the issue of fluoridation of the Town's drinking water.

Identify Relationship to Strategic Priorities:

Core Service - Yes

Key Performance Objectives (KPOs) - No

New Service, Project or Program - No

Does This Item Relate to Council's Strategic Priorities? - Quality of Life

Background/Report:

The Town of Parry Sound has been adding fluoride to the drinking water since the 1960's. The current method is by injecting hydrofluosilicic acid into the treated water as it is leaving the plant. Plant staff abide by the current Ministry of Health protocol of fluoridation, in that the range required is 0.60ppm to 0.80ppm. The maximum acceptable concentration is 1.5ppm. Tests are continually performed and monitored on the system to ensure the proper amount is added. If there is a deviation from these regulated values for various reasons (power failure, equipment malfunction, etc.), the Ministry of Health and Ministry of Environment are notified immediately.

The cost to fluoridate the water for the material alone is approximately \$4,500 to \$5,000 per year and the chemical is delivered to the water plant in barrel form.

As with any plant, there are ongoing maintenance issues, such as pump replacements, piping to be repaired or replaced. The chemical in its raw form delivered to the plant is very acidic and when exposed to the air will etch glass, paint and pump equipment over time.

All water plants require ongoing repairs and maintenance which include the replacement of fluoride related equipment. As time progresses changes and modifications must be considered to ensure the health and safety of the staff who are subjected to the chemical in its raw form. Staff have access to Personal Protective Equipment at all times to handle this chemical as well as others. Staff are trained to ensure all proper safety procedures are adhered to.

At the June 3rd, 2015 Council meeting Council defeated the staff recommendation to cease adding fluoride to the Town of Parry Sound's drinking water. The recommendation came forward from the Director of Public Works due to a number of factors including staff safety requiring an upgrade of the current method of receiving and delivering the fluoride and some complaints received from the public regarding the addition of fluoride to the Town's drinking water. Three months later at the September 1st, 2015 Council meeting Council approved the upgrades to the fluoride system for a

total of \$250,000. The firm with the winning bid was contacted the next day to authorize them to proceed.

Deputations:

Council has heard deputations from Dr. Jim Chirico, the Medical Officer of Health for the North Bay Parry Sound District Health Unit (June 2 and October 6, 2015), a number of local dentists and citizens regarding the benefits of fluoride in the drinking water. Dr. Chirico's presentations are attached to this report and are also located on the Town's website under Inside Town Hall, in the Council Calendar under those Council meeting dates under Minutes/Presentations or check the [North Bay Parry Sound District Health Unit Website](#) for more information.

Council has also heard deputations from a group called Parry Sounders for Progressive Water Management, (September 15, October 6, October 20, 2015), Dr. Harvey Limeback, Professor Emeritus and Former Head of Preventive Dentistry, University of Toronto and a number of residents and non-residents of Parry Sound regarding the alleged detrimental effects of water fluoridation. Where provided, those presentations are located on the Town's website under Inside Town Hall, in the Council Calendar under those Council meeting dates under Minutes/Presentations.

Referendum (Plebiscite):

Although Council has already made the decision to upgrade the fluoride system in the Tony Agnello Water Treatment plant as being in the best interest of the public they serve, the question of holding a referendum (or plebiscite) to let the residents of Parry Sound decide on this issue rose a number of times during deputations. As a result, staff were asked to look into what would be involved in holding a referendum to discontinue adding fluoride to the Town's drinking water.

Fluoridation Act, R.S.O. 1990, Chapter F.22:

The removal of fluoride from a municipal water system is governed by the Fluoridation Act, R.S.O. 1990 (the "Fluoridation Act") (Attachment #1). One section deals with a single municipality and another section deals with a joint waterworks operated by or for two or more local municipalities. The Town of Parry Sound sells water to the Municipality of McDougall through a Water Works Transmission Agreement (See Attachment #2). *"In a system that serves two municipalities, Section 5(2) of the Fluoridation Act provides that fluoridation shall be discontinued if both municipalities have passed a by-law expressing that intention. It does not provide for one municipality to unilaterally decide the issue. In fact, based on the majority rule intension (expressed in the remainder of that subsection), it would seem that absent unanimity in a "two municipality" system, fluoridation could not be discontinued."* (Edward Veldboom, Russell, Christie, LLP.) In other words, the Act states that in order for a fluoridation system to be discontinued, both municipalities would have to pass a by-law to that effect. This statement is not withstanding Item 6.2 of the Water Transmission Agreement between the Town of Parry Sound and the Municipality of McDougall (Attachment #2)

Petition

The Fluoridation Act, Section 5 (3), also stipulates that because this is a Joint Waterworks system; *"Where petitions signed by at least 10% of the electors in each municipality, where there are two such municipalities . . . are presented to the Chief Electoral Officer requesting that a question under this Act be submitted in both . . . municipalities, each of the municipalities 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 in each such municipality shall certify the result of the vote in the municipality to the Chief Electoral Officer, R.S.O. 1990, cF.22, s 5(3); 2007, c 15, s.40(1).* So should petitions be gathered for both municipalities, and this would be required as there are two municipalities involved, they would both be submitted to the

Chief Electoral Officer of Ontario who would then provide the date and instructions on how to proceed to both municipalities. According to the Ministry of Municipal Affairs and Housing the process would be conducted as a "by-election" process for the question. The costs have been outlined below under Costs/Financial Impact (Projected Costs for a Referendum Outside an Election at the call of the Chief Electoral Officer of Ontario).

What happens if one petition is successful in obtaining the required number of signatures and the other is not? Or if both petitions do result in a vote but one is affirmative and one is negative? According to Ed Veldboom of Russell, Christie, LLP, *"based on a plain reading of the {Fluoridation} Act, unless there are two affirmative votes, it would appear that fluoridation could not be discontinued and the matter could only be revisited through a future vote of the electors. The reason for the latter is that the Act provides that the municipality where the vote is negative, that Council is precluded from passing a by-law authorizing discontinuance until authorized by a future vote."*

Conclusions:

Parry Sound Council defeated the recommendation to remove fluoride from the Town's drinking water (June 2/15) and have authorized the upgrades to the water treatment plant (September 1/15). At this point it is recommended that Council wait to see if petitions materialize. We would be notified by the Chief Electoral Officer, as would McDougall, should petitions be filed with him.

Advantages and/or Disadvantages of Recommendation:

In the best interest of the residents of Parry Sound.

Maintains the status quo.

Alternatives:

None, based on Council's current position to continue water fluoridation.

Cost/Financial Impact:

Projected Costs for a Referendum Outside an Election (at the call of the Chief Electoral Officer of Ontario):

Advertising	\$ 3,000
MPAC Voter Notification File	0
Municipal Voter View Program	0 (Currently have year round access)
Intelivote eServices	\$13,200 + tax (includes creation, production, supplies for producing and mailing voter instruction letter, postage, internet and telephone voting set up)
Public Educational Materials:	\$ 2,500
Staff Time:	List Management, education campaign including open house(s), posting and development of materials, running the question election, staff training. Staff time to run an election has never been specifically calculated. Suffice to say this would be a time consuming procedure in addition to staff's core work.

Included in Current Budget:

No.

Attachments:

Attachment #1 - Fluoridation Act, R.S.O. 1990, Chapter F.22

Attachment #2 - Waterworks Transmission Agreement with the Municipality of McDougall

Attachment #3 - Dr. Jim Chirico's Report to Council - June 2, 2015 and October 6, 2015

(Accessible format available upon request)

CAO's Comments

Recommends Council Approval:

Yes

Recommends Council consider staff recommendation with the following comments:

This is an information report only to provide clarity on this rather complicated matter in response to public queries on the matter of referendums / plebiscites related to fluoridation of the Town's drinking water.

Staff do not purport to be experts on public health and we don't advise Council on the impacts of approved treatment processes on human health.

Français

Fluoridation Act

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).

Français

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The Water Transmission Agreement

This Water Transmission Agreement made this 23 day of August, 2006.

BETWEEN:

The Town of Parry Sound

Hereinafter referred to as
"Parry Sound"

-and

The Municipality of McDougall

Hereinafter referred to as
"McDougall"

1.0 Recitals

WHEREAS Parry Sound is in a position to sell drinking water;

AND WHEREAS McDougall wishes to purchase drinking water;

AND WHEREAS the Parties wish to enter into a long term agreement which provides for predictable stability relating to quality, supply and price for both Parties;

AND WHEREAS the Parties have executed a Memorandum of Understanding dated May 3, 2005, attached as Schedule "A" hereto and now wish to enter into a formal contract to reflect the terms of their understanding;

AND WHEREAS the 3rd Draft Proposed Design Values attached as Schedule "B" hereto and forming a part of this Agreement are being referred to as "Draft" and "Proposed" only because that is the document's commonly known title. The Parties accept that the design values noted in Schedule "B" are the values that shall bind the parties;

NOW THEREFORE in consideration of the mutual covenants contained herein, and the payment of TEN (\$10.00) DOLLARS, receipt of which is hereby confirmed, the Parties hereto agree as follows:

1.01 The above recitals are true.

2.0 Memorandum of Understanding

~~2.1 Attached as Schedule A to this Agreement is the said Memorandum of Understanding dated May 3, 2005. The Parties agree that the Memorandum of Understanding is not binding upon them, but may be referred to in the event the Memorandum is of assistance in interpreting any provision of this Agreement.~~

3.0 Term of this Contract

3.1 The Parties agree that the term of this Agreement will commence at the earliest of December 31, 2006, or the start up of the operation of the water transmission system described herein.

3.2 The Town and McDougall are both interested in a long lasting relationship with predictable stability for both sides. Recognizing that such an Agreement is to be in place for a long term to make it viable for both sides, the Agreement is continuous with an obligation to review the terms in 20 years. Further, recognizing that there is a mutual obligation that in the event of the treatment plant capacity being met, each party will financially contribute to the proportionate expansion costs based on benefit of use of the expansion but in no event shall the Agreement be terminated unless mutually agreed to by both parties. In the event there is a dispute at renewal which prevents the parties agreeing to renewal, the matters shall be referred to the dispute resolution process herein provided for. As of the date of this Agreement, the proportionate share of McDougall based on the benefit of use is 12.375%.

4.0 Provision of Drinking Water

4.1 Parry Sound shall provide to McDougall a maximum of 1,908 cubic metres per day.

5.0 Cost

5.1 McDougall shall pay to Parry Sound \$0.69/cubic meter of water supplied for the duration of the first year of this contract (i.e. the cost of water)

5.2 The cost of water shall be adjusted annually by the percentage increase in the operating water user rate to users in Parry Sound.

5.3 The water is to be metered on the downstream side of Parry Sound's proposed re-chlorination facilities. This shall also serve as the point of purchase of the water. This facility will be located, as close as practical, to the municipal boundary of McDougall to the Parry Sound elevated reservoir.

5.4 McDougall shall have the right to enter for its employees and agents in the presence of authorized Parry Sound employees to have reasonable access to the metering facilities for all purposes for the duration of this Agreement. Similarly, Parry Sound shall have the right to enter the McDougall facilities that are located on property owned by Parry Sound in the presence of authorized McDougall employees for all purposes for the duration of this Agreement.

5.5 The Parties acknowledge that government mandated changes may be imposed on Parry Sound from time to time which may result in capital cost increases as the Party responsible for the treatment and supply of drinking water to McDougall. In the event such changes result in an increase (or decrease) to the cost of drinking water sales by Parry Sound to McDougall, the cost of the drinking water sales will be adjusted (at the time of the implementation of such government mandated provisions) by the appropriate proportionate share. As of the date of this Agreement, McDougall's proportionate share is as follows:

1. Treatment plant 12.375% to capacity;
2. Watermains 31.8%;
3. Booster pumping station 31.8%;
4. Elevated storage tank 36.8%.

5.6 The Parties acknowledge that Parry Sound will not be charging nor will McDougall be paying G.S.T. on the costs noted in Paragraph 4.1 above. The Parties are relying upon the G.S.T. Ruling of the G.S.T. Rulings Center issued the 27th day of January, 2006 and attached hereto as Schedule "C".

6.0 Rights of Parry Sound

6.1 Parry Sound has the right, expressly accepted by McDougall, to sell additional excess drinking water capacity to any and all 3rd Parties at the sole discretion of the Town. McDougall shall support (as may be requested from time to time) Parry Sound's efforts in this regard, and shall not object except on the grounds that any such agreement will recognize the priority McDougall has to ensure its drinking water requirements pursuant to this Agreement.

6.2 The Parties recognize that Parry Sound's drinking water currently includes fluoridation, and that this will be included in the water sold to McDougall. The Parties specifically acknowledge and agree that the continuance or discontinuance of the use of fluoridation is within the total authority of Parry Sound. McDougall shall not contest or otherwise object to any decision of Parry Sound to continue or discontinue the use of fluoridation.

6.3 Notwithstanding anything herein contained, if McDougall draws at any time or from time to time over a 30-day period water which exceeds a daily average of 1,908 cubic metres per day as provided in paragraph 4.1 hereof, Parry Sound shall impose a surcharge of 30% of the rate provided for in paragraphs 5.1,

5.2, 5.5 and 7.7 hereof on the volume of water which exceeds 1,908 cubic metres per day, until such rates are renegotiated or the matter has been resolved through the dispute resolution process provided in Paragraph 10 hereof.

7.0 Joint Responsibilities

- 7.1 Should any municipal official or agent become aware of any known failure to meet either the requirements as per the agreed supply arrangement as set out in the 3rd Draft Proposed Design Values, or any other legislative or regulatory requirement with respect to the drinking water in either community, such failure is to be brought to the immediate attention of both Parties.
- 7.2 In the event that the capacity of the existing membrane filtration plant as contemplated by this Agreement of 12 megalitres per day, is met, each Party will financially contribute to the proportionate expansion of capacity costs based on the benefit of use. As of the date of this Agreement, McDougall's proportionate share based on benefit of use of the capacity is 12.375%.
- 7.3 Each Party will support the other as is necessary to obtain approvals required to implement the terms of this agreement in every regard, but specifically with respect to any authorized governmental (or other) approving agency.
- 7.4 Each Party will support the other as is necessary to maximize the availability of potential government funding sources for the overall benefit of the combined water system.
- 7.5 Each Party shall make their best efforts so that the project contemplated herein shall be conducted so as to comply with all provincial legislation and regulations, including the *Safe Drinking Water Act*, S.O. 2002, Chapter 32, as amended.
- 7.6 In the event that the service population of Parry Sound's system reaches 10,000, Parry Sound shall bear the sole cost of the web-site notification required by provincial legislation. McDougall acknowledges and accepts responsibility for the web-site notification as required by the provincial legislation, should the effect of this Agreement cause such notification to be required in advance of the sole need of Parry Sound.
- 7.7 The parties acknowledge and agree that the Sustainable Water and Sewage System Act S. O. 2002, Chapter 29 as it is currently drafted (although not yet proclaimed by the Lieutenant Governor) requires that the parties establish and maintain a dedicated reserve account for the benefit of use to pay the full capital asset reserve funding for the treatment plant, booster station, the Smith Crescent elevated tank and in-town transmission main upgrades directly related to the provision of water to McDougall.

~~7.8 The Parties agree that a 2nd meter shall be installed for the purposes of measuring water leaving the elevated reservoir to the Parry Sound Kinsmen Park. The charge for water delivered to the Parry Sound Kinsmen Park shall be deducted from the charge to McDougall based on the readings of the metre referred to in paragraph 5.3.~~

8.0 Responsibilities of Parry Sound

8.1 Parry Sound will use its best efforts to ensure that the drinking water sold meets the minimum quality standards as established by Ontario's Drinking Water Legislation and Regulations.

8.2 Parry Sound shall have the responsibility of ensuring the drinking water is transmitted to McDougall as provided for by the facility design, including the elevated storage reservoir.

8.3 Parry Sound will deliver to McDougall drinking water as set out in the range of design figures as noted in 03-06-09, 3rd Draft Proposed Design Values, which is attached hereto as Schedule "B" and forms a part of this Agreement.

8.4 Parry Sound shall comply, to the best of their ability, with the applicable legislation with respect to fluoridation.

8.5 Parry Sound acknowledges the obligation of McDougall to construct its own drinking water treatment works. Parry Sound will take every reasonable step to ensure that the governmental funding commitments to that project will not be jeopardized through negotiations related to this Agreement.

9.0 Responsibilities of McDougall

9.1 McDougall shall not sell, or allow to be sold, drinking water obtained from Parry Sound outside of the municipal boundaries of McDougall. To this effect:

1.1 no watermain transmission/distribution will be constructed which passes water beyond the McDougall municipal boundary,

1.2 no commercial enterprise shall be allowed to transport water from McDougall to any location outside the McDougall municipal boundary.

9.2 The Parties agree that there may be exceptions made to the above upon written agreement signed by the Parties, which agreement may include terms.

10.0 Alternate Dispute Resolution

- 10.1 It is the intention of the Parties to work together for the mutual benefit of each. It is the intention of the Parties to work together for the mutual benefit of each other. To that extent if the Parties have a dispute about the interpretation, applicability or any provision of this Agreement they shall try to resolve the dispute through negotiation.
- 10.2 If the Parties disagree about any aspect of this Agreement they will try to resolve the dispute through negotiation.
- 10.3 If negotiation fails the Party seeking to have an issue resolved will define, in writing, the issue(s) in question and make any request for additional information that may be required to effect an informed resolution. This shall be presented to the other Party, who shall then respond with any documents reasonably requested together with a position on the issue presented within 15 days.
- 10.4 If the issue (including the sharing of documentation or other information) is not resolved within 30 days of being initially presented pursuant to Paragraph 9.2 above, the matter shall be referred to Mediation. The Mediation may be established on the consent of both Parties in any manner that they see fit. The Mediation shall not be binding, but if an Agreement is reached the Parties shall have the Agreement reduced to writing and signed by each.
- 10.5 If the issue is not resolved within 30 days of the same being presented to the Mediator, or if the Parties cannot agree on either the Mediator or form of mediation, the issue shall be referred to binding Arbitration, which shall be conducted in accordance with the *Arbitration Act*, S.O. 1991 as amended. The Parties agree that the decision of the Board of Arbitration shall be final and binding, and each intends to be bound by such decision without recourse to any Court of competent jurisdiction. Further, the Board of Arbitration shall have the authority to utilize its discretion to award costs.

11 Miscellaneous

- 11.1 Governing Law – This Agreement shall be governed by the Law of the Province of Ontario.
- 11.2 Severability – The invalidity or unenforceability of any term of this Agreement does not affect the validity or enforceability of any other term. Any invalid term will be treated as severed from the remaining terms.
- 11.3 Headings – The section headings contained in this Agreement are for convenience

only and do not affect the meaning or interpretation of any term of this Agreement.

11.4 Amendments – Any amendments to this Agreement must be in writing and signed by the Parties, dated and witnessed. Nothing herein prevents either party from entering into informal arrangements to effect the saving of time, money or other benefit, but if not in writing such informal arrangements may not be enforceable.

11.5 Non-Compliance – The failure to insist on the strict performance of any terms in this Agreement will not be a waiver of such term.

11.6 Independent Legal Advice – the Parties acknowledge that this Agreement was prepared by virtue of their joint retainer of Shaw, McLellan and Ironside. Each party acknowledges that have had their respective counsel review this Agreement prior to execution.

11.7 Effective Date – the effective date of this Agreement is the date on which the last party signs it.

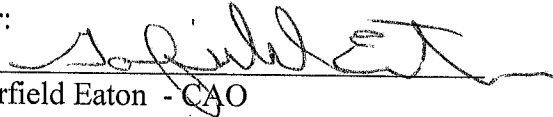
Dated at the Township of McDougall this 23 day of August, 2006

Per:



Dale Robinson - Mayor

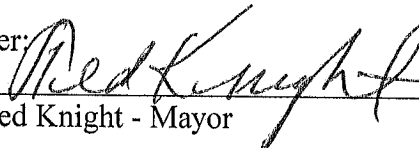
Per:



Garfield Eaton - CAO

Dated at the Town of Parry Sound this _____ day of _____, 2006

Per:



Ted Knight - Mayor

Per:



Rob Mens - CAO

Revised to May 3, 2005

MEMORANDUM OF UNDERSTANDING
between
The Town of Parry Sound (Town)
and
The Municipality of McDougall (McDougall)
with respect to
Potential Drinking Water Purchase/Sale from
the Parry Sound Municipal Water Supply/Treatment and
Distribution System

WHEREAS the parties to this Memorandum of Understanding wish to reduce to writing their general intentions as to the purchase/sale of drinking water,

AND WHEREAS the parties agree that this MOU and a future agreement is to be based on the principle that the purchase and sale of water is to be fair for both,

AND WHEREAS it is not the intention of either party to be bound by this document but each will use it as guidance to move towards the successful negotiations and execution of the necessary agreement(s) for the purchase/sale of drinking water.

INTENT

To establish a set of principles to be the basis of agreements to be entered into between the Town and McDougall respecting the sale/purchase of drinking water.

1. McDougall, having completed a Class Environmental Assessment rendering a selected alternative of purchasing drinking water from the Town of Parry Sound via an interconnecting pipeline and decommissioning the existing Nobel unfiltered lake supply in order to comply with Ontario's Act and Regulations regarding drinking water and the current Certificate of Approval requiring the provision of filtered water to the Nobel municipal drinking water system, intends to establish a long term drinking water purchase arrangement with the Town.
2. McDougall and the Town expect the capital contributions towards the necessary additional works to effect the water sales agreement and the general water quantity provisions to be in general accordance with the values as detailed in:
"3rd Draft (03-06-09) Municipality of McDougall
Nobel Municipal Waterworks
Extension to the Town of Parry Sound
Proposed Design Values
For Discussion purposes
Confidential",
as formulated by the designated negotiators for the parties.

3. It is recognized by the Town and McDougall that a number of existing and new facilities must be in place to allow for the purchase/sale of drinking water. these facilities include:
- a) the Town's membrane water filtration plant
 - b) interconnecting transmission watermain from the treatment plant to the Town boundary at old Highway 69 and Smith Crescent (the proposed elevated water storage tank location), some of which require upgrading and some of which are yet to be constructed.
 - c) the water booster pumping station in the vicinity of Church and Isabella Streets (both as it exists in the short term and with required upgrades in accordance with joint water demand growth)
 - d) a new elevated water storage reservoir (in accordance with the Town's Class Environmental Assessment at the location of the property purchased by the Town for this purpose near old Highway 69 and Smith Crescent)
4. It is further recognized that McDougall must provide an interconnection from the elevated water storage tank to the existing system to effect the sale (the parties agree that appropriate provisions to provide water service to the Town's ball diamonds in McDougall near the route of the interconnecting watermain will be accommodated) - not included in McDougall's upper limit - i.e. not in 1,468 persons (separately accounted for to avoid billing by either party). The provision of this connection is not included in this project but can be added on and financed by the Town.
5. The parties agree that the point of purchase for water shall be at or near the base of the proposed elevated water storage reservoir on the downstream side of the Town's proposed re-chlorination facilities and metering facility.
6. The parties acknowledge that the volumetric based charge for actual water used will be paid by McDougall to the Town for water provided by the Town at the point of purchase will be at the rate of \$.69 / cu meter adjusted annually by the percentage increase in the operating water user rate (excluding capital) by Town users.
7. The parties recognize that the Town will exercise its best reasonable efforts to ensure meeting minimum quality standards in accordance with Ontario Drinking Water Legislation and Regulations and pressure requirements in accordance with facility design parameters in particular the design of the elevated water storage reservoir. Any known failure to meet the legislated/regulated quality would be brought to the immediate attention of both parties.
8. The parties recognize that water will be delivered by the Town to McDougall to satisfy demands in accordance with the range included in the design figures and noted in the attached Appendix "A", 03-06-09, 3rd Draft Proposed Design Values (as detailed in the above bullet).

9. The Town and McDougall recognize McDougall's responsibility to have this system in place, commissioned and operating in advance of December 31st, 2006 as dictated by the Certificate of Approval for the existing Nobel water system.

10. The parties recognize that due to the limited available completion time, McDougall intends to proceed based on the understanding that a suitable purchase and sale agreement will, in fact, be reached and signed at the earliest possible convenience, to undertake necessary design, specifications, construction documents and to tender and award contracts such that the pipeline construction within the boundaries within McDougall can be underway during the calendar years 2005 - 2006.
11. The Town and McDougall are both interested in a long lasting relationship with predictable stability for both sides. Recognizing that such an agreement has to be in place for a long term to make it viable for both parties the agreement should be continuous with an obligation to review the terms in 20 years, further recognizing that there is a mutual obligation, that in the event of the treatment plant capacity being met, each party will financially contribute to the proportionate expansion costs based on benefit of use but in no event shall the agreement be terminated unless mutually agreed to by both parties. In the event there is a dispute at renewal which prevents the parties from agreeing to a renewal the matter shall be referred to the dispute resolution process.
12. The parties recognize that in accordance with the "Proposed Design Values" both parties can entertain reasonable growth of water sales in and around their existing systems.
13. McDougall recognizes that they will not sell water obtained from Parry Sound outside of the Municipality of McDougall. (i.e. No watermain transmission/distribution will be constructed as to pass water beyond the municipality boundary without mutual written consent of both parties).
14. McDougall recognizes that the Town may be negotiating to sell additional excess water capacity (over and above that which will be maintained for provision to McDougall) to other parties at the discretion of the Town.
15. The Town and McDougall will support each other as necessary in obtaining approvals as necessary to implement the project including those as necessary from MOE, MNR, MTO, DFO, Railways and other appropriate approving agencies.
16. The parties will continue to be mutually supportive in order to maximize availability of potential funding from provincial/federal sources to the overall benefit of the combined water system.
17. McDougall and the Town acknowledge that McDougall will be responsible for the construction of works that are solely for their use within the Municipality of McDougall and the Town will be responsible for the construction of works necessary under this arrangement located within the Town and also on the Town owned elevated storage facility site. As the project moves forward joint tendering of the works will be made to realize potential cost savings and meet operational time lines.

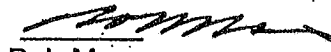
18. The parties agree that the project will be conducted so as to comply with appropriate provincial legislation including the new Safe Drinking Water Act and its Regulations
19. The parties recognize that the Town's treated water currently includes fluoridation and that water sold to McDougall is likewise impacted. McDougall acknowledges that continuance or discontinuance of fluoridation is the total authority of the Town. McDougall agrees in advance not to contest or obstruct a Town decision to continue and/or discontinue fluoridation. The Town agrees to comply, to the best of their ability, with applicable legislation with respect to fluoridation.
20. Respecting provincial legislation requiring website advertisement of Drinking Water Reporting, when the service population of a system reaches 10,000 persons, McDougall recognizes that should the agreement cause website notification in advance of Parry Sound's sole requirement, McDougall will be responsible for the cost of website notification until such time as Parry Sound's sole need would otherwise require it.
21. The parties acknowledge that government mandated changes imposed on the Town as responsible for supply and treatment of water to McDougall and the corresponding cost impact will be included at the time in the cost of water sales to McDougall, by the appropriate proportionate share.
22. The Town acknowledges McDougall's obligation toward construction of its own treatment plant and that Provincial funding commitments to that project cannot be jeopardized through negotiations related to the potential agreement for the purchase and sale of water from the Town's system.
23. The parties acknowledge and agree that the Sustainable Water and Sewage System Act (SWSSA) requires that the Parties establish and maintain a dedicated reserve account for the benefit of use to pay the full capital asset reserve funding for the treatment plant, booster station, the Smith Crescent elevated tank and in-town transmission main upgrades directly related to the provision of water to McDougall.
24. As soon as senior government funding is confirmed, joint tendering of the project will proceed.
25. The attached Appendix "B" outlines the estimated capital cost components of the project. The parties recognize that accurate and detailed project costing at the time of signing this Memorandum, has not yet been obtained.

All of which is acknowledged and endorsed by

1. The Corporation of the Town of Parry Sound



Ted Knight
Mayor
and



Rob Mens
C.A.O.

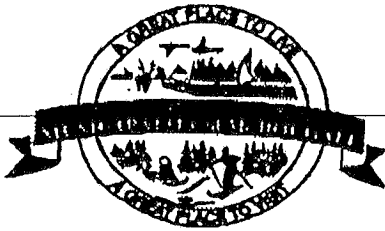
2. The Corporation of the Municipality of McDougall



Dale Robinson
Mayor



Garfield Eaton
CAO



JOINT MUNICIPAL SERVICING PROJECT

DRINKING-WATER SYSTEM(S) McDOUGALL/PARRY SOUND

COST/FUNDING ESTIMATE BREAKDOWN

May 4th, 2005

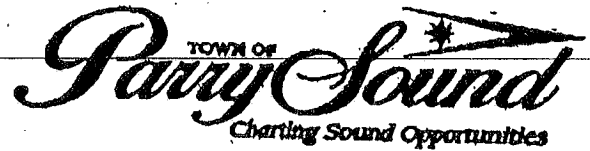
PROPOSED DRINKING-WATER FACILITIES

WORKS TO BE CARRIED OUT BY MUNICIPALITIES	McDougall	Parry Sound	Totals
Interconnecting Transmission Main - Construction/Upgrade	\$ 2,647,850	\$ 1,907,920	\$ 4,555,770
Shared Drinking-Water Storage Facility (Elevated Tank)	0	\$ 1,757,700	\$ 1,757,700
Total Value of Drinking-Water Works to be Constructed	\$ 2,647,850	\$ 3,665,620	\$ 6,313,470
Application of Mutual Cost/Benefit Works Value	\$ 1,918,000	-\$1,918,000	0
TOTAL COST/BENEFIT BY MUNICIPALITY	\$ 4,565,850	\$ 1,747,620	\$ 6,313,470

* Includes Engineering and Ancillary Costs

PROPOSED PROJECT FUNDING

SOURCE OF FUNDS	McDougall	Parry Sound	Totals
McDougall	\$ 1,191,513	0	\$ 1,191,513
Parry Sound	0	\$ 873,810	\$ 873,810
Federal Government (via OSTAR) (confirmed 04-12-04)	\$ 1,344,406	0	\$ 1,344,406
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TOTAL COST/BENEFIT COMMITMENT BY MUNICIPALITY	\$ 4,565,850	\$ 1,747,620	\$ 6,313,470
FUNDS/BENEFIT APPLICATION	-\$1,918,000	\$ 1,918,000	0
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JOINT MUNICIPAL SERVICING PROJECT

DRINKING-WATER SYSTEM(S)

McDOUGALL/PARRY SOUND

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Federal Government (via OSTAR) (confirmed 04-12-04)	\$ 1,344,408	0	\$ 1,344,408
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CONFIDENTIAL

3rd DRAFT (03-06-09)

CONFI

Municipality of McDougall Nobel Municipal Waterworks

Interconnection to the Town of Parry Sound

Proposed Design Values For Discussion Purposes

The following values have been revised to reflect the discussion between the Municipality of McDougall and the Town of Parry Sound of June 2nd, 2003 regarding design considerations necessary to finalize a water/sale purchase agreement.

MCDOUGALL/NOBEL DESIGN REQUIREMENTS/WATER DEMANDS

Current System

- existing MOE waterworks No. 220000451 (McDougall – Nobel)
- existing MOE Certificate of Approval No. 2898-543QLD
rated capacity of the plant 1,485 m³/day (Max Day) 1,485 m³/day
- existing Permit To Take Water No. 87P6593 (issued "in
perpetuity")
permitted amount of water taking 1,548 litres/minute
(2,229m³/day) 2,229 m³/day
- existing number of serviced units approximately 235 units
at 3.1 persons per unit existing service population equals
approximately 729 people 235 units
(729 persons)
- current permitted total design population 979 persons
(in accordance with former CofA 7-0925-85-886 issued May 11th,
1988) 979 persons
- proposed design horizon 25 years (2028)
- proposed maximum service population including allowable growth
= 979 x 1.5 = 1,468 persons (approx. 2 x 729 = 1,458) 1,468 persons
- current theoretical/design ADF (from CofA No. 7-0925-85-886) =
6.25 l/sec (540 m³/day) – (for 979 persons)
- from former CofA No. 7-0925-85-886, Average Day Demand =
551.5 litres/ day/person (540 ÷ 979 = 551.5 l/s)
- actual ADD – recorded (@ 235 units/729 persons) – 363 m³/day =
498 l/capita/day
- as per 03/06/02 discussions with McDougall/Parry Sound – use
per capita ADD of 520 l/cap/day as per both McDougall and Parry
Sound (i.e. Parry Sound – 2002 actuals) – (Note: 3 year average
555 (2000, 2001, 2003)
- therefore, Average Day Demand at 25 year horizon = 763 m³/day 763 m³/day
(1,468 persons x 520 l/cap/day + 1,000 l/m³ = 763)
- from MOE Design Guidelines Appendix N, use Max Day Factor
2.5 (for 1,468 persons) 2.5
- therefore proposed design horizon Max Day Demand = 1,908
m³/day (763 x 2.5) 1908 m³/day

- from MOE Guidelines Appendix N, Table 2 (assuming equivalent future population of approximately 10,000 persons made up of 4,100 persons (6,150 x 2/3) Zone 1 and 2,050 persons (6,150 x 1/3) in Zone 2
- fire flow requirements full town (10,000 persons) = 189 litres/second for 3 hours equals 2,041 m³
 - ∴ B = 4,327 - A = 4,327 - 2,041 = 2,286 m³
 - ∴ Parry Sound Max Day Demand related to future storage facilities = 2,286 ÷ 0.25 = 9,144 m³/day (10,000 persons)
- calculated for 10,000 persons @ 520 l/cap/day -
 - ADD = 5,200 m³/day
 - MDF = 2.00 (from MOE)
 - MDD = 10,400 m³/day

2,041 m³

2,286 m³

9,144 m³/day

WATER STORAGE FACILITIES SIZING REQUIREMENTS FOR TOWN OF PARRY SOUND "ALONE" CONSIDERING EXPECTED DEVELOPMENT HORIZON

- assuming the new storage facility would work in combination with existing Zone 2 storage
- assuming Town of Parry Sound populations current 6,150 persons therefore Zone 1 requirements = 4,100 persons
- assuming an approximately 25 year design horizon and an approximate 1.63 (10,000 ÷ 6,150) times the current service population
- the Parry Sound (only) design requirements for the elevated storage facility would be for 10,000 persons - Total

total storage requirements = A + B + C

where A = fire storage
= 189 (interpolated) litres/second for 3 hours = 2,041 m³

B = equalization storage (25% of Max Day Demand)

Maximum Day Demand = Average Day Demand X MDF (from Table 1 MDF = 2.00) (@population 10,000 persons)

ADF = 10,000 persons X 520 litres/person/day (actual for 2002)

= 5,200 m³/day

5,200 m³/day

MDD = 5,200 m³/day X 2.00

= 10,400 m³/day

10,400 m³/day

∴ B = 0.25 X 10,400

= 2,600 m³

2,600 m³

- Less existing Bowes Street tank (3,409 m³) equals additional Town requirements

$$= 6,941 \text{ m}^3 - 3,409 \text{ m}^3$$

$$= 3,532 \text{ m}^3$$

3,532 m³

McDougall Alone (at design horizon – 2028) = 1,299 m³
(population 1,468 @520 l/cap/day)

Parry Sound Alone (at design horizon – 2028) = 2,392 m³
(population 10,000 @520 l/cap/day)

Total Cumulative = 3,691 m³

Percentage Tank Volume Requirements (combined)

$$\therefore \text{McDougall} = 1,299 \div 3,691 = 35.2\%$$

$$\therefore \text{Parry Sound} = 2,392 \div 3,691 = 64.8\%$$

$$100.0\%$$

Proportions of required size (cumulative)

$$\text{McDougall} = 1,299 \div 3,532 = 36.8\%$$

$$\text{Parry Sound} = 2,392 \div 3,532 = 67.7\%$$

$$104.5\%$$

Ascertain proportional capacity requirements of the proposed pumping station replacement

- Assume % split based on future Max. Day Demands (because storage tank is designed to accommodate Peak Hour by storing a portion of Max Day requirements by nature)

A) McDougall Requirements

- Design population 1,468 persons 1,468 persons
- Per capital ADD (design) = 520 l/c/day
- ADD = 1,468 persons x 520 l/c/day 763 m³/day
= 763 m³/day
- MDF (from MOE Appendix N)
MDF for 1,468 persons is 2.50
- Max Day Demand = 2.50 x ADD 1,908 m³/day
= 2.50 X 763 = 1,908 m³/day

- McDougall Max Day Demand
 - For proposed 1,488 persons
= 1,908 m³/day 1,908 m³/day
- ∴ McDougall Proportion
= 1,908 ÷ 12,000
= 15.9% of total capital 15.9 %
(i.e. expended capital plus approximately \$100,000)
- Proportion of current treatment plant operations
Use current ADD to calculate
- McDougall ADD
= 729 persons x 520 l/cap/day
= 379 m³/day 379 m³/day
- Parry Sound ADF
= 6,150 persons x 520 l/cap/day
= 3,198 m³/day 3,198 m³/day
- Total Current Demand (ADD)
= ∴ 379 + 3,198 = 3,577 m³/day 3,577 m³/day

Proportional Share

McDougall 379 ÷ 3,577 = 10.6%
Parry Sound 3,198 ÷ 3,577 = 89.4 %

Shared Facility	Proportional McDougall Percentage	McDougall Contribution to Parry Sound Construction Advancement 4 years @ 3.25%/year Percentage	Total McDougall Contribution Percentage	Share of Capital (Operations) Parry Sound Percentage	Parry Sound Share Less Advancement Percentage
1 Treatment Plant	8.33 initially (up to 15.9)	0.0	8.33 initially (up to 15.9)	Remainder	Remainder
2 Watermain Upgrades	31.8	9.31 of total	41.1	68.2	58.9
3 Booster Pumping Station	31.8	9.31 of total	41.1	68.2	58.9
4 Elevated Storage Tank	36.8	8.63 of total	45.4	63.2	54.6



JOINT MUNICIPAL SERVICING PROJECT

DRINKING-WATER SYSTEM(S) McDOUGALL/PARRY SOUND

COST/FUNDING ESTIMATE BREAKDOWN

May 4th, 2005

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Schedule C

The G.S.T. Ruling of the G.S.T. Rulings Center issued the 27th day of January,
2006

(Note - to be added)

Fluoridation of Municipal Drinking Water Systems



Informed



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Agenda

- Introduction
- What is Water Fluoridation?
- Is Tooth Decay a Problem?
- Is Water Fluoridation Effective?
- Is Water Fluoridation Cost-Effective?
- What Happens When it is Discontinued?
- Is Water Fluoridation Safe?

Agenda

- Anti-fluoridation Arguments
 - It's Toxic!
 - It's a Fertilizer!
 - It's Unsafe to Handle!
 - It's Harmful to the Environment!
 - It Causes Cancer, Fractures, Lowers I.Q. etc. etc. etc...
 - It Causes Fluorosis!
 - It is Our Right to Choose!

Agenda

- Conclusions & Recommendation



C
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Literature Reviews

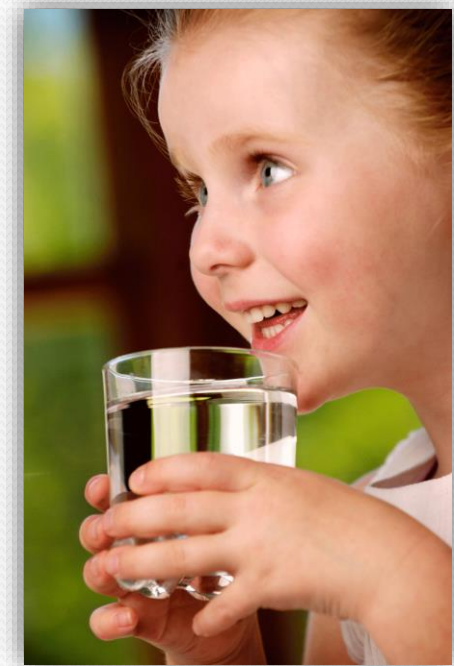


What is Fluoride?



How does Fluoride work?

- ✓ Helps prevent mineral loss caused by plaque acids
- ✓ Promotes re-mineralization of early decay



What is Water Fluoridation?



Is Tooth Decay a Problem?



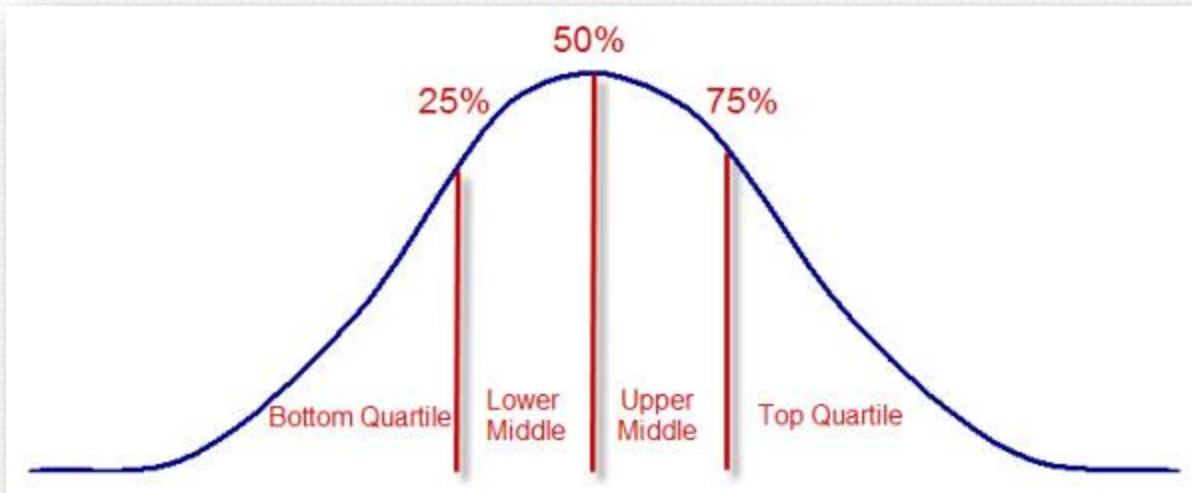
Single most common chronic disease among Canadians of all ages

Children in NBPSDHU with Tooth Decay



20%

Parry Sound



% of Decay in PS District Schools 2013-2014

15%

Is Water Fluoridation Effective?



“One of the greatest Public Health Achievements of the 20th Century”



“Universal access to fluoride for dental health is a part of the basic human right to health”

ADA American
Dental
Association®

“Estimated **20-40%** reduction in tooth decay”

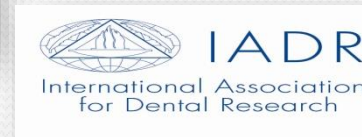
Declining Rates of Decay in Canada



> **40** Years of Fluoridated Water

- ✓ Children 2.5% to 0.5%
- ✓ Adolescents 9.2% to 2.5%
- ✓ Adults 17.5% to 10.7%

Supporting Organizations



Is Water Fluoridation Cost-Effective?



✓ Water Fluoridation is a cost-saving intervention

✓ **\$38** avoided costs for dental treatment for every **\$1** invested in community water fluoridation



What Happens?



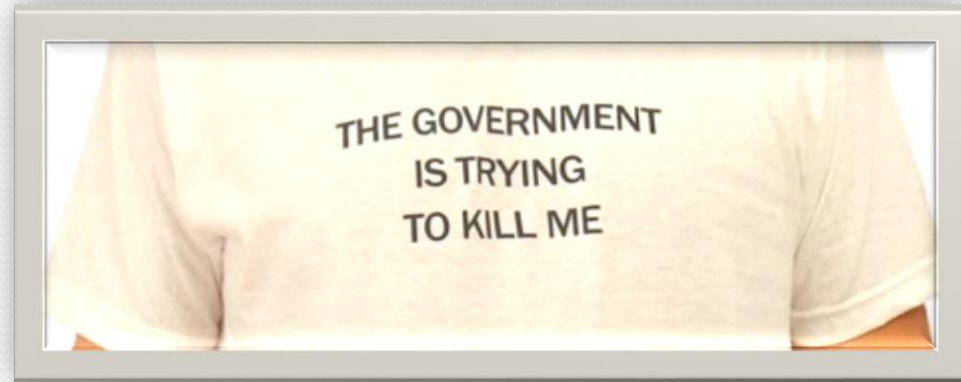
Public Health Costs &
Cavities Increase



Institut national
de santé publique
Québec 

- ✓ Cavities Doubled
- ✓ Water Fluoridation Re-introduced

Anti-fluoride Movement



Toxicity?

- **Dose** = the amount ingested over a period of time



Fluoride Levels in Drinking Water



- Maximum Acceptable Concentration: 1.5 mg/L
- Optimal Drinking Water Level: 0.7 mg/L
- Ontario Range: 2014 0.6 – 0.8 mg/L
- Parry Sound Levels (2011-2015): **0.5 – 0.8** mg/L



2.0 – 4.0 mg/L

By-products of the Fertilizer Industry!

“The federal government has no research or risk assessment of fluorosilicic acid.”

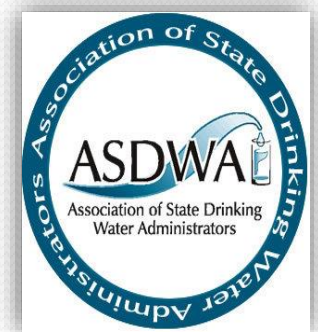
It's common



It's safe



Standards of Quality and Purity



Occupational Health & Safety



Occupational Health & Safety

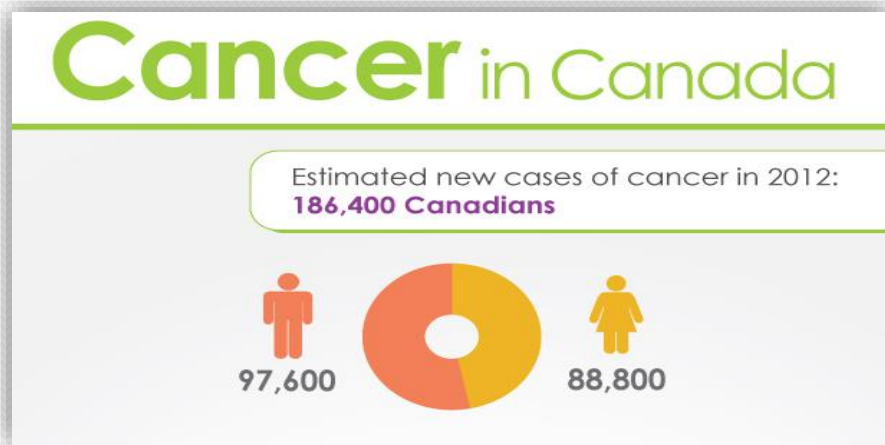


0 Lost-time Injuries
0 Deaths

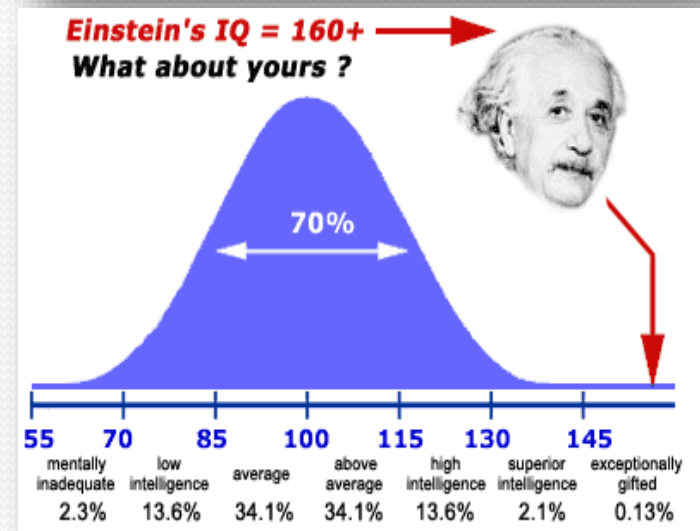
Handling of HFSA



Cancer! Fractures! Lower I.Q. !

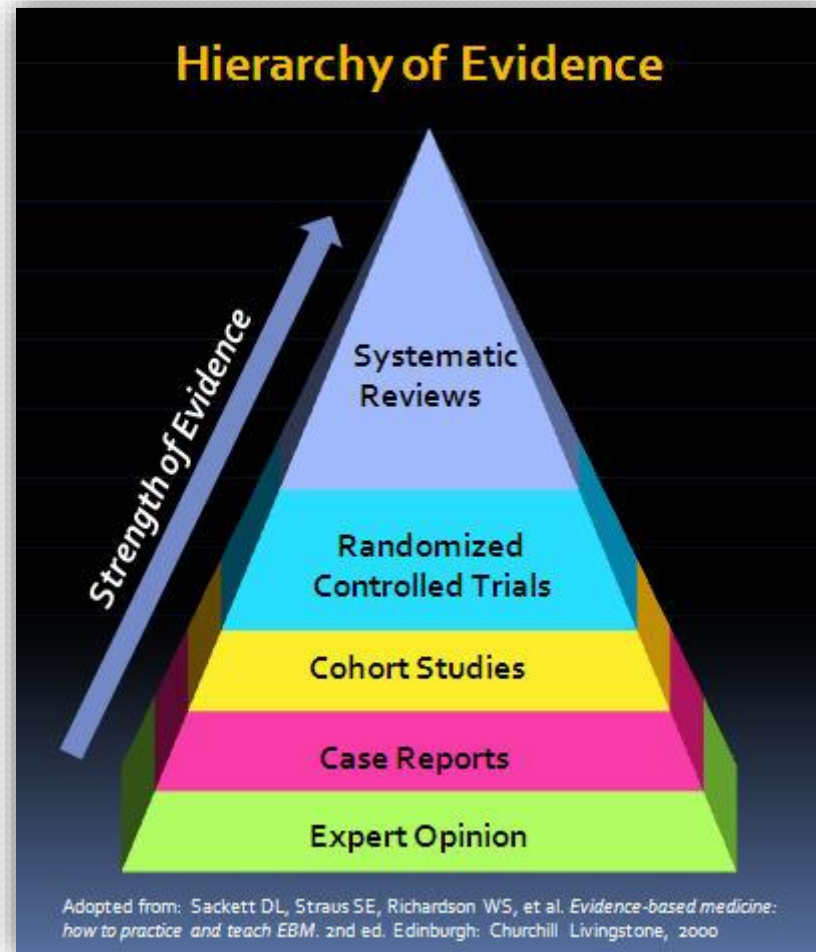


✓ **No association** based on a
Maximum Allowable Concentration
(MAC) = 1.5 mg/L



Assessing the Scientific Literature

Systematic Reviews



NOT
Selective
Reviews

Selective vs. Systematic Reviews

“Selective” Review

- Prove a point
- Picks and chooses articles
- No quality criteria
- Not specific

“Systematic” Review

- ✓ Published literature retrieved
- ✓ Reviewed for quality
- ✓ Summarized by experts
- ✓ Results synthesized to draw conclusions by groups of experts



Vigilance & Scrutiny



Developmental Fluoride Neurotoxicity:
A Systematic Review and Met-Analysis

[Environmental Health Perspectives. 2012 October, 120 (10)]

Criticism

- Harvard faculty – Study flawed
- Publication Bias: 26/27 selected were negative to start
- Excessive natural fluoride levels in China, Mongolia and Iran – 16 X
- Extrapolation to North America invalid
- Measured I.Q. differences only $\frac{1}{2}$ point – meaningless
- I.Q. Confounding factors not accounted for (arsenic levels, genetics, socioeconomic status, school quality, nutrition, parent's education levels, different intelligence measured across 27 studies)

Criticism

Authors admitted:

- “actual exposures of individual children not known”
- “the decrease in average I.Q. is small and within measurement error of I.Q. testing”
- “each of the [studies] reviewed had deficiencies, in some cases rather serious, which limit the conclusions that can be drawn”
- “studies were cross-sectional, (...) key information was missing”
- “these results do not allow us to make any judgement regarding possible levels of risk at levels of exposure typical for water fluoridation in the U.S.”

Does Water Fluoridation at Optimal Levels affect Brain Function or I.Q. Levels?



- ✓ There is **NO** accepted scientific evidence establishing a **causal relationship** between optimal fluoride consumption and brain function or I.Q.

Systematic Reviews

- Systematic Review of Water Fluoridation. UK/International study, 2000
<http://www.bmj.com/content/321/7265/855.full>
- Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. US Department of Health and Human Services Centers for Disease Control and Prevention, 2001
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5014a1.htm>
- A Systematic Review of the Efficacy and Safety of Fluoridation. National Health and Medical Research Council, Australian Government, 2007
<http://www.nhmrc.gov.au/publications/synopses/eh41syn.htm>
- Findings and Recommendations of the Fluoride Expert Panel, health Canada, January 2007
<http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2008-fluoride-fluorure/index-eng.php>

Fluorosis



Normal

Very Mild

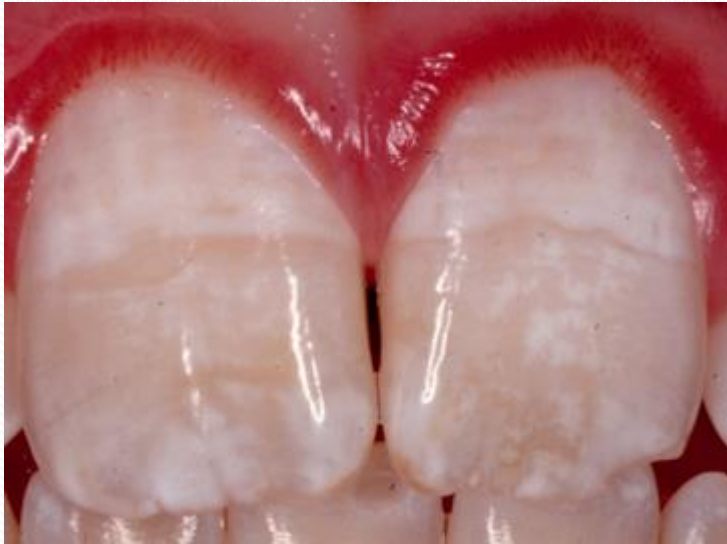


Questionable

Mild



Fluorosis



Moderate



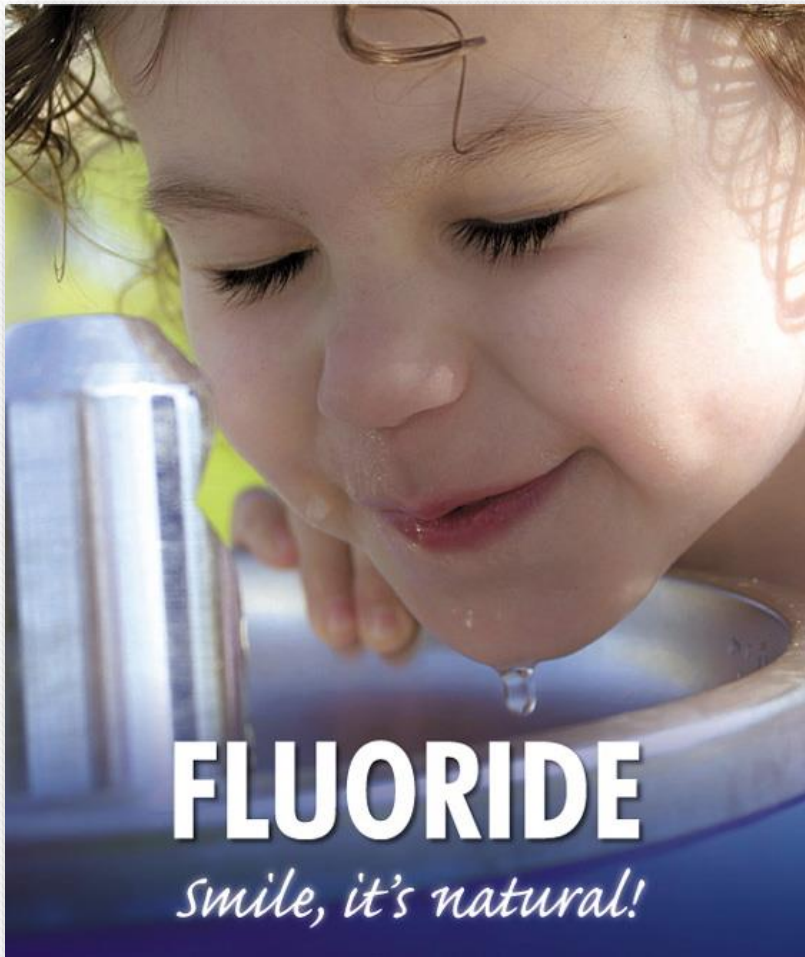
Severe

- ✓ Canadian Health Measures Survey: “too low to permit reporting”

Fluorosis vs. Decay



Is Water Fluoridation Safe?



YES

Harmful to the Environment?



✓ **No** association between water fluoridation and a negative impact on people, plants, or animals

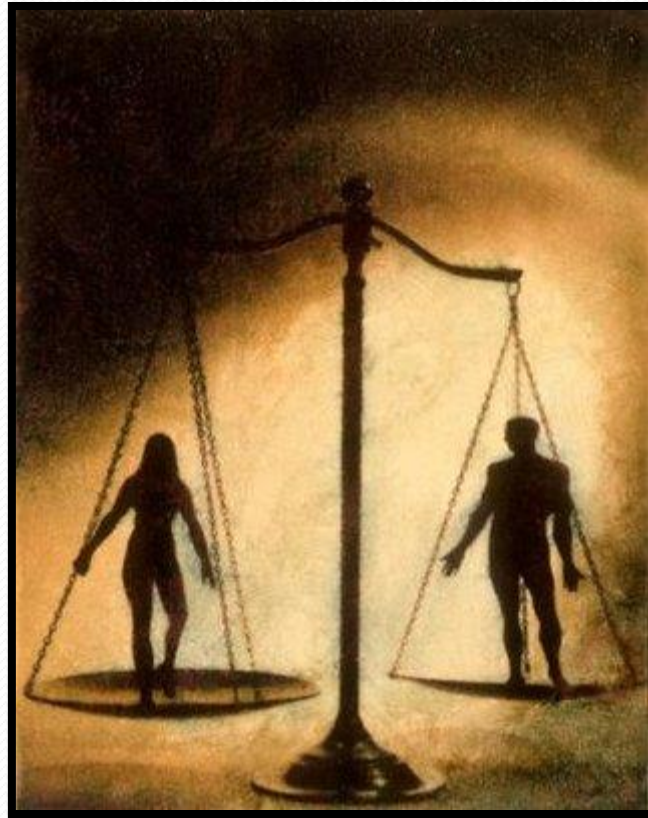


✓ **No** untoward effects from fluoridation on the environment

Is it Your Right to Choose?



Society is Not Equal

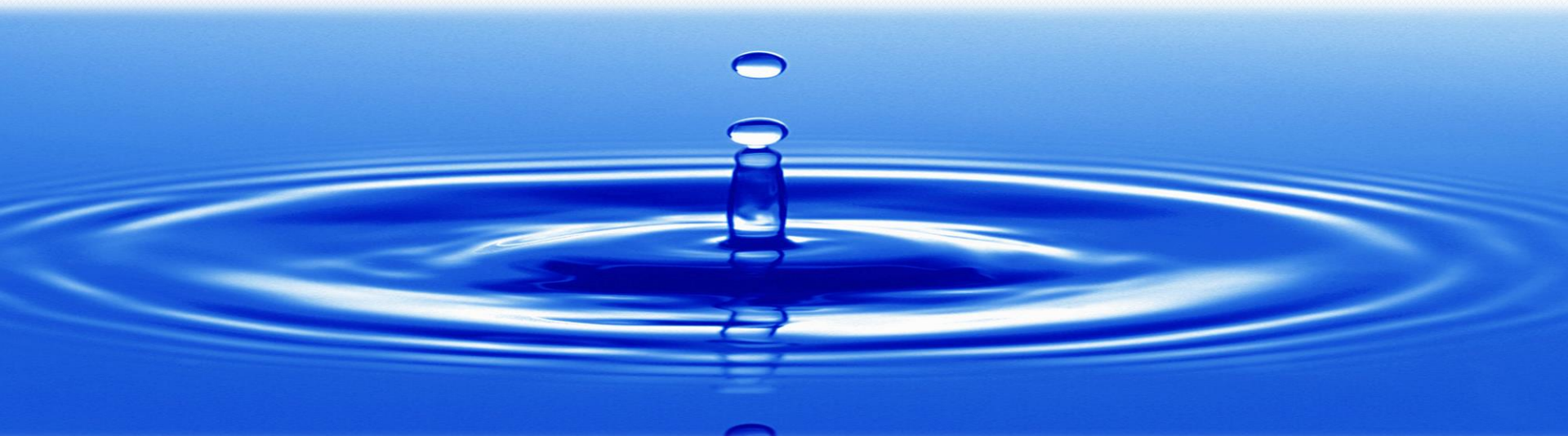


Population Preventive Health Interventions



Conclusions

- ✓ Water fluoridation is safe
- ✓ Water fluoridation is effective and cost-effective
- ✓ Water fluoridation reduces health inequities
- ✓ Water fluoridation is carefully monitored
- ✓ Water fluoridation poses minimal OH&S risk to staff



Conclusions

Good oral health => Good overall health





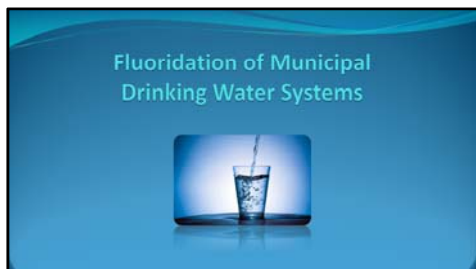
Decide



Yes



No



Good evening and thank you for inviting me back to further support your decision to continue fluoridation of the Parry Sound municipal drinking water system. I am joined tonight by Dr. Peter Weibe a Public Health trained dentist with years of experience...Dr. Lin Raimundo. These distinguished professionals are also very passionate about keeping fluoride in the municipal drinking water system and would be happy to comment or answer any questions you may have following the presentation.

When you voted in favour of continuing fluoridation you showed leadership and courage in the face of a vocal minority. You spoke up for those who do not have a voice or a choice. You backed the most vulnerable in society, our poor, our children and the elderly, those who do not have the same advantages as you and I. You chose to invest in prevention rather than pain and suffering and costly treatments which would be passed on to those who are least able to afford it. You showed compassion for those less fortunate. You made the right choice supported by the best scientific evidence we have to date.



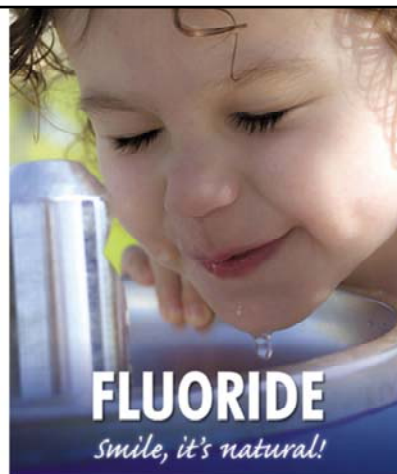
As Medical Officer of Health it is my job to improve the health of our communities by preventing disease when we can, promoting healthy choices, protecting the public and preparing for emergencies when they arise. There is no better example of prevention in public health that we know works as fluoridation of the municipal drinking water system. It reduces cavities for children and adults alike and has proven to be safe.

Population Preventive Health Interventions



Community water fluoridation helps everyone have strong, healthy teeth. It is similar to other population wide preventive public health strategies. Canada has a tradition of adding vitamins and minerals to food and drinks to protect human health. Examples include:

- Iodine in table salt to prevent thyroid disease
- Vitamin D in milk to prevent rickets
- Vitamin C in some beverages for healthy tissues
- Chlorination of drinking water to prevent water borne diseases such as E. coli, cholera and typhoid
- Mandatory Vaccinations



Drug Facts		Drug Facts (continued)	
ACTIVE INGREDIENT Sodium Monofluorophosphate - 0.242% (Total Fluoride Content - 1000 ppm Fluoride)	PURPOSE Anticavity	DIRECTIONS Adults and children 2 yrs. and older Children under 6 yrs. Children under 2 yrs.	Brush teeth thoroughly after meals or at least twice a day or use as directed by a dentist or physician. To increase brushing and a personal antiseptic and superior brushing with good habits and technique. Ask a dentist or physician.
USE Regular brushing with fluoride toothpaste helps protect teeth and helps prevent cavities.		INGREDIENTS Calcium Carbonate, Water, Sorbitol, Polyphosphoric Silica, Sodium Lauryl Sulfate, Pectin, Sodium Citrate, Methyl Cellulose, Sodium Stearate, Talc, Sodium Polyacrylate, Sodium Saccharin, Methyl Paraben, Titanium Dioxide, Polyethylene Glycol 400, Propyl Paraben, Color 7 G & 2 Blue # 1.	
WARNING Keep out of the reach of children under 6 years of age. In case of accidental overdose, seek professional assistance or contact a Poison Control Center immediately.			

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Using fluoride toothpaste is important, but it doesn't give maximum protection against cavities. Drinking fluoridated water provides crucial added protection against tooth decay. And many studies prove it. When it comes to protecting teeth, toothpaste and fluoridated water also work together to help prevent cavities. We need both of them.



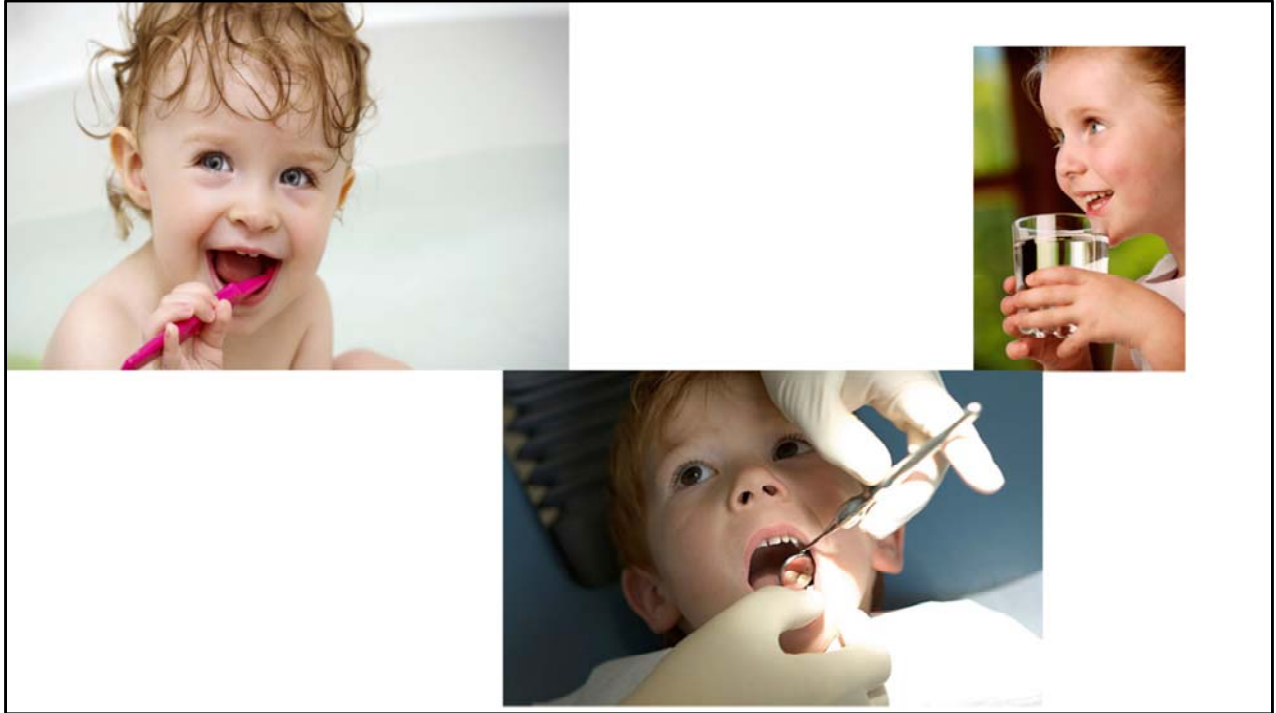
Seatbelts help protect passengers in a car, but does that mean we should stop putting air bags in cars?



When we were growing up, my brothers and sisters and I did not have the benefit of having fluoride in our drinking water. We didn't brush as often as we should have and we suffered the pain and shame of having cavities and poor teeth. I know how awful that feels.



As an anesthesiologist I often looked after very young children for hours at a time under general anesthetic to treat the disease in their mouths. Prevention is such a better choice. With fluoride in the drinking water as part of a comprehensive plan to improve dental health it worked.



My wife and I raised three children with the benefit of fluoride in our drinking water, brushing daily, and being fortunate enough to afford regular dental check-ups. They have beautiful teeth. I wouldn't want my kids drinking anything but fluoridated water. But, an anecdotal story isn't scientific.



Consider those cities with fluoridation such as Toronto. Fluoride has been added to the Toronto drinking water supply since 1963. Studies of Toronto children 12 years after the introduction of water fluoridation and again in 2000 show that by 2000, there was a 77.4% mean reduction in decayed, missing and filled baby teeth for five year-old children. There was also a 390% increase in the percentage of children with no tooth decay when compared to rates reported prior to the addition of fluoride in 1963.



The anti-fluoridationists will give examples of countries that don't fluoridate their drinking water supplies. What they don't tell you is that it is not because of safety concerns and they won't tell you that over 60 countries and 400 million people do have fluoridated water. What I can also tell you is that there are examples closer to home in cities that don't fluoridate their drinking water. There is a problem.



A good example is Orillia. It has never fluoridated their water- elementary school children have the most severely decayed teeth among the 10 largest communities in Simcoe Muskoka, at a 66% higher decay rate than fluoridated areas in the region.

What Happens?



Public Health Costs &
Cavities Increase



Consider what happens when fluoride is discontinued in municipal drinking water systems. In general, cavities increase and costs increase especially to those least able to pay for them.

What Happens?



Institut national
de santé publique
Québec 



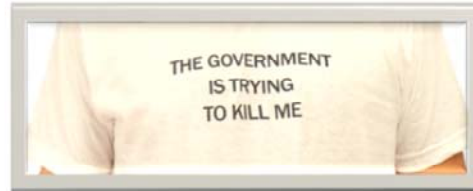
- ✓ Cavities Doubled
- ✓ Water Fluoridation Re-introduced

I previously gave you an example of Dorval Quebec in which cavities doubled in two years and fluoridation was re-introduced. More recently, just this past month, a study looking at the effects of stopping community water fluoridation in Calgary since 2011 pointed at a negative effect on dental health in children. But, in keeping with good science, conclusions should not be drawn until it is properly reviewed.



Fluoride is a mineral that exists naturally in virtually all water supplies. Usually, the amount of fluoride is too low to prevent tooth decay. We're simply adding a small, additional amount of fluoride to protect teeth from decay. Fluoride is nature's way to fight tooth decay. Fluoride is safe when used in appropriate amounts.

Anti-fluoride Movement



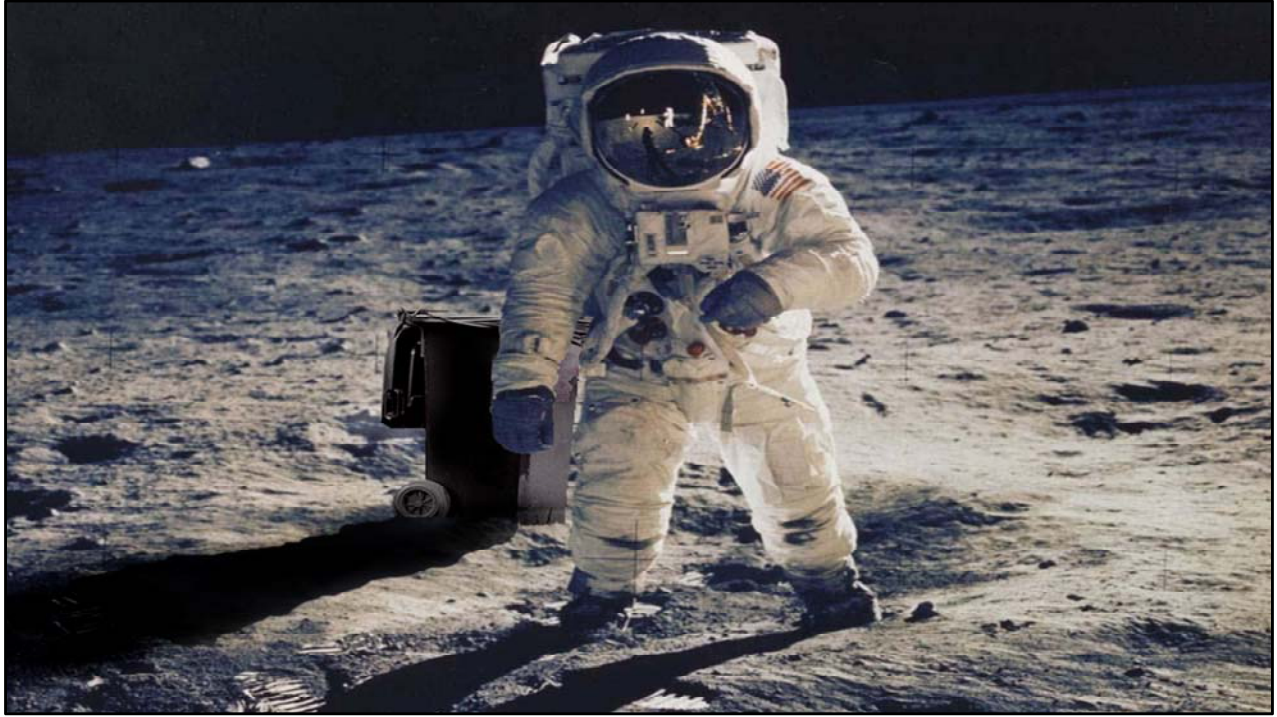
So what has changed since we last spoke? Nothing really. The anti-fluoridationists presented the usual arguments based on unfounded fear, appealing to people's emotions but not with legitimate science. In my previous presentation I addressed the majority of the concerns they usually raise and did. However, I wish to re-emphasize some points.



Let's begin with the evidence they presented. When you only select negative studies the outcome can only be negative. They do this to try and prove their point. Their mind is made up before they even start. This is scientific bias at its worst. By taking this approach they simply choose to ignore huge amounts of data and valid systematic studies. This type of approach should never be used to inform decision makers. When systematic reviews of both positive and negative studies are analyzed they have repeatedly concluded fluoridation is safe and effective in children and adults.



However, a certain amount of doubt is healthy. Science should be challenged and questioned.



It is how we got here today.



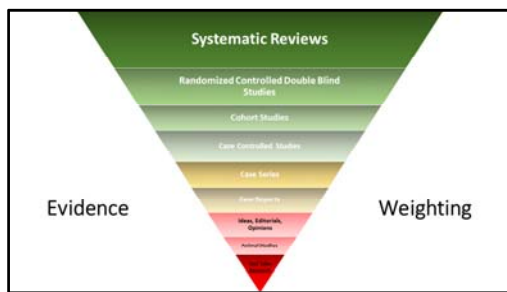
But, change has to be founded on good science not opinion.



So, let me reassure you, after careful review of the science by panels of skilled experts from many disciplines looking at all of the evidence, over the years and recent years, both positive and negative studies, the same conclusion has been reached. Fluoridation of community water systems is safe and effective in reducing cavities for the young and old.



Not only is it important to look at both positive and negative studies, it is just as important to look at the quality of the studies. Studies of high quality should be weighted more heavily than low quality studies.



For example, let's look at the upside down pyramid. Well-designed systematic reviews are at the top, are the highest quality, carry the most weight and should be used to inform decision makers. This is what those more than 90 national and international organizations used to inform their policy decision that fluoridation is safe and effective for children and adults.

Let's look at where the anti-fluoridation "rat study" ranks for quality. It ranks even below someone's idea or opinion. That is how much weighting it should be given. If you follow their logic, based on this one study where rats were fed 142 times the amount of fluoride that is found in municipal water, and where there is no proof of cause and effect in humans, you should reverse your decision? You should ignore 69 years of experience with large human, not rat populations, that show cavity protection and safety? You should ignore the recommendations of expert local, provincial, national and international organizations who recognize the importance of community water fluoridation in preventing cavities in children and those least able to afford care?

Vigilance & Scrutiny

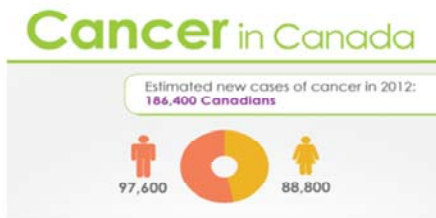


Developmental Fluoride Neurotoxicity:
A Systematic Review and Met-Analysis

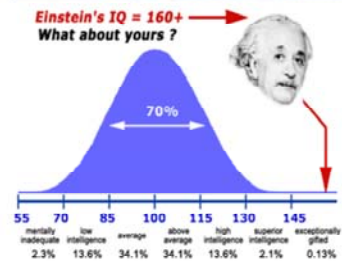
[Environmental Health Perspectives. 2012 October, 120 (10)]

I was quite surprised the anti-fluoridation argument included the flawed Harvard systematic review by Choi regarding neurotoxicity. This was the review I addressed last June and went into great detail as to the reasons why this review was dismissed even by Harvard professors as poor quality. The results were meaningless and could not be used to form any judgement on the low fluoride levels in our water supplies. Even the authors admitted there were serious issues with the study and meaningful conclusions could not be made. This illustrates my point, one study should not inform decisions. All of the evidence has to be considered.

Cancer! Fractures! Lower I.Q. !



✓ **No association** based on a
Maximum Allowable Concentration
(MAC) = 1.5 mg/L



Again, the science is solid. The weight of evidence does not support a link between fluoride levels in our drinking water and intelligence, bone fracture, bone fluorosis, immunotoxicity, reproductive toxicity, genetic toxicity or nerve toxicity. The fluoride levels we use are carefully controlled and monitored.

Fluorosis vs. Decay



While moderate or severe fluorosis does occur, the Canadian Health Measures Survey: Oral Health Statistics 2007-2009 concludes that, “[so] few Canadian children have moderate or severe fluorosis that, even combined, the prevalence is too low to permit reporting. This finding provides validation that dental fluorosis remains an issue of low concern in this country.”

The tooth decay in children that would result from not having fluoride in the your water system is far more damaging than the small risk of barely noticeable white spots on a child’s tooth.

Toxicity?



- **Dose** = the amount ingested over a period of time



All substances, including fluoride, can be toxic. Toxicity is typically related to the level of exposure or dose (the amount ingested over a period of time). Oxygen, water and salt, essential for life itself, will kill you if inhaled or ingested in excessive amounts. Try drinking undiluted chlorine, which you currently add to your municipal drinking water to prevent water borne diseases such as e-Coli, cholera, and typhoid. You will die. So, based on the toxic logic professed by the anti-fluoride movement we should also ban the use of chlorine. The point being, the benefits of adding chlorine or fluoride to our drinking water far outweigh the extremely low risk of adverse effects because the chlorination and fluoridation processes are carefully monitored and controlled to ensure they are safe.



I do understand and agree with you that research can often raise more questions than provide answers, especially when there are opposing opinions. I know that we should be very careful before adding substances to our water supply. I share your concerns. If community water fluoridation were a brand-new idea, I would be the first person in this city council chamber asking a lot of questions about its safety and effectiveness. However, when it comes to community water fluoridation, the science is solid. Parents have a lot of things to worry about. I know this first-hand because I am a parent. But many decades of research have demonstrated that water fluoridation isn't one of them.



Fluoridation is a health strategy that Canadian researchers helped to pioneer in the 1940s. It has greatly reduced the frequency of tooth decay. It has been so successful that cities in Britain, Spain, Ireland, Brazil, Korea and other countries have followed our lead. After 69 years of studies and good science, what we know is that adjusting fluoride in water to the optimal level is safe and effective against tooth decay both in children and adults. We don't have to guess the impact it will have because we know the impact it will have.



The leading health experts, not just locally, provincially, nationally, but globally, endorse community water fluoridation as a safe, effective way to reduce cavities. More than 90 national and international professional health organizations, including leading dental, medical and scientific organizations have endorsed the use of fluoride at recommended levels to prevent tooth decay. Examples include the University of Toronto Faculty of Dentistry, Ontario Dental Association, the Canadian Dental Association, American Dental Association, the Federation Dentaire Internationale/World Dental Federation, the International Association for Dental Research, Health Canada, the Public Health Agency of Canada, the Canadian Public Health Association, the Ontario Public Health Association, Public Health Ontario (Ontario’s scientific authority), the Association of Local Public Health Agencies, the former Chief Medical Officer of Health, the Council of Medical Officers of Health, the Canadian Medical Association, the Canadian Paediatric Society, the American Academy of Pediatrics, the Ontario Medical Association, the U.S. Centers for Disease Control and Prevention (CDC), the United States Surgeon General, and the World Health Organization (WHO). If what the anti-fluoridationists are saying is true then these respected organizations must have all joined forces to pull off the greatest global conspiracy of epic proportion because they all have concluded that fluoridation is safe and effective in reducing cavities in both children and adults.

Society is Not Equal



Choice, opportunity and health are not equally distributed across society. Water fluoridation benefits all residents in a community and poor people benefit most, as they are least likely to receive the benefits of fluoride through other means such as brushing their teeth or visiting a dentist's office for topical application of fluoride.



Drinking fluoride-free water, which in fact does not exist, is not a basic human right but a question of individual preference. There is no such thing as the right to drink fluoride-free water.

Our water supply belongs to the community, so it's a community choice. And nearly 70 years of experience and research prove that fluoridation is a smart choice for reducing tooth decay. It should not be an individual choice because that would deprive the whole community of a proven form of prevention.

Is Tooth Decay a Problem?



Single most common chronic disease among Canadians of all ages

To conclude, dental disease is the single most common chronic disease in Canadians but it is declining because of a comprehensive preventive oral health strategy in which adding fluoride to our drinking water plays a significant role. Removing fluoride from municipal drinking water systems leads to more cavities and cost especially for the most vulnerable in our society.

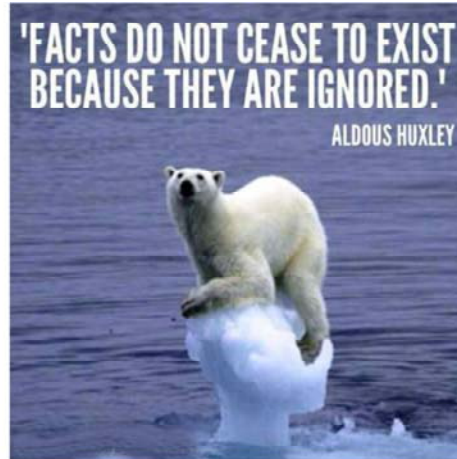
Is Water Fluoridation Safe?



Water fluoridation is an effective public measure that reduces inequalities in health and benefits all residents in a community.



Well-designed systematic reviews by experts qualified to do them have consistently demonstrated that water fluoridation at the levels we currently use and monitor carefully is safe, benefits everyone and is cost-effective. That is why so many provincial, national and international organizations continue to support the fluoridation of municipal drinking water systems.



Those against fluoridating the Parry Sound drinking water system are asking council to do what they have done. Ignore the well-designed systematic reviews that show fluoridation is safe and effective at reducing cavities in children and adults. Ignore the more than 90 organizations that recommend fluoridation. Ignore the most vulnerable and disadvantaged in society. Ignore the fact that children, the poor and elderly will be the ones suffering both physically, emotionally and financially.



When you voted to keep fluoride in your community drinking water system you showed courage, compassion and leadership. You listened to what the science was saying and what you believed in your heart to be the right thing to do. You made the right choice.



Thank you.