

Town of Drumheller COUNCIL MEETING AGENDA

**June 15, 2014 at 4:30 PM
Council Chamber, Town Hall
224 Centre Street, Drumheller, Alberta**



Page

1.0 CALL TO ORDER

2.0 MAYOR'S OPENING REMARK

3.0 PUBLIC HEARING

4.0 ADOPTION OF AGENDA

5.0 MINUTES

5.1. ADOPTION OF REGULAR COUNCIL MEETING MINUTES

3-5 5.1.1 Regular Council Meeting Minutes of June 1, 2015

5.2. MINUTES OF MEETING PRESENTED FOR INFORMATION

6-12 5.2.1 Municipal Planning Commission - May 7, 2015

5.3. BUSINESS ARISING FROM THE MINUTES

6.0 DELEGATIONS

7.0 COMMITTEE OF THE WHOLE RECOMMENDATIONS

8.0 REQUEST FOR DECISION REPORTS

8.1. CAO

13-34 8.1.1 Water Fluoridation Report

35-102 8.1.2 RFD Alta Gas Franchise

Page

8.1. CAO

103-104 8.1.3 Bylaw 10.15 Alta Gas Franchise - First Reading

8.2. DIRECTOR OF INFRASTRUCTURE SERVICES

8.3. DIRECTOR OF CORPORATE SERVICES

105-106 8.3.1 RFD - Sandstone Manor Tax Cancellation

8.4. DIRECTOR OF COMMUNITY SERVICES

8.4.1 Canada's 15th Birthday Celebration - Federal Grant Application

8.5. DIRECTOR OF PROTECTIVE SERVICES

9.0 PRESENTATION OF QUARTERLY REPORTS BY ADMINISTRATION

10.0 PUBLIC HEARING DECISIONS

11.0 UNFINISHED BUSINESS

12.0 NOTICE OF MOTION

13.0 COUNCILLOR REPORTS

13.1 Councillor P. Kolofa - FCM Conference

14.0 IN-CAMERA MATTERS

**Town of Drumheller
COUNCIL MEETING
MINUTES**

June 1, 2015 at 4:30 PM
Council Chamber, Town Hall
224 Centre Street, Drumheller, AB, T0J 0Y4



PRESENT:

DEPUTY MAYOR:

Jay Garbutt

COUNCIL:

Sharel Shoff

Lisa Hansen-Zacharuk

Patrick Kolafa

Tara McMillan

Tom Zariski

CHIEF ADMINISTRATIVE OFFICER/ENGINEER:

Ray Romanetz

DIRECTOR OF CORPORATE SERVICES:

Barb Miller

DIRECTOR OF COMMUNITY SERVICES:

Paul Salvatore

DIRECTOR OF PROTECTIVE SERVICES:

Greg Peters

RECORDING SECRETARY:

Corinne Macdonald

ABSENT: Mayor Terry Yemen

Director of Infrastructure Services A. Kendrick

1.0 CALL TO ORDER

2.0 MAYOR'S OPENING REMARK

Mayor T. Yemen reported that the Fountain is operational and that there will be further work carried out at the end of the year. He also reported that we have received positive comments on the Munchie Park. This work is being carried out with a combination of Town Staff and the Inmate crew. He thanked G. Peters for co-ordinating this project.

2.1 Proclamation for Senior's Week June 1 to 7, 2015

Mayor T. Yemen proclaimed June 1 to 7, 2015 at Senior's Week in Drumheller.

8.2. DIRECTOR OF INFRASTRUCTURE SERVICES

8.3. DIRECTOR OF CORPORATE SERVICES

8.4. DIRECTOR OF COMMUNITY SERVICES

8.5. DIRECTOR OF PROTECTIVE SERVICES

8.5.1 For Information an Update on Black Knot Fungus

G. Peters presented some information on the Black Knot Fungus concern we have in Town right now. He advised that P. Kushko from the Town has been actively dealing with the fungus on Town land. He noted that this fungus thrives on specific trees, chokecherry, apricot, and it thrives in wet weather. The fungus is very hard to eradicate, as it has spores that spread very easily. Councillor L. Hansen-Zacharuk asked if there is some advice we can give to people before they buy trees. G. Peters advised that if you go on the Provincial web site they provide information on this matter. Councillor T. McMillan asked if there is any risk to the public. G. Peters advised that there is no risk to the public.

9.0 PRESENTATION OF QUARTERLY REPORTS BY ADMINISTRATION

10.0 PUBLIC HEARING DECISIONS

11.0 UNFINISHED BUSINESS

12.0 NOTICE OF MOTION

13.0 COUNCILLOR REPORTS

13.1 Mayor T. Yemen - Tough Mudders

13.2 Mayor T. Yemen - Festival Society

Mayor Terry Yemen advised that the Festival Society has no Council representation, however he has attended several meetings. He noted that the Festival Society is fully engaged and moving forward with Tough Mudders and everything is on track. The Chamber will be working with any businesses wanting to work with them on this event.

He noted for clarification that the Town is not putting on the Tough Mudders event it is the Festival Society. Councillor T. Zariski advised that he has received concerns from people that do not know who to contact and asked if we could get an organizational chart showing who is doing what. Mayor T. Yemen advised that the Festival Society's resources are limited, and that this is not the Town of Drumheller's event, they should not be contacting the Town. Councillor J. Garbutt noted that the Tough Mudders website is helpful for their volunteers. Mayor T. Yemen noted that the preference is people wanting to volunteer go through the Festival Society, if they do there is a financial value to them.

13.3 Mayor T. Yemen - Canadian Badlands

Mayor Terry Yemen advised that they have a new President Barry Masito. He also noted that they are having discussions with the Pheasant Club to hold an event over a weekend. Mayor Yemen advised that Canadian Badlands are launching a brand

...

Agenda Item # 5.1.1

MOTION2015.98 Hansen-Zackaruk, McMillan moved to go in-camera at 5:15 PM. Carried unanimously.

14.0 IN-CAMERA MATTERS

14.1 Mayor T. Yemen - Legal Matter

MOTION2015.99 Hansen-Zackaruk, McMillan moved to come out of camera at 6:35 PM. Carried unanimously.

**Municipal Planning Commission
Minutes
Meeting of Thursday, May 7, 2015**

Present: Brad Wiebe, PRMS
Jaiden Henry, PRMS
Donna Kittridge, Recording Secretary
Sharon Clark – Vice Chair
Scott Kuntz, Member
Paul Salvatore, Director of Community Services
Sharel Shoff, Councillor/Member
Shawn Francis, Chairperson
Clayton Gillis, Member
Stacey Gallagher/member
Tom Zariski, Councillor/Member

Absent:

1.0 CALL TO ORDER – 12:10 P.M.

Motion to Approve Agenda: Scott Kuntz
Seconded by Sharel Shoff - Carried

2.0 MINUTES FROM PREVIOUS MEETINGS

March 12, 2015 – Motion to approve Sharel Shoff
Seconded by Clayton Gillis – Carried
April 2, 2015 - Motion to approve Tom Zariski
Seconded by Stacey Gallagher - Carried

3.0 DEVELOPMENT PERMITS

3.1 T00025-15D – David Lunn – Proposed Sports Field and running Track – “CS”

P. Salvatore presented Development Permit T00025-15D submitted by David Lunn on behalf of Christ the Redeemer Catholic Schools for placement of an Olympic size track and sports field located at 1000 North Dinosaur Trail on Plan NE 10-29-20; Block 6, Lot 1 Drumheller. Zoning is Community Service District. The Track would be listed as a permitted use in this district.

P. Salvatore advised this Track application was reviewed at a previous meeting for information purposes, and that, MPC had voiced concerns about the right of ways and parking. Since then Alberta Transportation has provided a letter supporting the development and noting that although the proposal would partially encroach into the service road dedication, this should not adversely affect the functionality of the highway. If access to properties west of the proposed track is required, this could be facilitated from 14th street NW.

MPC discussion followed on the concerns of parking, storm water drainage, the lack of spectator viewing areas, and potential blocking of access to properties to the west. It was noted that the use of a French drain (a gravel filled ditch often found on golf courses) would help to minimize erosion. There are some there now but there is still concern about the storm water management. B. Wiebe noted that the track has been designed and engineered plans have been provided so run off could be dealt with as part of the requirements for approval. Another concern was parking for spectators who would attend these events and how it would be managed. T. Zariski noted that there is a large parking lot adjacent that is used by school during the day that would be available for weekend and evening events. Also the bus loops would provide some additional parking. The retaining walls and perimeter fencing should help to discourage people parking along the highway. The close proximity to the highway and a May 7, 2015 that may incur from illegal parking would be the responsibility of the R.C.M.P.

Page 6 of 100

Agenda Item # 5.2.1

There remains great concern in regards to run off and how it would affect surrounding communities. The plan was felt to be not well thought out, largely due to their not being adequate space to accommodate the Olympic size track. If the track was reduced in size and oriented diagonally, many of the concerns could be dealt with. While Alberta Transportation feels access concerns can be alleviated, some MPC members have remaining concerns about storm water drainage, parking and the lack of spectator viewing areas. The following MPC members have asked to be listed as opposing the application as presented:

Sharon Clark – Opposed
Clayton Gillis – Opposed
Stacey Gallagher – Opposed

Motion: Tom Zariski moved Development Permit T00025-15D submitted by David Lunn for development of an Olympic size track and sports field located at 1801 South Railway Avenue on Plan 1111835; Block 18, Lot 2 Drumheller be approved.

Issue to be monitored.

1. Development shall conform to Land use Bylaw 10-08.
2. Prior to commencement of construction applicant must receive approval from Town Council for the project.
3. Prior to commencement of construction site plan to be submitted to the satisfaction of the Development Officer.
4. Landscaping to be in accordance with Land Use Bylaw 10-08; Policy C04-02 and to the satisfaction of the Development Officer.
5. Any required Safety Codes permits (i.e. building, electrical, etc.) to be obtained prior to commencement of construction/installation.
6. If the holder of the permit wishes to make any changes in the proposed development from application as approved, the holder of the permit must first obtain permission from the Development Officer/Municipal Planning Commission. An additional Development Permit may be necessary.
7. All contractor's to be in possession of a valid Town of Drumheller business license.
8. All local improvements including, however not limited to driveways, frontage charges, water/sewer services, are at the expense of the owner.

Development to conform to any and all other pertinent Municipal, Provincial or Federal legislation and all other agencies.

Scott Kuntz seconded the motion. – Carried

3.2 T00026-15D – Badlands Passion Play –Agricultural – “A”

P. Salvatore presented Development Permit T00026-15D submitted by Canadian Badlands Passion Play to renew the temporary RV sites and the addition of 2 more from the last application for May through to July located at 605 17th Street SW on Plan 9210370; Block 2; Drumheller. Zoning is “A” – Agricultural District. Campground is discretionary use in this district.

P. Salvatore advised this is an application to expand the number of campsites allowed last season by two. These sites are non serviced and on land owned by Canadian Badlands Passion play and are for key paid staff.

MPC discussed the application and the question was asked if this was approved last year did they need to reapply and it was decided that yes as each approval is given for only one year at a time.

Motion: Clayton Gillis moved Development Permit T00026-15D submitted by Canadian Badlands Passion Play to add two additional camp sites located at 605 17th Street, Drumheller on Plan 9210370; Block 2; Drumheller be approved subject to the following conditions:



1. Must conform to Land Use Bylaw 10-08.
2. Must conform to the Town of Drumheller Community Standards Bylaw.
3. Development to adhere to the Recreation Area Regulation from Alberta Health Services including but not limited to section 12(3) which states; *The operator of a recreational vehicle must ensure that no waste material contained in or coming from the recreational vehicle is deposited in any manner that creates or may create a nuisance.*
4. All necessary permits (building, electrical, plumbing, etc) to be in place prior to construction/installations.
5. If the holder of the permit wishes to make any change in the conduct of the business/development that departs from the description in the application or from any other condition or restrictions imposed, the holder of the permit must obtain prior permission of the Development Officer/Municipal Planning Commission. This includes any addition or creation of camping sites not specified on the application.
6. Garbage, grease and waste materials must be stored in weather proof and animal proof containers and screened from adjacent sites and public thoroughfares.
7. Development to conform to any and all Federal, Provincial and/or Municipal regulations and/or guidelines that may apply.
8. Any and all local improvements at owner's expense including, however not limited to driveways, curb cuts, service connections, etc.
9. The site and buildings, structures and improvements shall be maintained in a clean, neat, tidy and attractive condition and free from all rubbish and debris.
10. All contractor's to be in possession of a valid Town of Drumheller business license.
11. **Permit expires December 31, 2015.**

Sharel Shoff seconded the motion. – Carried

3.3 T00022 15D – John Goudy – Garage – “R-1”

P. Salvatore presented Development Permit T00022-15D submitted by John Goudy to build a new large Garage located at 210 – 1 Street South, Plan 761349; Block A; Drumheller. Zoning is Residential. A permitted use in this district.

P. Salvatore advised this permit is being submitted by John Goudy and a 20 % relaxation is required to allow 18 ft. building height, the 2400 square foot garage will need a variance for the requested height of 18 feet. The required relaxation is within MPC authority.

MPC discussion followed and the application had no objections.

Motion: Sharel Shoff moved Development Permit T00022-15D submitted by John Goudy to build a new oversized Garage located at 210 – 1 Street S, Plan 761349; Block A; Drumheller. Be approved.

1. Development shall conform to Town of Drumheller Land Use Bylaw 10-08.
2. Placement of construction as per submitted site plan.
3. Height of accessory building as per plans submitted and not to exceed an elevation of (18 ft.).
4. Construction to be in accordance with the Alberta Building Code.
5. Contact Alberta One-Call to request that buried utilities be located and marked before you dig; secondary utilities are the property owner's responsibility. 1-800-242-3447 Alberta One-Call.
6. If the holder of the permit wishes to make any changes from the site plan, the details of the application or from any condition, guideline or restriction imposed, the holder of the permit must obtain prior permission of the Development Officer/Municipal Planning Commission. An additional development permit application may be necessary.



7. All necessary Safety Codes permits (building, electrical, gas, plumbing, etc.) to be in place prior to commencement of any construction/installation.
8. Any and all local improvements including, however not limited to driveways, frontage charges, water/sewer services, are at the expense of the owner.
9. Development to conform to any and all Federal, Provincial and/or Municipal regulations and/or guidelines that may apply.
10. All Contractors and Sub-Contractors to be in possession of a valid Town of Drumheller business license.
11. External finished appearance to be compatible with exiting development and to the satisfaction of the Development Authority.

Clayton Gillis seconded the motion – carried.

3.4 T00033 15D 11 Bridges Campground – Cabins on Skids – “UT”

P. Salvatore presented Development Permit T00033 15D submitted by Lori and Dave Tudor to provide ten portable cabins located at 332 4 Avenue S, Rosedale, Plan 9011310; Block 1 Drumheller. Zoning is “UT”. Portable buildings are a discretionary use in this district.

P. Salvatore advised the Rapid evacuation plan for the cabins to be moved in case of flood has been provided and MPC was able to view a video showing the movement of the unserviced cabins at the campground. Other issues will be addressed by the Business License by laws.

B. Wiebe visited the sites and provided a map with sections in red that would affect the placed cabins.

MPC discussion was favorable for the placement of the cabins for camping purposes.

Motion: Tom Zariski moved Development Permit T00033 15D submitted by Dave & Lori Tudor to supply small 10 x 10 cabins at the 11 Bridges campground at 332 4 Avenue South Rosedale, Plan 9011310; Block 1; Drumheller. Zoning is Urban Transitional.

1. Must conform to Land Use Bylaw 10-08.
2. Must conform to the Town of Drumheller Community Standards Bylaw.
3. Development to adhere to the Recreation Area Regulation from Alberta Health Services including but not limited to section 12(3) which states; *The operator of a recreational vehicle must ensure that no waste material contained in or coming from the recreational vehicle is deposited in any manner that creates or may create a nuisance.*
4. All necessary permits (building, electrical, plumbing, etc) to be in place prior to construction/installations.
5. If the holder of the permit wishes to make any change in the conduct of the business/development that departs from the description in the application or from any other condition or restrictions imposed, the holder of the permit must obtain prior permission of the Development Officer/Municipal Planning Commission. This includes any addition or creation of camping sites not specified on the application.
6. Garbage, grease and waste materials must be stored in weather proof and animal proof containers and screened from adjacent sites and public thoroughfares.
7. Development to conform to any and all Federal, Provincial and/or Municipal regulations and/or guidelines that may apply.
8. Any and all local improvements at owner’s expense including, however not limited to driveways, curb cuts, service connections, etc.
9. The site and buildings, structures and improvements shall be maintained in a clean, neat, tidy and attractive condition and free from all rubbish and debris.
10. All contractor’s to be in possession of a valid Town of Drumheller business license.



If an evacuation notice is given to the campground in case of a flood, the two cabins that are placed on sites 14 & 15 located in the floodway (as shown on the 2000 Alberta Environment flood elevation layers map) shall be moved to higher ground when necessary by rapid extraction.

Stacey Gallagher seconded the motion – carried

3.5 T00027 15D Kold Katcher Inc. – Storage Shelter – “M-1”

P. Salvatore presented Development Permit T00027 15D submitted by Kold Katcher Inc. To erect a fabric covered building located at 531 Premier Road, Plan 7911034; Block 3; Lot 4; Drumheller. Zoning is “M-1” Light Industrial.

P. Salvatore advised the fabric covered building is a permitted use in the “M-1” light industrial district.

B. Wiebe advised that these types of Industrial style buildings have requirements for anchoring. This structure will be subject to a Building permit and should follow the community standards by laws. This was in answer to questions from MPC on the maintenance of the tarp should it become torn or tattered or otherwise unsafe.

Motion: Clayton Gillis moved Development Permit T00027 15D submitted by Kold Katcher Inc. for a fabric covered building at 531 Premier Road, Plan 7911034; Block 3; Lot 4, Drumheller. Be approved.

1. Development shall conform to Town of Drumheller Land Use Bylaw 10-08.
2. Development shall conform to the Town of Drumheller Community Standards Bylaw (16-10).
3. Placement of storage structure as per plot plan submitted.
4. Construction to be in accordance with the Alberta Building Code.
5. A Building permit to be in place prior to construction.
6. A storage structure shall be for cold storage only and shall not be connected to utilities.
7. A storage structure shall not be used as a sign.
8. All local improvements at owner's expense including, however not limited to, driveways, and frontage charges, (Call 823.1330 for the regulations).
9. A storage structure shall be screened from view as required by the Municipal Planning Commission and/or may require exterior finishing to be in general conformance with the principal building or surrounding development.
10. If the holder of the permit wishes to make any changes in the proposed development from application as approved, the holder of the permit must first obtain permission of the Development Officer/Municipal Planning Commission. An additional development permit may be necessary.
11. Must conform to any/all Federal, Provincial and/or Municipal regulations and/or guidelines that may apply.

Scott Kuntz seconded the motion – carried.

3.6 T00029 15D - Taff Architecture Ltd. – Link from Portable to School & New Washrooms – “CS”

P. Salvatore presented Development Permit T00029 15D submitted by Taff Architecture to build a link from the Portable classroom to the school and build new washrooms in the library at 1050 12 Avenue Se, Plan 3734JK; Block 1; Lot 10.

P. Salvatore advised this permit is being submitted by J.V. Javier, Taff Architecture to provide a link from the Portable classroom that is currently in place to the school and to build new washrooms in the library.



DRUMHELLER

COMMUNITY SERVICES

Agenda Item # 5.2.1



MPC discussion noted there is nothing inconsistent with placing of the portable and this is the first significant change in upgrades for the Greentree School since it was built.

Motion: Scott Kuntz moved Development Permit T00029 15D submitted by Taff Architecture Ltd. to link the portable classroom to the school and build new washrooms in library at 1050 12 Avenue SE, Plan 3734JK; Block 1; Lot 10 Drumheller be approved.

1. Development shall conform to Land Use Bylaw 10-08.
2. Development shall conform to the Town of Drumheller Community Standards Bylaw (16-10).
3. All necessary permits (building, electrical, plumbing, etc) to be in place prior to any construction/installations.
4. All contractors and/or sub-trades to possess a valid Town of Drumheller Business License.
5. Development to conform and meet the requirements of the Regional Health and Fire Authority.
6. Applicant to ensure authorization from the property owner is obtained prior to any renovation/modification.
7. Construction shall be in conformance with the Alberta Building and Fire Codes.
8. Construction shall be in accordance with submitted site plan.
9. If the holder of the permit wishes to make any change in the proposed development that departs from the description in the application or from any other condition or restrictions imposed, the holder of the permit must obtain prior permission of the Development Officer/Municipal Planning Commission. An additional development permit application may be necessary.
10. Applicant to ensure any/all modifications to water/sewer services to the satisfaction of the Town of Drumheller. Please contact Utilities Manager at 403-823-1330 for approval and specifications.
11. Garbage and waste materials must be stored in weather proof and animal proof containers and screened from adjacent sites and public thoroughfares. Separate containment must be provided for the disposal and recycling of cardboard materials.
12. Development to conform to any/all Municipal, Provincial and Federal regulations and/or legislation that may apply.

Sharel Shoff seconded the motion – carried.

4.0 Palliser Regional Municipal Services

B. Wiebe explained Land Use Bylaw Amendments went to Council Monday, May 4, 2015 and there was a concern with the addition of further potential assessments that could be requested as part of an application process where the development authority felt that specific risks needed to be addressed. As a result none of the amendments were passed.

MPC discussion followed. The question was asked whether one amendment can be taken out and could we carry forward with the balance of the amendments. It was discussed that due diligence must be followed and the MGA is needed to be followed and it would be MPC's job to go through and analyze. How do we get the amendments back on track and properly address the chemical storage issue. Further analysis of practices in other municipalities will be provided for review.



5.0 Other Discussion Items

6.0 Adjournment – Meeting adjourned by S. Francis at 1:30 pm.

Chairperson

Development Officer



National Collaborating Centre
for Environmental Health

Centre de collaboration nationale
en santé environnementale

FEBRUARY 2014

Community Water Fluoridation in Canada – Trends, Benefits, and Risks

Julie Stoneman,¹ Lauren Wallar,² and Andrew Papadopoulos³

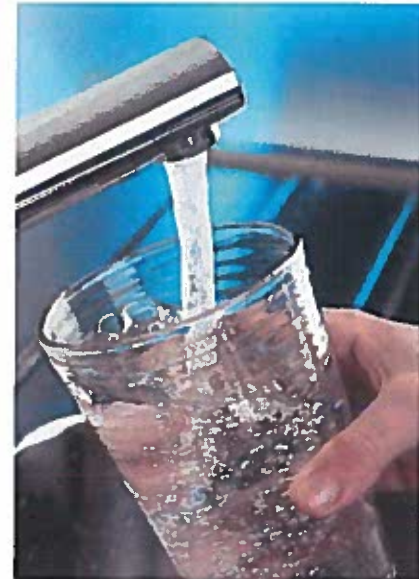
Summary

- Fluoride has been added to public drinking water in Canadian communities since the 1940s as a means of preventing tooth decay.
- Dental fluorosis is a known adverse effect of excessive fluoride exposure during tooth formation. Fluorosis ranges from barely noticeable whitish striations in the enamel to severe pitting and brownish staining. In general, the prevalence of dental fluorosis in communities with water fluoridation is higher in comparison to non-water fluoridated communities.
- No evidence was found for an association between water fluoridation and any of the following adverse outcomes: bone mineral density, bone fractures, bone cancer, or cancer in other body tissues.
- The best available evidence supports the finding that water fluoridation reduces the prevalence of dental caries, although this benefit of fluoridation may be limited due to multiple sources of exposures to fluoride that are now available to the public.

¹ Master of Public Health Program, University of Guelph

² PhD Program, Department of Population Medicine, University of Guelph

³ Department of Population Medicine, University of Guelph



- Although many major health organizations support water fluoridation, the trend across Canadian communities has been a decreasing uptake in water fluoridation or discontinuation.

Introduction

Dental caries (i.e., tooth decay) is the demineralization and dissolution of the hard tissue of teeth.¹ It can result in loss of tooth structure and discomfort. If untreated, dental caries can lead to severe pain and to bacterial infection. Infection may result in loss of dental function and tissue necrosis, requiring tooth extraction, and may progress to acute systemic infection.² Inflammatory periodontal diseases have been associated with such chronic health conditions as cardiovascular disease, diabetes and rheumatoid arthritis, although these associations are inconclusive and remain under investigation.³

Fluoride is known to act in a variety of ways to prevent and arrest tooth decay.⁴ Topical mechanisms of fluoride include inhibiting

evidence
review

bacterial metabolism, inhibiting demineralization, and enhancing remineralization.⁴ Fluoride primarily affects the surface of the tooth after it has erupted, especially when low concentrations of fluoride are consistently maintained in the mouth.^{4,5}

Fluoride is found in all natural waters in varying concentrations.⁶ Community water fluoridation is the addition of a controlled amount of fluoride in public water supplies to promote health through the prevention of dental caries.⁷ In Canada, fluoride was first added to public drinking water in the 1940s to prevent tooth decay.⁸ As water fluoridation was shown to be effective in preventing and controlling dental caries, new products containing fluoride were developed, including toothpaste and mouth rinse.⁴ Additionally, processed beverages and food including tea now contain small amounts of fluoride, especially if they are processed with fluoridated water.⁴ Communities may also receive fluoride through the “halo” or “diffusion” effect from exposure to processed foods and beverages made from fluoridated water.⁹ As a result, Canadians have increased exposure to multiple sources of fluoride.

Community water fluoridation is recognized as the single most effective public health measure to prevent tooth decay and was listed by the Centers for Disease Control in the top ten greatest public health achievements of the 20th century.² Despite this success, the appropriateness of community water fluoridation is often the subject of intense public debate regarding its benefits or risks.^{7,8}

The purpose of this evidence review is two-fold: 1) Evaluate the literature on the health benefits and risks of community water fluoridation; and 2) Describe the current trends in Canada and identify gaps and lessons learned that will inform public health professionals.

Methods

A literature search was completed in March 2012 and May 2013 based on electronic resources available from the University of Guelph library and research and reports from national and international public health and dental organizations including the World Health Organization, Centers for Disease Control and Prevention, Health Canada, Public Health Agency of Canada, and the Canadian Dental Association. The inclusion criteria for the literature review addressed the following topics: mechanism for action of fluoride in oral health; benefits and health risks of water fluoridation; and cost-effectiveness and public opinion in Canada.

Seventy-one references were identified and 44 were included (see Appendix A).

Results and Discussions

Health Benefits

Studies have shown that fluoridated drinking water reduces the number of cavities in children's teeth.^{4,10-13} Early studies from the 1940s through the 1960s, including the original trials in Brantford, Ontario, showed the strongest effect of water fluoridation, in which dental caries were reduced by 50 to 60% in children.^{4,12} Since the 1970s, research on fluoridation has been complicated by the availability of other sources of fluoride. By the mid-1980s, the relative effectiveness of community water fluoridation had declined as studies found the difference in the prevalence of dental caries among those consuming fluoridated and non-fluoridated water had narrowed.^{4,14,15} Recent systematic reviews of studies on community water fluoridation noted relatively few high quality studies^{5,13} but concluded that the best available evidence supports water fluoridation reducing the prevalence of dental caries.^{5,11,13,16-18} It has been noted that the magnitude of the effect is not large in absolute terms, as described below.⁵

Children are the subjects for the majority of water fluoridation research studies. The meta-analysis by McDonagh et al. (2000) showed that water fluoridation reduced the average prevalence of dental caries in children by 14.6%.¹³ Oral health is determined by the total number of decayed, missing, or filled teeth (DMFT). A higher DMFT score of 2.25 teeth was found in control areas when compared to communities with fluoridated water systems, suggesting that fluoridation is associated with improvement in DMFT scores.¹³ Similarly, in a cross-sectional study of 16,508 Australian children from 2002–2005, an interaction effect was found in which water fluoridation reduced the impact of consumption of sugar-sweetened beverages on the frequency of dental caries.¹⁹

Griffin et al. (2007) evaluated studies on the effectiveness of water fluoridation in adult populations. The relative risk of caries in adults who were lifelong residents of fluoridated communities was 0.65 (95% CI: 0.49-0.87) compared to adults who were lifelong residents of non-fluoridated communities.²⁰ The preventable fraction was 27.2% (95% CI: 19.4%-34.3%) meaning approximately 27% of caries cases could have been prevented if community water was fluoridated compared to not being fluoridated.²⁰

From a public health perspective, an advantage of providing fluoride at a population level is that it benefits all residents served by community water supplies.²¹ Additionally, fluoridation does not rely on individual compliance with health recommendations, and therefore removes barriers around poor compliance or limited access.¹¹ Population level intervention ensures all socioeconomic sectors of the population can be reached, notably those with limited access to preventative dentistry.¹¹ There is mounting evidence for the role of fluoridation in reducing disparities in caries that are related to the social determinants of health.^{5,13,15,22,23} However, greater efforts beyond community-level fluoridation are required to continue to reduce oral health inequalities.^{24,25}

Additionally, a number of studies show a positive cost-benefit analysis for community water fluoridation. An economic evaluation combining eleven studies which had used cost benefit, cost effectiveness or cost utility analyses, concluded that fluoridation of community water is a cost-saving intervention.²⁶

Health Risks and Concerns

Fluorosis

The known adverse effects of excessive fluoride exposure (from drinking water, or in combination with exposure to fluoride from other sources) range from mild dental fluorosis to crippling skeletal fluorosis.⁶

Dental fluorosis is a set of defects of enamel associated with hypoplasia or hypomineralization of dental enamel and dentine as a result of excessive ingestion of fluoride during tooth formation.⁵ Fluorosis ranges from barely noticeable whitish striations in the enamel to severe pitting and subsequent staining (brownish discolouration).⁵ There are no health concerns associated with mild fluorosis.^{27,28} The majority of dental fluorosis is categorized as very mild or mild and is not considered to be of aesthetic concern.^{11,16} Moderate to severe fluorosis can reduce tooth aesthetics due to the pitting and staining of the tooth surface.¹¹ Severe fluorosis can negatively affect tooth quality and function.²⁹

Dental fluorosis only occurs during development of the enamel and becomes apparent upon eruption of the teeth; therefore the risk period for fluorosis is usually limited to children aged eight and younger.⁴ The development of fluorosis is strongly associated with cumulative fluoride intake during enamel development.^{4,13}

Severity of fluorosis depends on the dose, duration, and timing of fluoride intake.⁴ The excessive use of multiple dental products containing fluoride (e.g., toothpastes and mouth rinses), infant formula with fluoride, and fluoride dietary supplements are all risk factors for fluorosis.^{5,15}

Dental fluorosis is more prevalent in communities with fluoridated water compared to those without fluoridated water. Dental fluorosis has generally increased since the 1950s, with non-water fluoridated communities having the larger increase.^{5,30,31} A systematic review by McDonagh et al. (2000) found the odds of very mild through severe fluorosis was 2.05 times higher in fluoridated compared to non-fluoridated areas (95% CI: 1.75-2.39) and the odds of fluorosis of aesthetic concern in fluoridated areas was 2.29 times greater than non-fluoridated areas (95% CI: 1.68-3.12).³² For example, a 1990 study of Quebec adolescents, aged 11–17 years, living in fluoridated Trois-Rivières had a higher prevalence of dental fluorosis (45.6–58.0%) compared to adolescents living in non-fluoridated Sherbrooke (30.1–31.1%).³³ Identified risk factors were consumption of fluoridated water and fluoride tablets.³³ However, the 2007 Health Canada expert review states, “The actual prevalence of moderate dental fluorosis in Canada is low, and all evidence suggests that since 1996 there has been an overall decreasing trend of dental fluorosis in Canada.”³⁴ However, Health Canada did not make reference to this claim in the 2010 technical document for fluoride.²⁷

Skeletal fluorosis is a crippling disease associated with chronic exposure of ≥ 10 mg of fluoride per day for at least 10 years.⁵ Skeletal fluorosis is not a public health concern in Canada, as skeletal fluorosis is extremely rare in North America.²⁸

Other Health Concerns

Fluoride (like many other nutrients and substances) is an acute poison in large doses; however, toxic levels cannot be reached by drinking fluoridated water.⁵ In a review that included both acute and chronic effects, the Federal-Provincial-Territorial Committee on Drinking Water within Health Canada concluded in 2010 that the current maximum acceptable concentration of 1.5 mg of fluoride per litre of drinking water is unlikely to cause adverse health effects, including cancer, bone fracture, immunotoxicity, reproductive/developmental toxicity, genotoxicity, and/or neurotoxicity.²⁷ The most recent literature and systematic reviews of water fluoridation and health effects which assessed primarily observational studies published between 1944 and 2006

also found no compelling, consistent evidence for the association between water fluoridation and any of the following adverse outcomes: bone mineral density, bone fractures, or cancer in bones or other body tissues.^{5,11,13,16}

The systematic review by McDonagh et al. found the validity of most of the studies on fractures related to exposure to fluoride was low and a meta-analysis suggested no association between community water fluoridation and hip fracture incidence. The evidence on other bone outcomes was extremely limited.¹³

McDonagh et al. evaluated 26 studies in a systematic review that examined the association between exposure to fluoridated water and cancer incidence and mortality. All the studies were rated as low or moderate quality.¹³ Overall, the review found no clear association between water fluoridation and overall cancer incidence or mortality, bone cancers, or thyroid cancer.¹³ This finding supports a previous literature review of studies from 1994 to 1999 which concluded that "there is no reason to believe that exposure to fluoridated water increases the risk of cancer in the bones or other body tissues."⁵ More recently, an ecological study of osteosarcoma incidence rates between 1999 and 2006 in American children and adolescents aged 5–19 years found no association with community fluoridation status within sex- and age-specific categories.³⁵

According to McDonagh et al., the quality of studies on water fluoridation and mental health outcomes such as IQ, impaired mental functioning, and Alzheimer's disease was low, and it was concluded that there was insufficient evidence on any particular neurocognitive outcome to conclude there was any effect from water fluoridation.¹³

Current Status in Canada

1. Trends

Some major health organizations that support drinking water fluoridation include: The World Health Organization; Centers for Disease Control; Health Canada; Public Health Agency of Canada; Canadian Dental Association; and Canadian Medical Association.^{4,10,38-39}

In Canada, provincial and territorial governments regulate the quality of drinking water in their jurisdictions. The fluoridation of drinking water supplies is a decision that is made by each municipality, in

collaboration with the appropriate provincial or territorial authority. This decision may also be taken in consultation with residents, often in the form of a referendum or plebiscite.¹⁰ Often the issue of fluoridation arises when local councils must make a decision about updating the water treatment and water fluoridation infrastructure.^{40,41}

An expert panel convened by Health Canada in 2007 recommended adopting a level of 0.7 mg/L as the optimal target concentration for fluoride in drinking water, which would prevent excessive intake of fluoride through multiple sources of exposure.³⁴ As of 2010, Health Canada recommends the optimal concentration of fluoride in drinking water of 0.7 mg/L to promote dental health, a reduction from the previous acceptable level of 1.5 mg/L.¹⁰

Data from 2007 show that 45% of Canadians receive fluoridated water from their community water supply. This percentage varies widely across provinces and territories from zero percent in Yukon and Nunavut to 76% in Ontario (see Appendix B).⁴² In an examination of Canadian water fluoridation history, Carstairs (2010) noted that historically, fluoridation was more likely in provinces where the decision to fluoridate was left to the municipality, and a referendum was not required.⁴³ Wealthier provinces with bigger cities were more likely to fluoridate their water supply than poorer provinces with a large rural population, in part due to cost effectiveness.⁴³ In provinces with a strong health food movement (including Quebec and British Columbia) fluoridation of community water is less likely to be accepted.⁴³

Between 2005 and 2007, the percentage of Canadians who had access to fluoridated drinking water increased from 42.6 to 45.1%.⁴² Since 2007, a number of large cities have discontinued fluoridation, including Quebec City, Calgary, Waterloo, and Moncton. The trend in Canada has been a decreasing uptake in water fluoridation.¹² On the other hand, some cities have recently voted in favour of continuing fluoridation, including Toronto, Hamilton, and Lethbridge. (See Appendix C).

2. Public Opinion

A 2009 study by Quiñonez and Locker examined public opinions of community water fluoridation in Canada using a national telephone interview survey (participation rate of only 3% based on random digit dialling).⁴⁴ Although the study sample was not necessarily representative, 45% of adult respondents surveyed had heard or read about community water

fluoridation and of those that knew about fluoridation, 80% understood its intended use and 60% believed it was both safe and effective. Notably for public health, 62% supported the idea of having fluoride added to their local drinking water.⁴⁴ Respondents with higher income and those who have had regular dentist visits are more likely to support fluoridation. Those with children and those who had public dental insurance were less likely to support fluoridation.⁴⁴

3. Opposition to Fluoridation

In Canada, the decision to implement or discontinue water fluoridation is often put to a referendum or plebiscite (a direct vote for all members of the electorate on an important public question). Plebiscites are more likely to fail than pass, not only due to the issue of fluoridation itself but also due to the nature of plebiscites, which are most often defeated due to poor voter turnout.¹² Opposition to water fluoridation may have a scientific base or be an ethical issue.

Opponents to fluoride argue that the effectiveness of water fluoridation to prevent dental caries is questionable.^{8,45} Compared to the original studies done on water fluoridation, more recent studies are unable to show any significant effect of water fluoridation on dental caries when comparing to non-fluoridated communities.^{12,15} Canadians now have more sources of fluoride compared to 60 years ago. This complicates the research process to determine the effectiveness of water fluoridation.

Challengers of water fluoridation point out that there are alternative sources of fluoride individuals can add to their dental routine if they want to obtain exposure to fluoride (e.g., fluoride dietary supplements, home fluoridation units, fluoridated toothpaste, and fluoride topical application from the dentist).⁸ They also express concern about exposure beyond recommended maximum concentrations because of exposure to multiple sources.⁷

Opponents to fluoridation claim it causes harm to individuals. A known health consequence is fluorosis. Other health outcomes suspected to be associated with community water fluoridation include: heart disease, cancer, birth defects, kidney problems, skeletal changes, allergies, goiters, ulcers, anemia, and spontaneous abortion. However, these associations are not supported by the scientific literature.^{8,45}

Other arguments against adding fluoride to drinking water that do not relate to human health include the

following concerns: fluoride is toxic to the environment; fluoridation compromises the purity of our water because it is not natural; fluoridation is a violation of civil liberties and people should not have to consume a substance against their will, even if it has positive health benefits; and, anti-trust arguments against the government in general.⁸

Gaps

There are a number of current gaps in the literature concerning water fluoridation relevant to Canadian public health professionals:

- Given the increasing number of Canadian communities changing their fluoridation status, there is need for studies that follow the health status of the community before and after changes in water fluoridation.
- Epidemiological studies would benefit from better exposure assessment and estimates of body burden to fluoride from a variety of sources, including community water supplies, to ascertain whether recommended limits are exceeded.
- Research on the impacts of dental fluorosis on quality of life is needed.
- Case studies of effective public health communication campaigns regarding fluoridation in Canada are essentially non-existent in the published literature. With so many communities addressing the fluoridation issue in the past 10 years, and the expectation of this issue to continue, sharing communication and campaign strategies and results would benefit public health professionals.

Conclusion

Community water fluoridation is effective at preventing dental caries, although the magnitude of the effect of fluoridation on improving dental health appears to be diminishing due to multiple sources of fluoride, better dental care and personal oral hygiene. Although community water fluoridation is an effective method of removing variation in individuals' dental health behaviours and ensuring all members of the population have access to fluoride at a safe concentration, it will remain a public health issue due to ethical considerations and concerns of excessive exposures to fluoride.

Acknowledgements

We would like to thank Denis Allard, John Omura, Helen Ward, and Tom Kosatsky for their invaluable input and review of this document.

References

1. Levy M, Corbeil F. Water fluoridation: An analysis of the health benefits and risks. Institut National de Santé Publique du Québec; 2007.
2. U.S. Centers for Disease Control and Prevention. Achievements in public health, 1900-1999: fluoridation of drinking water to prevent dental caries. *MMWR Morb Mortal Wkly Rep.* 1999;48(41):933-40.
3. Otomo-Corgel J, Pucher JJ, Rethman MP, Reynolds MA. State of the science: chronic periodontitis and systemic health. *J Evid Based Dent Pract.* 2012;12(3 Suppl):20-8.
4. U.S. Centers for Disease Control and Prevention. Recommendations for using fluoride to prevent and control dental caries in the United States. *MMWR Morb Mortal Wkly Rep.* 2001;50(RR-14):1-59.
5. Locker D, Lawrence H, Jokovic A. Benefits and risks of water fluoridation: an update of the 1996 federal-provincial sub-committee report. University of Toronto. Faculty of Dentistry. Community Dental Health Services Research Unit; 1999.
6. Fawell J, Bailey K, Chilton J, Dahi E, Fewtrell L, Magara Y. Fluoride in drinking-water. London, UK: World Health Organization; 2006.
7. Truman BI, Gooch BF, Sulemana I, Gift HC, Horowitz AM, Evans CA, et al. Reviews of evidence on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries. *Am J Prev Med.* 2002;23(1 Suppl) 21-54.
8. Carstairs C, Elder R. Expertise, health, and popular opinion: debating water fluoridation, 1945-80. *Can Hist Rev.* 2008;89(3):345-71.
9. Griffin SO, Gooch BF, Lockwood SA, Tomar SL. Quantifying the diffused benefit from water fluoridation in the United States. *Community Dent Oral Epidemiol.* 2001;29(2):120-9.
10. Health Canada. Fluoride and human health. Ottawa, ON: Health Canada; 2010.
11. Murphy G, Cunningham J. Fluoridated water for cavity prevention: a review of the clinical-effectiveness, cost-effectiveness, and guidelines. Ottawa, ON: Canadian Agency for Drugs and Technologies in Health (CADTH); 2009.
12. McLaren L, McIntyre L. Drinking water fluoridation in Canada: Review and synthesis of published literature. Public Health Agency of Canada; 2011.
13. McDonagh MS, Whiting PF, Wilson PM, Sutton AJ, Chestnutt I, Cooper J, et al. Systematic review of water fluoridation. *BMJ.* 2000;321(7265):855-9.
14. Limeback H. A re-examination of the pre-eruptive and post-eruptive mechanism of the anti-caries effects of fluoride: is there any anti-caries benefit from swallowing fluoride? *Community Dent Oral Epidemiol.* 1999;27(1) 62-71.
15. Pizzo G, Piscopo MR, Pizzo I, Giuliana G. Community water fluoridation and caries prevention: a critical review. *Clin Oral Investig.* 2007;11(3):189-93.
16. Coleman K, Harvey C, Weston A. A systematic review of the efficacy and safety of fluoridation: part A: review methodology and results. Canberra (AU): National Health and Medical Research Council; 2007.
17. Rugg-Gunn AJ, Do L. Effectiveness of water fluoridation in caries prevention. *Community Dent Oral Epidemiol.* 2012;40 Suppl 2:55-64.
18. Slade GD, Sanders AE, Do L, Roberts-Thomson K, Spencer AJ. Effects of fluoridated drinking water on dental caries in Australian adults. *J Dent Res.* 2013;92(4):376-82.
19. Armfield JM, Spencer AJ, Roberts-Thomson KF, Plastow K. Water fluoridation and the association of sugar-sweetened beverage consumption and dental caries in Australian children. *Am J Public Health.* 2013;103(3):494-500.
20. Griffin SO, Regnier E, Griffin PM, Huntley V. Effectiveness of fluoride in preventing caries in adults. *J Dent Res.* 2007;86(5):410-5.
21. Petersen P. The world oral health report 2003: continuous improvement of oral health in the 21st century - the approach of the WHO Global Oral Health Programme. Geneva, Switzerland: World Health Organization; 2003.
22. Petersen PE, Kwan S. Equity, social determinants and public health programmes—the case of oral health. *Community Dent Oral Epidemiol.* 2011;39(6):481-7.
23. McGrady MG, Ellwood RP, Maguire A, Goodwin M, Boothman N, Pretty IA. The association between social deprivation and the prevalence and severity of dental caries and fluorosis in populations with and without water fluoridation. *BMC Public Health.* 2012;12:1122.
24. Griffin SO, Jones JA, Brunson D, Griffin PM, Bailey WD. Burden of oral disease among older adults and implications for public health priorities. *Am J Public Health.* 2012;102(3):411-8.
25. Watt RG. Social determinants of oral health inequalities: implications for action. *Community Dent Oral Epidemiol.* 2012;40 Suppl 2:44-8.

Agenda Item # 8.1.1

26. Goldsmith L, Hutchison B, Hurley J. Economic evaluation across the four faces of prevention: a Canadian perspective. Hamilton, ON: McMaster University Centre for Health Economics and Policy Analysis; 2006.
27. Federal-Provincial-Territorial Committee on Drinking Water. Guidelines for Canadian drinking water quality: Guideline technical document - Fluoride. Ottawa, ON: Health Canada; 2010.
28. Committee on Fluoride in Drinking Water of the National Research Council. Fluoride in drinking water: a scientific review of EPA's standards. Washington, DC: The National Academies Press; 2006.
29. Vieira AP, Hanocock R, Eggertsson H, Everett ET, Grynpas MD. Tooth quality in dental fluorosis genetic and environmental factors. *Calcif Tissue Int*. 2005;76(1):17-25.
30. Clark DC. Trends in prevalence of dental fluorosis in North America. *Community Dent Oral Epidemiol*. 1994;22(3):148-52.
31. Szpunar SM, Burt BA. Trends in the prevalence of dental fluorosis in the United States: a review. *J Public Health Dent*. 1987;47(2):71-9.
32. McDonagh M, Whiting P, Bradley M, Cooper J, Sutton A, Chestnutt I, et al. A systematic review of public water fluoridation. York, United Kingdom: University of York; September 2000.
33. Ismail AI, Brodeur JM, Kavanagh M, Boisclair G, Tessier C, Picotte L. Prevalence of dental caries and dental fluorosis in students, 11-17 years of age, in fluoridated and non-fluoridated cities in Quebec. *Caries Res*. 1990;24(4):290-7.
34. Levy S, Clark C, Tardif R, Levy M, Kumar J, Nantel A. Findings and recommendations of the fluoride expert panel (January 2007). Ottawa, ON: Health Canada; 2008.
35. Levy M, Leclerc BS. Fluoride in drinking water and osteosarcoma incidence rates in the continental United States among children and adolescents. *Cancer Epidemiol*. 2012;36(2):e83-8.
36. Petersen PE, Lennon MA. Effective use of fluorides for the prevention of dental caries in the 21st century: the WHO approach. *Community Dent Oral Epidemiol*. 2004;32(5):319-21.
37. Butler Jones D. Water fluoridation. Ottawa, ON: Public Health Agency of Canada; 2011.
38. Canadian Dental Association. CDA position on use of fluorides in caries prevention. Ottawa, ON: CDA; 2012.
39. Canadian Medical Association. Fluoridation. Ottawa, ON: CMA; 2011.
40. Clark DC, Hann HJ. A win for fluoridation in Squamish, British Columbia. *J Public Health Dent*. 1989;49(3):170-1.
41. Emerson B, Clark DC. The challenge of a fluoridation referendum: the results of a referendum in British Columbia. *Can J Public Health*. 1993;84(2):84-7.
42. Office of the Chief Dental Officer. Provincial and Territorial estimates for community water fluoridation coverage in 2007. Ottawa, ON: Health Canada; 2009.
43. Carstairs C. Cities without cavities: democracy, risk, and public health. *J Can Stud*. 2010;44(2):146-70.
44. Quiñonez CR, Locker D. Public opinions on community water fluoridation. *Can J Public Health*. 2009;100(2):96-100.
45. Armfield JM. When public action undermines public health: a critical examination of antifluoridationist literature. *Aust New Zealand Health Policy*. 2007;4:25.
46. Statistics Canada. Census Profile (Catalogue No. 98-316-XWE). Ottawa, ON: Government of Canada; 2011.

Appendix A – Methodology

A literature search was conducted in January and February 2012 and updated through to the beginning of May 2013. The electronic literature search primarily made use of the University of Guelph's "Primo Central" search engine. Key databases included PubMed, Wiley Online Library and CabDirect.

Search terms included iterations and synonyms of "drinking water fluoridation," "health impacts" and "Canada." Additional searches for fluoridation "cost-effectiveness" and "public opinion" were also conducted.

The literature reviewed for this report addresses the following topics only:

- Fluoride's mechanism of action in oral health
- Benefits of water fluoridation
- Health risks of water fluoridation
- Cost-effectiveness
- Public opinion in Canada and opposition to fluoride

Additionally, existing research and reports from leading organizations were accessed through the Internet to identify relevant data and research. Organizations searched included: the World Health Organization, the Center for Disease Control, Health Canada, Public Health Agency of Canada, and the Canadian Dental Association.

Reference lists from selected systematic reviews and studies included in this review were manually searched for additional relevant articles.

All papers identified by the search were initially screened for relevance using the title and/or abstract. Literature was restricted to only those written in the English language involving human subjects. There were no date limitations imposed, but more recent studies and reviews were favoured. There were no design limitations, but preference was for more rigorous study design and systematic reviews. Higher interest was paid to research from Canada; additionally, research from the United States of America, the United Kingdom, Australia and other similar countries were deemed to be relevant. Fifty-five references were found and thirty-seven were included.

All references obtained by the above methods were entered and managed in RefWorks and EndNote, web-based bibliographic management services (www.refworks.com) (www.myendnoteweb.com).

Appendix B: Provincial and Territorial Estimates for Community Water Fluoridation Coverage in 2007

Province/Territory	Total Population	Population with fluoridated water	Population without fluoridated water	Percent with fluoridated water	Percent without fluoridated water
British Columbia	4,113,000	152,241	3,960,759	3.7%	96.3%
Alberta	3,290,350	2,457,406	832,944	74.7%	25.3%
Saskatchewan	968,157	356,096	612,061	36.8%	63.2%
Manitoba	1,148,401	803,116	345,285	69.9%	30.1%
Ontario	12,160,282	9,229,015	2,931,267	75.9%	24.1%
Quebec	7,546,131	489,420	7,067,711	6.4%	93.7%
New Brunswick	729,498	188,607	540,891	25.9%	74.2%
Nova Scotia	913,462	519,031	394,431	56.8%	43.2%
Prince Edward Island	135,851	32,174	103,677	23.7%	76.3%
Newfoundland/Labrador	505,469	7,572	497,897	1.5%	98.5%
Nunavut	29,474	0	29,474	0.0%	100.0%
Northwest Territories	41,464	23,400	18,034	56.4%	43.6%
Yukon	30,372	0	30,372	0.0%	100.0%
Canada	31,611,911	14,258,078	17,364,803	45.1%	54.9%

This information was collected from Provincial or Territorial Environment Ministries and then verified by the Dental Directors of each province and territory. The Ministries of Environment provided detailed data on the community fluoridated, or the water plants well as population numbers.

Appendix C – Partial listing of municipalities from grey literature sources that have recently voted on fluoridation

Canadian cities that have discontinued fluoridation or voted against uptake since 2000:	Approximate Population ⁴
Athabasca, AB	3,000
Calgary, AB	1,215,000
Drayton Valley, AB	7,000
Slave Lake, AB	6,800
Taber, AB	6,800
Golden, BC	3,700
Kamloops, BC	85,000
Lake Cowichan and Williams Lake, BC	14,000
Churchill, MB	300
Dieppe, NB	23,000
Moncton, NB	70,000
Amherstburg, ON	21,000
Cobalt, ON	1,000
Dutton-Dunwich, ON	4,000
Dryden, ON	8,000
Lakeshore, ON	35,000
Thunder Bay, ON	146,000
Waterloo, St. Jacobs and Elmira, ON	113,000
Welland, Pelham, and parts of Thorold, ON	65,000
West Elgin, ON	5,000
Gatineau, QC	265,000
Quebec City, QC	516,000
Meadow Lake, SK	5,000
Some municipalities that have recently voted in favour of continuing fluoridation (2009 or more recent):	
Lethbridge, AB	83,000
Cape Breton, NS	102,000
Halton Region, ON	502,000
Hamilton, ON	520,000
Toronto, ON	2,615,000

⁴ Statistics Canada. 2011 Census Profile of Population collected from <http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E>⁴⁶

This document was produced by the National Collaborating Centre for Environmental Health at the British Columbia Centre for Disease Control, January 2014.

Permission is granted to reproduce this document in whole, but not in part.

Production of this document has been made possible through a financial contribution from the Public Health Agency of Canada through the National Collaborating Centre for Environmental Health.

Photo Credits: Juanmonino; licensed through iStockphoto

ISBN: 978-1-926933-62-7

© National Collaborating Centre for Environmental Health 2014

200 – 601 West Broadway
Vancouver, BC V5Z 3J2

Tel.: 604-829-2551

contact@ncceh.ca



National Collaborating Centre
for Environmental Health

Centre de collaboration nationale
en santé environnementale

To provide feedback on this document, please visit www.ncceh.ca/en/document_feedback

www.ncceh.ca

ORIGINAL ARTICLE

The economic value of Quebec's water fluoridation program

Eric Tchouaket · Astrid Brousselle · Alvine Fansi · Pierre Alexandre Dionne ·
Elise Bertrand · Christian Fortin

Received: 12 January 2013 / Accepted: 31 May 2013 / Published online: 26 June 2013
© The Author(s) 2013. This article is published with open access at Springerlink.com

Abstract

Aim Dental caries is a major public health problem worldwide, with very significant deleterious consequences for many people. The available data are alarming in Canada and the province of Quebec. The water fluoridation program has been shown to be the most effective means of preventing caries and reducing oral health inequalities. This article analyzes the cost-effectiveness of Quebec's water fluoridation program to provide decision-makers with economic information for assessing its usefulness.

Methods An approach adapted from economic evaluation was used to: (1) build a logic model for Quebec's water fluoridation program; (2) determine its implementation cost; and (3) analyze its cost-effectiveness. Documentary analysis was used to build the logic model. Program cost was calculated using data from 13 municipalities that adopted fluoridation between 2002

and 2010 and two that received only infrastructure grants. Other sources were used to collect demographic data and calculate costs for caries treatment including costs associated with travel and lost productivity.

Results The analyses showed the water fluoridation program was cost-effective even with a conservatively estimated 1 % reduction in dental caries. The benefit-cost ratio indicated that, at an expected average effectiveness of 30 % caries reduction, one dollar invested in the program saved \$71.05–\$82.83 per Quebec's inhabitant in dental costs (in 2010) or more than \$560 million for the State and taxpayers.

Conclusion The results showed that the drinking-water fluoridation program produced substantial savings. Public health decision-makers could develop economic arguments to support wide deployment of this population-based intervention whose efficacy and safety have been demonstrated and acknowledged.

E. Tchouaket (✉)
Department of Nursing, Université du Québec en Outaouais (UQO),
Saint-Jérôme Campus, Saint-Joseph Street, Room J-3204,
Saint-Jérôme, Quebec, Canada J7Z 0B7
e-mail: eric.tchouaket@uqo.ca

A. Brousselle
Community Health Sciences Department, Canada Research Chair
in Evaluation and Health System Improvement, Longueuil, Canada

A. Fansi
Institut National d'Excellence en Santé et Services Sociaux
du Québec, Montreal, Canada

P. A. Dionne
Research Centre of Charles-LeMoyne Hospital,
University of Sherbrooke, Longueuil, Canada

E. Bertrand
Public Health Directorate for the Laurentides Region, Laurentides,
Canada

C. Fortin
Ministry of Health and Social Services of Quebec, Québec, Canada

Keywords Water fluoridation · Dental caries · Logic model ·
Costs · Benefits · Cost-effectiveness

Background and problem

Dental caries is a disease that leads to demineralization and decay of the hard tissues of the tooth through the action of bacterial acids (Levy et al. 2007). In addition to causing suffering, it imposes an economic burden on both individuals and public health services. The population of Quebec, a Canadian province, is particularly affected; children between the ages of 5 and 8 years have up to 40 % more caries than do children in Ontario or the United States, and more than one-third do not meet the dental standards set by the World Health Organization (WHO) in 1979 (MSSS 2006). Quebec children's poorer dental health is partly due to the fact that the province's drinking water is much less fluoridated, with only 2.7 % of the population having access to voluntarily fluoridated

water in 2010 (as opposed to 7 % in 2006 and 12 % in 1993); that percentage is 70 % in Ontario and 75 % in the United States (INSPQ 2011). This situation is difficult to explain, given that the costs of installing equipment and of the supplies used in fluoridation are fully subsidized by Quebec's Ministry of Health and Social Services (MSSS).

Water fluoridation consists of adjusting the quantity of fluoride ions already present in drinking water by adding concentrated fluoride. Many studies and systematic literature reviews have demonstrated the beneficial effects of water fluoridation (American Dental Association 2005; Centre for Reviews and Disseminations 2000; McDonagh et al. 2000; MMWR 2001; Ahokas et al. 1999; Truman et al. 2002). A fluoride concentration in water of between 0.7 and 1.5 mg/L protects against dental caries while at the same time minimizing the risk of dental fluorosis (mild whitish spots that generally diminish over time) that can be caused by excessive fluoride (INSPQ 2011; Levy et al. 2007).

At the individual level, by reducing the prevalence of caries, fluoridation helps to improve chewing, enhance overall appearance, reduce tooth loss and use of dental prostheses, and improve health and quality of life, among other things (INSPQ 2011). Studies have also shown that water fluoridation significantly reduces repeat treatments each year over the course of a lifetime among persons already treated for caries. A reduction of 15 to 35 % in root caries has been observed among adults and the elderly living in communities where water is fluoridated (American Dental Association 2005; Centre for Reviews and Disseminations 2000; Griffin et al. 2007; MMWR 2001). In addition, comparisons of communities with and without water fluoridation have shown the former to have lower caries prevalence, ranging from 18 to 40 % for primary and permanent teeth in the general population (MMWR 2001). This reduction in prevalence is quite variable among children 5–12 years old, ranging from 5 to 60 % depending on the sociodemographic and socioeconomic characteristics of the population, with an average of 14.3 % (McDonagh et al. 2000; Ahokas et al. 1999).

In addition to its effects on individuals' dental health, the fluoridation of drinking water helps reduce social inequalities related to oral health (Levy et al. 2007). The benefits of fluoridation are very significant for people living in disadvantaged environments (Jones et al. 1997; Kumar et al. 1998; McLaren and Emery 2012; Provart and Carmichael 1995; Slade et al. 1996). In effect, since it is tap water that is fluoridated, this intervention reaches the entire population, including the poor, for whom other prevention measures are often not accessible (Akehurst and Sanderson 1994; Levy et al. 2007).

Several opponents of water fluoridation fear it could have harmful effects on the environment, wildlife, and vegetation, and also that it could raise blood levels of lead in children, as well as create other health problems such as bone cancer, etc.

However, these fears are not confirmed by current scientific knowledge (Macek et al. 2006; Schock et al. 2006; Osterman 1990; Pollick 2004; Reeves 1986; Tacoma-Pierce County Health Department 2002; Wallis et al. 1996). Thus, fluoridation of drinking water has been shown to be an effective and safe solution not only for improving dental health, but also for reducing oral health inequalities, as recommended by WHO and the Centers for Disease Control (Centre for Reviews and Disseminations 2000).

In this context, the MSSS's Public Health Directorate has been seeking to develop a solid argument incorporating economic information that could promote fluoridation to decision-makers, especially in the various Quebec municipalities targeted for the water fluoridation program. Demonstrating the cost-effectiveness of fluoridation would provide this solid argument to facilitate and encourage this intervention's implementation province-wide.

The objective of this study was to analyze the economic value and cost-effectiveness of the fluoridation of drinking water in Quebec. We present here the methodology used and the results obtained; we also discuss the significance and the limitations of the results, as well as possible implications of this research for public health policies in Quebec. This article will be of interest to public health decision-makers, as well as to the community of researchers working in dental health, public health, and economic evaluation.

Methodology

Given that traditional economic evaluation and cost-benefit analysis methods are not well suited to public health interventions, whose effects are spread out over time (Goldsmith et al. 2004), we used an economic evaluation approach that has been adapted and specially conceived for these types of interventions. This innovative approach combines validated methods borrowed from both program evaluation and cost-benefit economic evaluations. It consists of four steps: (1) building a logic model of the intervention; (2) estimating the intervention's implementation cost; (3) attributing a financial value to the benefits; and (4) evaluating cost-effectiveness in terms of a benefit-cost ratio.

Building a logic model of the water fluoridation program

In the field of program evaluation, building a logic model should be the first step in the evaluative process (Brousselle and Champagne 2011; Funnell and Rogers 2011; Rossi et al. 2004; Weiss 1998). The logic model is a schematic representation of the intervention's resources, activities, and effects.

Documentary analysis of the scientific literatures (Akehurst and Sanderson 1994; Bertrand et al. 2011; Griffin et al. 2007;

Jones et al. 1997; Kumar et al. 1998; McDonagh et al. 2000; Osterman 1990; Pollick 2004; Provart and Carmichael 1995; Quiñonez et al. 2005; Sköld et al. 2008; Slade et al. 1996; Truman et al. 2002; Wallis et al. 1996) and grey literatures (American Dental Association 2005; Brodeur et al. 1998; Brodeur et al. 1999; Brodeur et al. 2001; Centre for Reviews and Disseminations 2000; INSPQ 2011; Levy et al. 2007; Schock et al. 2006; MMWR Fluoride Recommendations Work Group 2001; Ahokas et al. 1999; Reeves 1986; Tacoma-Pierce County Health Department 2002) was used to develop the first version of the logic model. This model was then submitted to three experts in water fluoridation in Quebec for validation. Based on their feedback a new logic model was built, which was subsequently validated by the same experts.

Calculating the cost of the intervention

Data sources

Before presenting in detail the methods used to estimate the costs related to the water fluoridation program, we should point out that most of the data used for this calculation came from the 13 Quebec municipalities that voluntarily fluoridated their water between 2002 and 2010 as well as from two other municipalities that had only received infrastructure subsidies for fluoridation. These data came from MSSS databases. Only 2.7 % of Quebec's population had access to voluntarily fluoridated water in 2010. Table 1 presents the

Table 1 Municipalities with water fluoridation programs that were subsidized, with years of fluoridation and of infrastructure subsidies

Municipalities	Years of fluoridation	Years of infrastructure subsidies
Bécancour	2002–2010	^c
Côte-de-Beaupré ^a	^b	2008
Châteauguay	2002–2010	2005 and 2008
Dorval	2002; 2008–2010	2007
Fermont	2003–2010	^c
La Prairie	2002–2010	^c
Laval ^a	^b	1995 and 1999
Montmagny	2002–2010	^c
Pointe-Claire	2002–2010	2007
Québec	2002–2007	^c
Richmond	2009–2010	2006
Saint-Georges	2010	2009
Saint-Romuald	2003–2010	^c
Trois-Rivières	2002–2008	2010
Verchères	2005–2010	2005

^a Received only infrastructure subsidy for fluoridation

^b No fluoridation, Source: MSSS

^c No equipment subsidy

municipalities that implemented water fluoridation and were subsidized by the MSSS, the years of fluoridation and the years when infrastructure subsidies were received. The demographic data for the population of Quebec as a whole and broken down geographically for each municipality studied were collected from a database at the Institut de la statistique du Québec (ISQ 2011).

Estimation methods

The cost of the water fluoridation program in Quebec was estimated using the typology developed by the Institut National d'excellence en santé et services sociaux (INESSS) [National institute for health and social services excellence]. This cost was broken down into investment costs, fixed recurrent costs, and variable recurrent costs.

Investment costs The investment costs are the amounts of the subsidies allocated to nine municipalities for water fluoridation activities (Table 1). Based on MSSS recommendations, we considered that all the infrastructures would be depreciated degressively over 20 years from the date the subsidy was received. The investment costs were assessed in 2010 dollars, adjusted based on: (1) the annual rate of growth in the consumer price index (inflation rate); (2) the discount rate; and (3) the rate of inflation for dental products. Rather than calculate a summary discount rate incorporating all the above rates, which could potentially have introduced biases, we opted instead to estimate the investment costs by varying the discount rate using 3, 5, and 8 %. The 3 and 5 % rates are the discount rates suggested by the federal government of Canada, while 6 and 8 % rates are mentioned by the provincial government of Quebec (Montmarquette and Scott 2007); given the minimal difference between the 6 and 5 % rates, we opted to use the latter. Thus, for each municipality, we calculated the amount of the annual subsidies after degressive depreciation over 20 years. The amount obtained was then adjusted to 2010 dollars for each of the rates retained for this study, i.e., 3, 5 and 8 %.

Finally, we estimated the average cost per inhabitant by municipality (average weighted by the average size of the population of each municipality from 2002 to 2010) and for all of Quebec (average population of Quebec from 2002 to 2010).

Recurrent fixed costs Recurrent fixed costs are the amounts paid in salaries and fixed contractual costs for the use of the INSPQ public health laboratory for water fluoridation activities. Based on MSSS sources, the following costs were considered:

- The salary of a technician in each of the 13 municipalities with fluoridation, at \$35/h, 1 h/day, 365 days/year in 2010.

- The salary of a full-time MSSS consulting dentist, at \$79.10/h, 35 h/week for 44 weeks in 2010.
- The salary of a half-time INSPQ consulting dentist, at \$79.10/h, 17.5 h/week for 44 weeks in 2010.
- The salary of one consulting dentist serving 18 administrative regions of Quebec, at \$79.10/h, for one 7-h day per month, 12 times per year, in 2010.
- The costs for use of the public health laboratory (INSPQ) under a 2-year contract (2009–2010). These include the costs of monitoring (1) overall system performance, (2) fluoride levels in the networks, and (3) the source of the fluoride ions, as well as general costs and information system costs.

In the first case, the average costs per inhabitant were calculated based on the size of each municipality. In the four other cases, the average costs per inhabitant were calculated by dividing the total annual costs by the total population of Quebec in 2010.

Variable recurrent costs Variable recurrent costs were measured based on the amounts expended to purchase supplies used to fluoridate water in each of the 13 municipalities that participated in the program for at least 1 year between 2002 and 2010. First, all the amounts were converted to 2010 dollars for each of the rates of 3, 5 and 8 %. Then, the average costs per inhabitant for each municipality were calculated as a weighted average of the annual supply costs in relation to the annual size of the municipalities' populations from 2002 to 2010. Finally, the total average cost for all of Quebec in 2010 dollars was calculated by adding together all the costs for each municipality.

Estimate of the benefits associated with the water fluoridation program

Estimation methods

The estimated benefits were in fact the savings resulting from the reduction in the number of dental services related to caries, including travel costs and productivity. Dental services included all costs related to the treatments and repeat treatments expected to be required because of caries over the course of a lifetime.

Data sources

The data compiled to estimate the benefits of the Quebec's water fluoridation program were drawn mainly from the reports of three studies carried out in Quebec by Brodeur and colleagues on the oral health of children 5–8 years old, of children 11–14 years old, and of adults 35–44 years old

(Brodeur et al. 2001, 1999, 1998). These are the most recent studies done in Quebec in terms of oral health epidemiology. The prevalence data on caries were taken from the dmft and DMFT indices in those reports and compiled by age; dmft and DMFT indices express the number of primary or permanent teeth decayed (d or D), missing (m or M) or filled (f or F) in children and adults, respectively. The data on percentage of dental services utilization within the past year by age (percentage of the population having consulted) were also extracted from these reports. The demographic data for population estimates by age in Quebec were compiled from a Statistics Canada database (Statistics Canada 2011). Table 2 summarizes, by age groups, the data collected to estimate the benefits associated with water fluoridation in Quebec.

Costs of treatment for dental caries

Treatment of a tooth that is decayed, missing or filled due to dental caries requires a complete examination, the filling of a dental surface with an amalgam or composite material, and at least one round trip to the treatment centre (hospital or dental clinic). The costs associated with treatment were calculated taking into account all expenses related to each of these items by age group and accordance to the fees then in effect as set by the Régie d'Assurance Maladie du Québec (RAMQ) [Quebec Health Insurance Board] and the Association des chirurgiens-dentistes du Québec (ACDQ) [Quebec Association of Dental Surgeons]. Table 3 summarizes all the activities, their volumes, and the unit costs used to calculate expenses in each of the options for treatment of caries, by type of tooth and age group.

Cost associated with a complete examination The cost of a complete examination varies according to the type of tooth (primary or permanent) and the patient's age. For patients aged 9 years and under, a complete examination for a primary tooth was \$41.25 in 2006 according to the RAMQ schedule (RAMQ 2006). This rate is still in effect today. For permanent teeth in children aged 14 years and under, the cost was estimated at \$54.63 in 2011 by the ACDQ (ACDQ 2011). Finally, for children aged 15 years and older, as well as for adults, this cost was \$90 in 2011, again according to the ACDQ.

Cost related to filling a molar with an amalgam or composite material For temporary teeth in children aged 9 years and under, the cost of an amalgam filling on two surfaces for a primary molar was \$70.25 according to the RAMQ schedule, including the cost of asepsis (\$5.50). For permanent teeth in children aged 14 years and under, the cost of an amalgam or composite filling of two surfaces for a permanent molar was \$107.25. This cost was obtained by averaging the ACDQ (2011) costs of restoring two surfaces in amalgam (\$113) or

Table 2 Prevalence of caries, percentage of dental services utilization, and demographic data collected by age

Age (years)	Study years	Types of teeth	Population with at least one cavity (%)	Index of the average number of decayed, missing or filled teeth (dmft or DMFT) (A)	Percentage of dental services utilization within the past year (B)	Total population in Quebec in 2010 (C)	Estimated population consulting for a cavity during the past year D=(B x C)	Number of teeth restored E=(A x D)
5	1998	Primary	38.9	1.77	85.6	77,644	66,463.30	117,640.04
6	1998	Primary	46.4	2.24	85.3	77,540	66,141.60	148,157.18
7	1998	Primary	52.8	2.42	90.7	76,493	69,379.20	167,897.66
8	1998	Primary	58.2	2.83	90.8	77,436	70,311.90	198,982.68
Total 5–8 years						309,113	272,295.90	632,677.57
11	1996	Permanent	53.6	1.55	86.3	79,373	68,498.90	106,173.30
12	1996	Permanent	63.8	2.15	81.9	82,127	67,262.00	144,613.30
13	1996	Permanent	71.8	2.59	81.8	87,047	71,204.40	184,419.40
14	1996	Permanent	74.6	3.21	78.4	91,134	71,449.10	229,351.61
Total 11–14 years						339,681	278,414.40	664,557.60
Total 35–44 years	1994	Permanent	96	20	69	1,049,556	724,193.60	14,483,872.00
Total Quebec						7,905,679		

composite (\$152) and the RAMQ (2006) cost of restoring two surfaces in amalgam (\$82, including asepsis), giving a total of \$107.25, since some of the fillings were done in children below the age of 10 years and others in children age 10 years and over. For children over 14 years old, the price of a filling on two surfaces for a molar (averaging amalgam and composite) was \$132.50 (ACDQ 2011).

Cost of travel for a filling In travel costs, we included both the costs of transportation to the dental services centre and the costs related to loss of productivity due to caries. **Loss of productivity:** In Quebec, a filling is associated with a single complete examination. The estimated number of minutes for the examination and a return visit to fill a molar, including the wait times in the office for these two visits, was based on the results of a study conducted among Quebec dentists (Bertrand et al. 2011), which obtained an average of 85.3 min for an examination and filling. This time was doubled for patients over the age of 14 years, given that two visits are required. For a conservative estimate, we used the minimum wage rate of \$9.65/h to assess costs related to time spent in dental visits for examinations and restorations, both for adult patients and parents of children (Commission des normes du travail 2011). **Costs of transportation:** The same survey was used to determine the distance travelled by patients to get to a dental clinic. That survey calculated an average one-way distance of 8.04 km, which we multiplied by two for patients under 14 years of age, and by four for patients 14 years and older, given that the examination and filling required two round trips for that age group. Otherwise, average fuel consumption for vehicles in Quebec in 2007 was 9.04 L per 100 km (DesRosiers Automotive Consultants 2008), and the average price of a litre of regular gasoline in Quebec in 2010 was \$1.059 (Régie de l'énergie du Québec 2010). Finally, multiplying the average price of fuel by the number of kilometres travelled and the average fuel consumption of vehicles in Quebec, we obtained an average cost of transportation of \$2.90 for patients under 14 years of age and \$5.80 for patients 14 years and older. These costs were similar to the average public transportation fare in Quebec (\$2.75 per ride) in 2010 (Government of Québec 2010). Hence, given the minimal difference in the one-way cost of transportation whether patients used a car or not, we assumed all patients travelled by car.

Average cost of treatment per inhabitant for a decayed, missing or filled tooth, by age Finally, the average cost of treatment per inhabitant for decayed, missing or filled teeth in Quebec was estimated as follows. First, the total number of teeth restorations was estimated by multiplying the dmft or DMFT index value by the population examined who had used dental services in 2010, in each age group. Then, the total estimated cost for the treatment of decayed, missing or

Table 3 Fees for treatment of one cavity by type of tooth and age group

Option	Description	Quantification	Assigned value	Source
Primary teeth (children 8 years of age and under)	Complete examination	1	\$41.25	RAMQ (2006)
	Filling on 2 surfaces, amalgam, primary tooth	1	\$70.25	RAMQ (2006)
	Loss of productivity	85.3 min	\$9.65/h	Commission des normes du travail (2011)
	Transportation	32.16 km 9.04 L/100 km	\$1.059/L	Régie de l'énergie du Québec (2010)
Permanent teeth (children 14 years of age and under)	Complete examination	1	\$54.63	ACDQ (2011) RAMQ (2006) ACDQ (2011)
	Filling on 2 surfaces, amalgam/ composite, permanent tooth	0.963	\$107.25	RAMQ (2006)
	Loss of productivity	85.3 min	\$9.65/h	Commission des normes du travail (2011)
	Transportation	32.16 km 9.04 L/100 km	\$1.059/L	Régie de l'énergie du Québec (2010)
Permanent teeth (adults over the age of 14 years)	Complete examination	1	\$90	ACDQ (2011)
	Filling on 2 surfaces, amalgam/ composite, permanent tooth	6	\$132.50	ACDQ (2011)
	Loss of productivity	170.6 min	\$9.65/h	Commission des normes du travail (2011)
	Transportation	64.32 km 9.04 L/100 km	\$1.059/L	Régie de l'énergie du Québec (2010)

filled teeth was obtained by multiplying the total number of these teeth by the average cost per visit for treatment of a tooth, expressed in 2010 dollars. None of the fees were discounted because they had remained unchanged since that time. Finally, the average cost of treatment per inhabitant in Quebec in 2010 was calculated by dividing the total estimated cost by the total population in 2010.

Costs of repeat treatment of dental caries

The costs of repeat treatment by age group and for all of Quebec were estimated based on the assumption that every year 6.87 % of patients treated for dental caries undergo repeat treatment, up to the age of 81 years (Bertrand et al. 2011; Quiñonez et al. 2005; Sköld et al. 2008). Repeat treatments for primary teeth were considered to occur up to the age of 12 years. All costs were discounted using rates of 3, 5, and 8 %/year.

Benefits of the water fluoridation program due to reduction in dental caries prevalence

Financial benefits and losses were estimated by calculating the difference in dental care costs with and without the intervention. When this difference is positive, we refer to the result as a benefit. In other words, if the water fluoridation program leads to a reduction in dental caries, and thereby to a lowering of

costs for dental care related to treatments and repeat treatments for dental caries, then economic benefits will be observed. Given a reduction of X% of prevalence in caries due to a water fluoridation program, the benefit is calculated as follows: $Benefit = (1 - X\%) \times \text{total cost of dental care for treatment and repeat treatment}$. Since the results in the literature have been divergent, with demonstrated effectiveness of the water fluoridation program ranging from 1 to 50 % when comparing fluoridated and non-fluoridated regions, we carried out a sensitivity analysis to estimate the benefits by varying X % between 1 and 50 %.

Cost-effectiveness evaluation

The cost-effectiveness of the water fluoridation program was evaluated by comparing the benefits of the intervention to its costs. We included all the costs of the intervention; for the benefits, we retained only those indirect effects for which monetary values had already been set in the healthcare market. Indeed, it is not always necessary for the economic value of all effects to be calculated in order to reach a cost-effectiveness threshold.

The benefit-cost (B/C) ratio was calculated by age group and for all of Quebec. The B/C ratio provides information on the savings achieved for each dollar invested in the program in Quebec in 2010. The program is considered to be cost-effective if the B/C ratio is above 1. This ratio was calculated

by varying the percentage X of reduction in caries attributable to water fluoridation between 1 and 50 %. These percentages represent the levels of effectiveness reported in the literature when comparing reductions in dental caries between regions with and without fluoridation. Univariate and bivariate sensitivity analyses were also carried out, simultaneously varying the discount rate (3, 5, and 8 %) and the percentage of reduction in dental caries (X %). This produced a cost-effectiveness threshold.

Results

Result 1

Logic model for the intervention – water fluoridation program

Figure 1 presents the logic model for Quebec's water fluoridation program. This model clearly describes the intervention by presenting all of its resources, activities, and effects. In the grey boxes are the items that were included in calculating the intervention's cost-effectiveness.

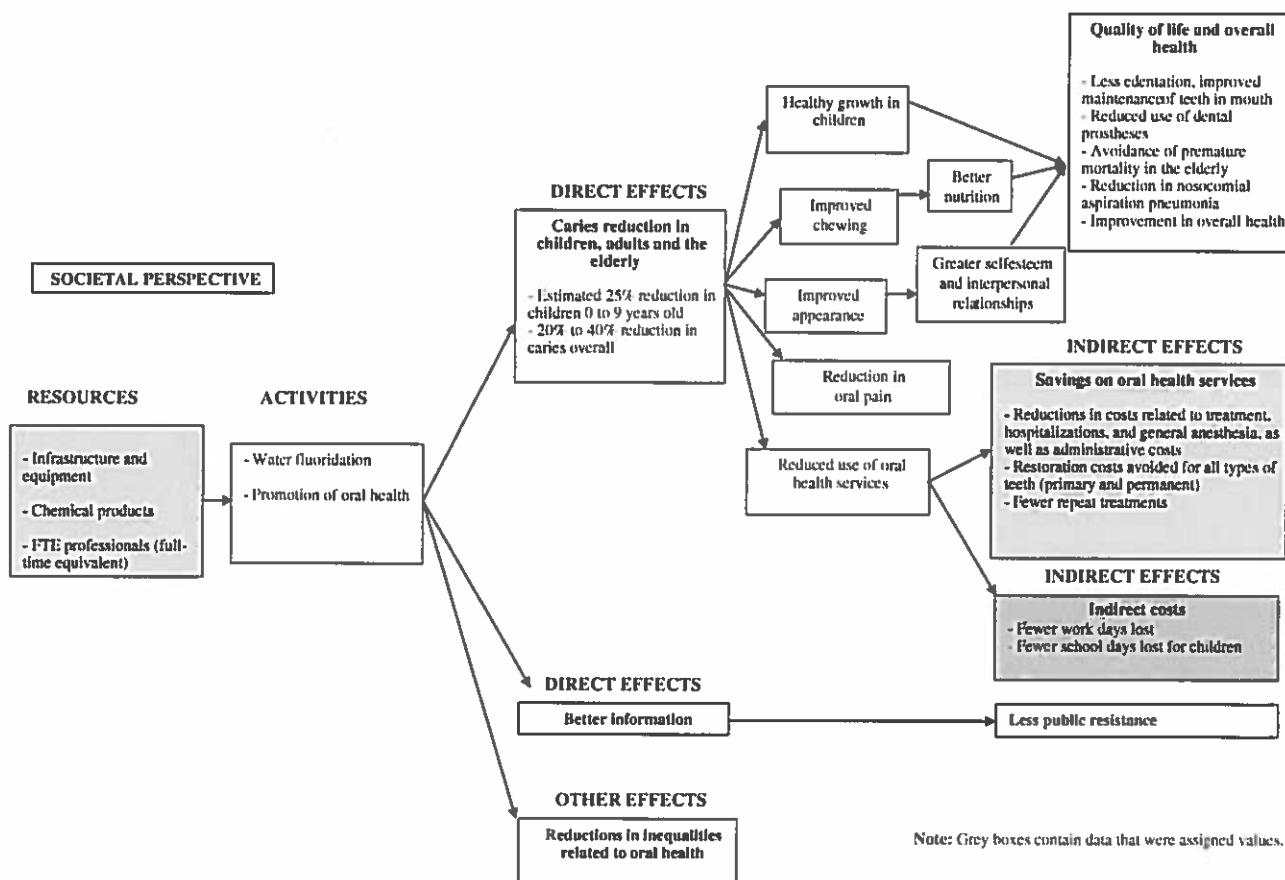


Fig. 1 Logic model of Quebec's water fluoridation program

Result 2

Cost of the water fluoridation program

The analyses showed the total average cost per inhabitant (total population of 7,907,375 in 2010) of the water fluoridation program in Quebec to be \$1.93, \$2.05, and \$2.25 (in 2010 dollars), based on discount rates of 3, 5, and 8 %, respectively.

Result 3

Benefits of the water fluoridation program

Before explaining the benefits of the water fluoridation program, it is important to mention the amount spent on dental care (treatments and repeat treatments) in the absence of any water fluoridation program. The analyses showed these expenses to be either \$532.08, \$532.87, or \$534.05 per inhabitant per year (2010), based on variations in inflation and discount rates of 3, 5, and 8 %, respectively.

Assuming the water fluoridation program reduces the prevalence of caries by X percent, ranging from 1 to 50 %, the benefits achieved for all of Quebec are presented in Table 4, based on discount rates of 3, 5, and 8 %. As an example, if the water fluoridation program reduces dental

Table 4 Savings per inhabitant (2010) by percentage of caries reduction due to the water fluoridation program and by discount rate

		Discount rates		
		3 %	5 %	8 %
Percentage of caries reduction due to the water fluoridation program	1 %	\$5.32	\$5.33	\$5.34
	15 %	\$79.81	\$79.93	\$80.11
	20 %	\$106.42	\$106.57	\$106.81
	25 %	\$133.02	\$133.22	\$133.51
	30 %	\$159.62	\$159.86	\$160.22
	35 %	\$186.23	\$186.50	\$186.92
	40 %	\$212.83	\$213.15	\$213.62
	50 %	\$266.04	\$266.43	\$267.03

caries by 30 % on average, as estimated by the MSSS, this would represent savings of more than \$159 per inhabitant in 2010 in Quebec.

Result 4

Cost-effectiveness of the water fluoridation program

Table 5 and Fig. 2 present the detailed results, based on the discount rates applied (3, 5, and 8 %) and reductions in dental caries attributed to the water fluoridation program ranging from 1 to 50 %. Sensitivity analyses showed that, if the water fluoridation program reduced dental caries by 1 %, one dollar invested in the fluoridation program would save \$7.32 to \$8.53 in dental care costs per inhabitant in 2010 (savings in costs for treatment and repeat treatments). Assuming the MSSS forecasts, which anticipate a 30 % reduction in dental caries due to water fluoridation, are achieved, each dollar invested in fluoridation would avoid a minimum of \$71 to \$83 (2010) per inhabitant, for total savings of more than \$560 million for the State and the population.

Table 5 Benefit-cost ratios by percentage of caries reduction and discount rate

		Discount rates		
		3 %	5 %	8 %
Percentage of caries reduction due to the water fluoridation program	1 %	8.53	8.03	7.32
	15 %	44.4	41.8	38.08
	20 %	57.21	53.86	49.07
	25 %	70.02	65.92	60.06
	30 %	82.83	77.98	71.05
	35 %	95.64	90.04	82.04
	40 %	108.45	102.1	93.03
	50 %	134.07	126.22	115.00

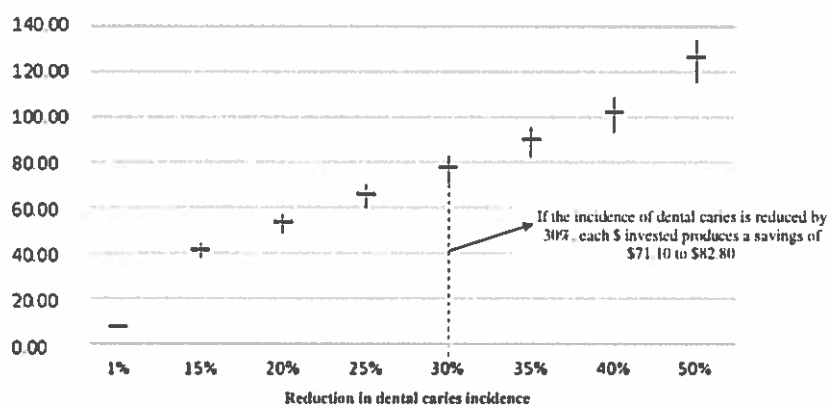
Our study showed that the water fluoridation program is cost-effective, and that this would be true even for a very conservative estimate of only a 1 % reduction in dental caries. These results were confirmed regardless of the inflation rates and discount rates used. Our results showed that this program would produce substantial savings if implemented in different municipalities across the province. This study, with its economic data, adds to the already well-documented conclusions on the effectiveness of the intervention both at the individual level, in reducing dental caries, and at the societal level, in reducing health-related social inequalities.

Discussion

Even though our methodological approach is quite different from those used in studies on this subject reported in the literature since the 1960s in contexts other than those of Canada and Quebec (Birch 1990; Davies 1973, 1974; Dowell 1976; Griffin et al. 2001; Hardwick 1965; Jackson 1987; Sanderson 1998; Sanderson and Wilson 1994; MMRW Fluoride Recommendations Work Group 2001), our results go in the same direction.

The cost of Quebec's water fluoridation program ranges from \$1.93 to \$2.25 (in 2010) per person (total population of almost 8 million). This cost appears high in comparison with that obtained by Ringelberg and colleagues (1992) in their study of 44 communities in Florida, in the US. However, the cost of water fluoridation there varied with community size. The average cost of fluoridation was \$2.12 per person in communities with 10,000 inhabitants, whereas in communities of between 10,000 and 50,000 it was only \$0.68, and in communities of more than 50,000 inhabitants it was even lower, at \$0.31. There are three possible key explanations for the higher costs in Quebec. The first is that all the municipalities with water fluoridation in 2010 had fewer than 50,000 inhabitants. The more populous municipalities, Quebec City and Trois-Rivières, stopped their programs in 2007 and 2008, respectively. The second possible explanation is that the salaries of municipal employees involved in sanitation activities may have been overstated, since water fluoridation activities are blended into their overall daily tasks. It was therefore difficult to isolate the actual time spent by these employees on the fluoridation of drinking water in their municipalities. The third possible explanation relates to the time devoted by the half-time INSPQ consulting dentist to water fluoridation activities in Quebec, which may be overstated. Even though the protocols call for an INSPQ consulting dentist to be involved in these activities, we were informed by various experts that this dentist devotes less time than envisioned to the drinking water fluoridation program.

Fig. 2 Benefit-cost ratio (B/C)



Finally, we deliberately decided to overestimate program costs whenever there was uncertainty, since our approach was aimed at testing the cost-effectiveness of the water fluoridation program and not at calculating all of its benefits. Only the economic benefits related to savings in treatments and repeat treatments were taken into account. The total savings would have been much greater if our calculations had included the costs of anaesthesia and hospitalizations associated with the treatment of dental caries complications, potential savings related to improved quality of life and overall health, and economic benefits due to reduced oral health inequalities, among others.

However, one limitation should be noted. This study used dental caries prevalence data that were more than a decade old (Brodeur et al. 2001; Brodeur et al. 1999; Brodeur et al. 1998). However, no population-based epidemiological study on dental caries has been carried out since then in Quebec. From the data in the Canadian Health Measures Survey (CHMS) done by Health Canada in 2010, the percentage of the Canadian population with at least one dental cavity has remained stable at 96 % for more than 20 years. We can reasonably assume that the prevalence of caries, in terms of the number of primary or permanent decayed, missing or filled (dmft or DMFT) teeth has remained stable or even increased. Even if the number of dmft or DMFT had decreased over time, the sensitivity analyses (Fig. 2) cover a broad spectrum of potential variation in dental caries in Quebec, thereby strengthening the robustness of the results.

Conclusion

We live in a society where, increasingly, economic data are used to justify the implementation of new interventions or to confirm their validity. This is the case, for instance, for the global health technology assessment movement. While not subject to the same evaluation processes as new drugs and technologies, public health is also under pressure to defend the economic value of its interventions. Therefore, demonstrating

the cost-effectiveness of public health interventions would constitute a solid argument for greater investment in this sector.

Public health interventions are not generally good candidates for traditional economic evaluation methods because of the nature of their effects, which are often spread out over the long term and have indistinct boundaries, since they involve many different sectors of activity (education, health, employment, etc.). The approach used here was designed to describe accurately the spectrum of impacts of public health interventions while at the same time offering relevant information for decision-making on resource allocation in the health-care system. The nature of the information provided by this type of analysis is different from what would be offered by traditional analyses: cost-effectiveness analysis would have compared different interventions aimed at improving dental health (e.g. milk fluoridation vs. water fluoridation); traditional cost-benefit analysis would have converted into monetary the direct health effects (e.g. attempting to assign a value to a healthy tooth). We worked with indirect effects related to treatment costs avoided rather than with direct effects related to tooth health, as the former already had an established monetary value in the healthcare market. In this way, we were able to circumvent the ethical and methodological pitfalls of traditional cost-benefit analyses.

The results delivered here on the cost-effectiveness of the drinking water fluoridation program provide directly relevant information to promote an intervention whose efficacy and safety have already been scientifically demonstrated, but which has not been implemented on a large scale in Quebec. This information constitutes a new argument that can be brought into the political arena of budget allocations. One question to which our analysis does not respond, however, is that of 'who pays and who receives'. In our analysis, we adopted a societal perspective that allowed us to track all the costs and effects of the intervention. However, if the government should decide to proceed, it would probably need to undertake new negotiations among (1) the economic beneficiaries of the intervention, that is, those who would pay less for dental treatment (individuals paying directly, private

insurers, the RAMQ), (2) those receiving less as a result of the intervention (dentists and dental health professionals), and (3) those who would fund the intervention (Ministry of Health, municipalities, and taxpayers). It is well known that one person's income is another person's expense, and as such, introducing this intervention, even if it is cost-effective, will have redistributive effects. This will likely be the next challenge facing proponents of this program. However, it might also be the redistributive effect of this relatively coercive public health measure that would trigger the decision to proceed with its large-scale deployment: water fluoridation, in contributing to everyone's oral health, has a major impact on reducing the social inequalities of health, an objective much sought-after but often difficult to achieve through public health policies.

Acknowledgements We would like to thank the Ministry of Health and Social Services (MSSS) of Quebec, which funded this project, as well as the Canadian Institutes of Health Research (CIHR) and the Fonds de recherche du Québec – Santé (FRQS) which fund the Canada Research Chair in Evaluation and Health System Improvement held by Astrid Brousselle and also funded the postdoctoral fellowships of Éric Tchouaket (4P Training Program: Prevention, Promotion and Public Policy, and PHIRNET: Population Health Intervention Research Network) and Alvine Fansi.

We also extend our thanks to the following experts for their counsel and generous collaboration and contributions: Ginette Lafontaine, Public Health Directorate for the Montérégie Region; Annie-Claude Voisine, MSSS; Caroline De Pokomandy-Morin, MSSS; Bernard Laporte, MSSS; and Lucie Desgagné, MSSS.

Conflict of interest The authors declare that they have no conflict of interest.

Open Access This article is distributed under the terms of the Creative Commons Attribution License which permits any use, distribution, and reproduction in any medium, provided the original author(s) and the source are credited.

References

- ACDQ (2011) Guide des tarifs et nomenclature des actes buccodentaires au premier janvier 2011. Association des Chirugiens Dentistes du Québec, Montreal
- Ahokas J, Demos L, Donohue DC, Killalea S, McNeil J, Rix CJ (1999) Review of water fluoridation and fluoride intake from discretionary fluoride supplements: Review for NHMRC. Royal Melbourne Institute of Technology, Department of Applied Chemistry, Key Centre for Applied Nutritional Toxicology, Monash University, Department of Epidemiology and Preventive Medicine, Melbourne, Australia. Available at: http://www.ada.org.au/app_cmplib/media/lib/0703/m50958_v1_nhmrc%20fluoride.pdf. Accessed 14 May 2012
- Akehurst RL, Sanderson DJ (1994) Cost-effectiveness in dental health: a review of strategies available for preventing caries. *J Med Econ* 7:43–54
- American Dental Association (2005) Fluoridation facts. American Dental Association, Chicago. Available at http://www.ada.org/sections/professionalResources/pdfs/fluoridation_facts.pdf. Accessed 14 May 2012
- Bertrand E, Mallis M, Bui NM, Reinhartz D (2011) Cost-effectiveness simulation of a universal publicly funded sealants application program. *J Public Health Dent* 71(1):38–45
- Birch S (1990) The relative cost effectiveness of water fluoridation across communities: analysis of variations according to underlying caries levels. *Community Dent Health* 7:3–10
- Brodeur JM, Payette M, Olivier M, Chabot D, Benigeri M, Williamson S (1998) Étude 1994–1995 sur la santé buccodentaire des adultes québécois de 35 à 44 ans. Government of Québec, Ministry of Health and Social Services, Québec. Available at <http://publications.msss.gouv.qc.ca/acrobat/f/documentation/1998/98-268.pdf>. Accessed 14 May 2012
- Brodeur JM, Olivier M, Payette M, Benigeri M, Williamson S, Bedos C (1999) Étude 1996–1997 sur la santé buccodentaire des élèves québécois de 11–12 ans et de 13–14 ans. Government of Québec, Ministry of Health and Social Services, Québec. Available at <http://publications.msss.gouv.qc.ca/acrobat/f/documentation/1999/99-235.pdf>. Accessed 14 May 2012
- Brodeur JM, Olivier M, Benigeri M, Bedos C, Williamson S (2001) Étude 1998–1999 sur la santé buccodentaire des élèves québécois de 5–6 ans et de 7–8 ans. Government of Québec, Ministry of Health and Social Services, Québec. Available at <http://publications.msss.gouv.qc.ca/acrobat/f/documentation/2001/01-222-01.pdf>. Accessed 14 May 2012
- Brousselle A, Champagne F (2011) Program theory evaluation: logic analysis. *Eval Program Plan* 34:69–78
- Centre for Reviews and Disseminations (2000) Fluoridation of drinking water: a systematic review of its efficacy and safety. University of York, UK. Available at: <http://www.york.ac.uk/inst/crd/fluores.htm>. Accessed 14 May 2012
- Commission des normes du travail (2011) Salaire, paie et travail : taux du salaire minimum. Government of Québec, Québec. Available at <http://www.cnt.gouv.qc.ca/salaire-paie-et-travail/salaire/>. Accessed 14 August 2012
- Davies GN (1973) Fluoride in the prevention of dental caries: a tentative cost-benefit analysis. *Br Dent J* 135:131–134
- Davies GN (1974) Cost and benefit of fluoride in the prevention of dental caries. Queensland University, Brisbane, Australia
- DesRosiers Automotive Consultants (2008) 2008 Canadian used vehicle report. DesRosiers Automotive Consultants, Richmond Hill, ON
- Dowell TB (1976) The economics of fluoridation. *Br Dent J* 140:103–106
- Funnell SC, Rogers PJ (2011) Purposeful program theory: effective use of theories of change and logic models. Jossey Bass, Indianapolis, IN
- Goldsmith LJ, Hutchison B, Hurley J (2004) Economic evaluation across the four faces of prevention: a Canadian perspective. McMaster University, Centre for Health Economics and Policy Analysis, Hamilton, ON
- Government of Québec (2010) <http://www.gouv.qc.ca/portail/quebec/international/general/quebec/informations/transports/commun/>. Accessed 18 September 2012
- Griffin SO, Jones K, Tomar SL (2001) An economic evaluation of community water fluoridation. *J Public Health Dent* 61(2):78–86
- Griffin SO, Regnier E, Griffin PM, Huntley V (2007) Effectiveness of fluoride in preventing caries in adults. *J Dent Res* 86(5):410–415
- Hardwick JL (1965) The value of fluoridation of water supplies. *Br Dent J* 119:529–534
- INSPQ (2011) Avis sur un projet de fluoration de l'eau. Government of Québec, Institut National de Santé Publique du Québec, Comité d'éthique de Santé Publique, Québec
- ISQ (2011) Données démographiques régionales. Government of Québec, Institut de la Statistique, Québec. Available at http://www.stat.gouv.qc.ca/donstat/societe/demographie/dons_regnl/regional/index.htm. Accessed 14 May 2012

- Jackson D (1987) Has the decline of dental caries in English children made water fluoridation both unnecessary and uneconomic? *Br Dent J* 162:170–173
- Jones CM, Taylor GO, Whittle JG, Evans D, Trotter DP (1997) Water fluoridation, tooth decay in 5 year olds, and social deprivation measured by the Jarman score: analysis of data from British dental surveys. *BMJ* 315:514–517
- Kumar JV, Swango PA, Lininger LL, Leske GS, Green EL, Haley VB (1998) Changes in dental fluorosis and dental caries in Newburgh and Kingston, New York. *Am J Public Health* 88:1866–1870
- Levy M, Corbeil F, Fortin C, Lamarre JR, Lavallière A, Schwartz S et al (2007) Fluoruration de l'eau : analyse des bénéfices et des risques pour la santé: avis scientifique. Développement des individus et des communautés. Government of Québec, Institut National de la Santé Publique du Québec, Québec
- Macek MD, Matte TD, Sinks T, Malvitz DM (2006) Blood lead concentrations in children and method of water fluoridation in the United States, 1988–1994. *Environ Heal Perspect* 114(1):130–134
- McDonagh MS, Whiting PF, Wilson PM, Sutton AJ, Chestnutt I, Cooper J et al (2000) Systematic review of water fluoridation. *BMJ* 321(7265):855–859
- McLaren L, Emery JCH (2012). Drinking water fluoridation and oral health inequalities in Canadian children. *Canadian J Public Health* 103(Suppl 1):S49–S56. Available at <http://www.ucalgary.ca/phirc/pdf/CJPH%202012%20McLaren%20&%20Emery.pdf>. Accessed 12 November 2012
- MMWR Fluoride Recommendations Work Group (2001) Recommendations for using fluoride to prevent and control dental caries in the United States. MMWR Recommendations and Reports, vol 50. Centres for Disease Control and Prevention, Morbidity and Mortality Weekly Report, Atlanta, GA. Available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5014a1.htm>. Accessed 14 May 2012
- Montmarquette C, Scott I (2007) Taux d'actualisation pour l'évaluation des investissements publics au Québec. Research report. Centre for Interuniversity Research and Analysis on Organizations (CIRANO), Montreal
- MSSS (2006) Plan d'action de santé dentaire publique 2005–2012. Government of Québec, Ministry of Health and Social Services, Public Health Directorate, Québec. Available at: <http://publications.msss.gouv.qc.ca/acrobat/f/documentation/2006/06-231-01.pdf>. Accessed 14 May 2012
- Osterman JW (1990) Evaluating the impact of municipal water fluoridation on the aquatic environment. *Am J Public Health* 80(10):1230–1235
- Pollick HF (2004) Water fluoridation and the environment: a current perspective in the United States. *Int J Occup Environ Heal* 10:343–350
- Provart SJ, Carmichael CL (1995) The relationship between caries, fluoridation and material deprivation in five-year-old children in County Durham. *Community Dent Health* 12:200–203
- Quiñonez RB, Downs SM, Shugars D, Christensen J, Vann WF Jr (2005) Assessing cost-effectiveness of sealant placement in children. *J Public Health Dent* 65(2):82–89
- RAMQ (2006) Manuel des dentistes (no. 200). Régie de l'assurance-maladie du Québec, mise à jour 43. http://www.ramq.gouv.qc.ca/fr/professionnels/manuels/200/000_complet_dentiste.pdf. Accessed 14 May 2012
- Reeves TG (1986) Water fluoridation: a manual for engineers and technicians. US Department of Health and Human Services, Public Health Service, Centres for Disease Control and Prevention, Atlanta, GA
- Régie de l'énergie du Québec (2010) Bulletin d'information sur les prix des produits pétroliers au Québec. Essence ordinaire – revue annuelle 2010 – ensemble du Québec. Government of Québec, Régie de l'énergie, Québec. Available at: http://www.regie-energie.qc.ca/energie/prodpetro/Essence_EnsQc_2010.pdf. Accessed 14 August 2012
- Ringelberg ML, Allen SJ, Brown LJ (1992) Cost of fluoridation: 44 Florida communities. *J Public Health Dent* 52:75–80
- Rossi PH, Lipsey MW, Freeman HE (2004) Evaluation: a systematic approach. Sage, Thousand Oaks, CA
- Sanderson D (1998) Water fluoridation: an economics perspective. York Health Economics Consortium, University of York, York, UK
- Sanderson D, Wilson A (1994) The cost-effectiveness of fluoridation. Report for Yorkshire Health and Trent Health. University of York, York, UK
- Schock MR, Metz DH, Dionysious D (2006) Predicting lead dissolution in drinking water distribution systems: the effect of fluoride additives on lead solubility and corrosion. Presentation at the AWWA Conference, Cleveland, OH
- Sköld UM, Petersson LG, Birkhed D, Norlund A (2008) Cost-analysis of school-based fluoride varnish and fluoride rinsing programs. *Acta odontologica Scandinavica* 66:286–292
- Slade GD, Spencer AJ, Davies MJ, Stewart JF (1996) Influence of exposure to fluoridated water on socioeconomic inequalities in children's caries experience. *Community Dent Oral Epidemiol* 24:89–100
- Statistics Canada (2011) Canada's population estimates. Government of Canada, Statistics Canada, Ottawa. Available at <http://www.statcan.gc.ca/daily-quotidien/120321/dq120321e-eng.htm>. Accessed 14 May 2012
- Tacoma-Pierce County Health Department (2002) Tacoma-Pierce County Health Department fluoridation resolution. WAC 197-11-960. Environmental checklist Tacoma-Pierce County Health Department, Tacoma, WA
- Truman BI, Gooch BF, Sulemana I, Gift HC, Horowitz AM, Evans CA et al (2002) Reviews of evidence on interventions to prevent dental caries, oral and pharyngeal cancers, and sports-related craniofacial injuries. *Am J Prev Med* 23(Suppl 1):21–54
- Wallis P, Gehr R, Anderson P (1996) Fluorides in wastewater discharges: toxic challenges to the St. Lawrence River Biological Community. *Water Qual Res J Canada* 31(4):809–838
- Weiss C (1998) Evaluation: methods for studying programs and policies, 2nd edn. Prentice Hall, Upper Saddle River, NJ



AltaGas Utilities Inc.
5509 45th Street
Leduc AB T9E 6T6

main 780.986.5215
fax 780.986.5220

rec'd Apr. 14
Agenda Item # 8.1.2

March 26, 2015

**His Worship, Mayor Terry Yemen & Council
Town of Drumheller
224 Centre Street
Drumheller, AB T0J 0Y4**

RECEIVED
MAY 1 2015
RECEIVED
APR 14 2015

Dear Mayor Terry Yemen & Council,

RE: Renewal of Natural Gas Distribution System Franchise Agreement

AltaGas Utilities Inc. (AUI) presently has the privilege of holding the natural gas franchise for the Town of Drumheller pursuant to an agreement effective December 2004. The term of this agreement is for a period of ten (10) years. The existing agreement between the Town of Drumheller and AUI utilized a gas franchise template negotiated between AUI, ATCO Gas (AG) and the Alberta Urban Municipalities Association (AUMA) which was approved by the Alberta Energy and Utilities Board in September of 2003.

As you are aware, at the request of the AUMA, the three parties mentioned above (AUI, AG and AUMA) have recently renegotiated a new standard natural gas franchise agreement template. AUI would like to take this opportunity to initiate the renewal process with the Town of Drumheller and invite Council to consider utilizing the template.

The new franchise agreement template was approved by the Alberta Utilities Commission, March 20, 2015 in **Decision 20069-D01-2015**. Please find attached for your review:

- A copy of the current franchise agreement.
- A copy of the new AUMA template.
- A summary of the differences between the current agreement and new AUMA template.

I will follow up with this letter to discuss how Council wishes to proceed with this process. In the interim, if you have any questions or concerns, please contact Irv Richelhoff at 780-980-7305 or, Mark Filteau at 780-980-6772 or by email at businessdevelopment@agutl.com.

Sincerely,

Irv Richelhoff
Supervisor, Business Development

Alberta Utilities Commission Approved Franchise Agreement Template
Comparison Between Existing Franchise Agreement & New Model Template

Agenda Item # 8.1.2

AUMA Model Agreement Paragraph	AUMA Model Agreement Paragraph #	Current Agreement Clause #	Reason for Change/Addition
	Preamble	Preamble	<ul style="list-style-type: none"> New defined term "Parties" added for clarity and reference.
Definitions	1 a - "Agreement"	Not specifically included	<ul style="list-style-type: none"> The term "Agreement" is capitalized in the existing template, but the word was never defined, this definition was added for clarity.
✓	1 b - "Alternative Course of Action"	13	<ul style="list-style-type: none"> Definition is included in paragraph 14 (c) of new agreement and clause 13 of existing template.
	1 c - "Commission"	1 b	<ul style="list-style-type: none"> Defined for clarity and reference. No material change to existing template.
	1 d - "Company"	1 c	<ul style="list-style-type: none"> No material change to existing template
	1 e - "Construct"	1 d	<ul style="list-style-type: none"> Revised for clarity and expanded to be more inclusive.
	1 f - "Consumer" or "Consumers"	1 e	<ul style="list-style-type: none"> Revised for clarity and uses "Municipal Service Area" a newly defined term to better define the "Consumer" in the "Agreement". No material change to existing template.
	1 g - "Core Services"	1 f	<ul style="list-style-type: none"> No material change to existing template.
	1 h - "Delivery Tariff"	1 g	<ul style="list-style-type: none"> Revised for clarity.
	1 i - "Electronic Format"	Not included	<ul style="list-style-type: none"> Added to allow for electronic formats to be utilized by the Parties to the agreement.
	1 j - "Extra Services"	1 h	<ul style="list-style-type: none"> No material change to existing template.
	1 k - "GUA"	1 a	<ul style="list-style-type: none"> Replaces "Act" in the existing template for clarity and reference.
	1 l - "Intended Time Frame"	13	<ul style="list-style-type: none"> Definition is included in paragraph 14 (c) of new agreement and clause 13 of existing template.
	1 m - "Maintain"	1.1 d	<ul style="list-style-type: none"> No material change to existing template, revised for clarity.
✓	1 n - "Major Work"	Not included	<ul style="list-style-type: none"> Similar meaning to definition in current electrical agreement. Amount has been left blank intentionally to allow for differences between municipalities.
	1 o - "MGA"	Not included	<ul style="list-style-type: none"> Defined for clarity and reference.
✓	1 p - "Modified Plans"	13 c ii	<ul style="list-style-type: none"> Definition is included in paragraph 14 (c) of new agreement and clause 13 c ii of existing template.
	1 q - "Municipality"	1.1 g	<ul style="list-style-type: none"> No material change to existing template.
	1 r - "Municipal Compensation"	18	<ul style="list-style-type: none"> Definition is included in paragraph 20 of new agreement and clause 18 of existing template. No material change to existing template.

Alberta Utilities Commission Approved Franchise Agreement Template
Comparison Between Existing Franchise Agreement & New Model Template

Agenda Item # 8.1.2

AUMA Model Agreement Paragraph	AUMA Model Agreement Paragraph #	Current Agreement Clause #	Reason for Change/Addition
✓	1 s - "Municipal Service Area"	Not specifically 1 m	<ul style="list-style-type: none"> Intent changed to reflect the area within the Municipality this agreement covers which may, or may not, be the entire municipality.
	1 t - "Municipal Property"	1 n	<ul style="list-style-type: none"> Minimal revision to reflect change in the definition of 1 s. No material change to existing template.
	1 u - "Natural Gas"	Not Included	<ul style="list-style-type: none"> Defined for clarity and reference.
	1 v - "Natural Gas Distribution Service"	1 i	<ul style="list-style-type: none"> No material change to existing template.
	1 w - "Natural Gas Distribution System"	1 j	<ul style="list-style-type: none"> No material change to existing template.
	1 x - "NOVA Gas Transmission Ltd. (NGTL)"	Not Included	<ul style="list-style-type: none"> Defined for clarity and reference.
	1 y - "Operate"	1 o	<ul style="list-style-type: none"> No material change to existing template.
	1 z - "Party" or "Parties"	Not Included	<ul style="list-style-type: none"> Defined for clarity and reference
	1 aa - "Plans and Specifications"	10 a	<ul style="list-style-type: none"> Added for clarity and reference along with the definition of "Major Work" Similar meaning to definition in current electrical agreement. No material change to existing template.
	1 bb - "Term"	1 p	<ul style="list-style-type: none"> No material change to existing template.
✓	1 cc - "Terms and Conditions"	1 q	<ul style="list-style-type: none"> Revised to show Commission approval required.
	1 dd - "Work"	1 r	<ul style="list-style-type: none"> No material change to existing template.
	1 ee - "Work Around Procedures"	13 c ii	<ul style="list-style-type: none"> Definition is included in paragraph 14 (c) of new agreement and clause 13 c ii of existing template.
Term	2 a	2	<ul style="list-style-type: none"> No material change to existing template.
	2 b	Not included	<ul style="list-style-type: none"> Included to clarify the expiry date of the agreement.
	2 c	2 b	<ul style="list-style-type: none"> No material change to existing template
Expiry of Term of Agreement	3 a	2 d	<ul style="list-style-type: none"> No material change to existing template.
	3 b	Not specifically included 2 c	<ul style="list-style-type: none"> Added to reflect MGA legislation.
	3 c	2 e	<ul style="list-style-type: none"> No material change to existing template.
	3 d	Not included	<ul style="list-style-type: none"> Added to allow municipality and utility ability to enter into a new template Agreement if approved by the Commission and mutually agreed on by the Parties.
Grant of Franchise	4 a - b	3 a	<ul style="list-style-type: none"> No material change to existing template. Information was reformatted for clarity.
	4 c	3 b	<ul style="list-style-type: none"> No material change to existing template.

Agenda Item # 8.1.2

**Alberta Utilities Commission Approved Franchise Agreement Template
Comparison Between Existing Franchise Agreement & New Model Template**

AUMA Model Agreement Paragraph	AUMA Model Agreement Paragraph #	Current Agreement Clause #	Reason for Change/Addition
Franchise Fee ✓	5 a – Calculation of Franchise Fee	4 a	<ul style="list-style-type: none"> No material change to existing template, revised for clarity.
	5 b – Adjustment to the Franchise Fee	4 a	<ul style="list-style-type: none"> Information reformatted for clarity Provides municipality with further latitude on timing of revisions to the franchise fee percentage with Commission approval.
	5 c – Notice to Change Franchise Fee	4 c	<ul style="list-style-type: none"> No change in meaning or intent.
	5 d – Payment of Franchise Fee	4 d	<ul style="list-style-type: none"> No change in meaning or intent.
	5 e – Franchise Fee Cap	4 b	<ul style="list-style-type: none"> No change to existing template.
	5 f – Reporting Considerations	4 e	<ul style="list-style-type: none"> No material change to existing template.
	5 g - Franchise Fees Collected from Nova Gas Transmission Ltd Customers	Not included	<ul style="list-style-type: none"> ATCO Gas only New clause to clarify the collection of Franchise Fees where NGTL customer is served from ATCO system.
Core Services	6	5	<ul style="list-style-type: none"> Further defined in Schedule "A". Allows for amendment of the core services on mutual agreement.
Provision of Extra Services	7	6	<ul style="list-style-type: none"> No material change to existing template, revised for clarity.
Municipal Taxes	8	7	<ul style="list-style-type: none"> No change in meaning or intent.
Right to Terminate on Default	9	8	<ul style="list-style-type: none"> No material change to existing template, revised for clarity.
Sale of Natural Gas Distribution System	10	9	<ul style="list-style-type: none"> No material change to existing template, revised for clarity.
Provision of Detailed Plans and Equipment	11 a – Detailed Plans	10 a	<ul style="list-style-type: none"> No material change to existing template.
	11 b – Provision of Equipment	10 b	<ul style="list-style-type: none"> No change in meaning or intent
Right of First Refusal to Purchase ✓✓	12 a - c	11 a - c	<ul style="list-style-type: none"> No material change to existing template.
	12 d	11 d	<ul style="list-style-type: none"> Utility has first right to match any offer the Municipality is willing to accept.
	12 e	11 e	<ul style="list-style-type: none"> No material change to existing template.
Construction and/or Maintenance of Natural Gas Distribution System ✓	13 a – Municipal Approval	12 a	<ul style="list-style-type: none"> New defined term "Major Work" added. Approval process outlined for clarity and reference. All utility work is currently approved by the Municipality.
	13 b – Restoration of Municipal Property	12 b	<ul style="list-style-type: none"> No material change to existing template.
	13 c – Urgent Repairs and Notification to Municipality	12 c	<ul style="list-style-type: none"> No change in meaning or intent.

Agenda Item # 8.1.2

**Alberta Utilities Commission Approved Franchise Agreement Template
Comparison Between Existing Franchise Agreement & New Model Template**

AUMA Model Agreement Paragraph	AUMA Model Agreement Paragraph #	Current Agreement Clause #	Reason for Change/Addition
✓	13 d – Company to Obtain Approvals from Other Utilities	12 d	• No change in meaning or intent.
	13 e – Revised Plans and Specifications	Not included	• Utilities agree to provide revised plans for all “Major Work” performed within the Municipality.
	13 f – Approvals	12 e	• No change in meaning or intent.
Responsibilities for Cost Relocation	14	13	• No change in meaning or intent.
Natural Gas Distribution System Expansion	15	14	• No material change to existing template.
Increase in Municipal Boundaries ✓	16	15	• “Municipal Service Area” a new defined term added for clarity and reference, meaning and intent not changed.
Joint Use of Municipal Rights-of Way	17 a – Municipal Use	16 a	• Revised to better reflect that it is the municipal right-of-way that can be utilized. • No other material changes to paragraph.
	17 b – Third Party Use and Notice	16 b	• Revised to better reflect that it is the municipal right-of-way that can be utilized. • No other material changes to paragraph.
	17 c – Cooperation	16 c	• Revised to better reflect that it is the municipal right-of-way that can be utilized. • No other material changes to paragraph.
	17 d – Payment	16 d	• Revised to better reflect that it is the municipal right-of-way that can be utilized. • No other material changes to paragraph.
	17 e – Provision of Agreements	16 e	• Municipality can request a copy of all agreements at its discretion.
Municipality as a Retailer ✓	18	Not included	• Agreement does not restrict Municipality
Reciprocal Indemnification and Liability	19 a	17 b	• No material change to existing template.
	19 b	17 a	• No material change to existing template.
Assignment	20	18	• No material change to existing template.
Notices	21	19	• Similar to current agreement with the addition of “Electronic Format” as a form of notice.
Interruptions or Discontinuance of Delivery Service	22	20	• No material change to existing template.
Dispute Settlement	23	21	• Additional clarification and new dispute settlement process provided.
Application of Water, Gas and Electric Companies Act	24	22	• No change in meaning or intent.
Force Majeure	25	23	• No change in meaning or intent.

Agenda Item # 8.1.2

**Alberta Utilities Commission Approved Franchise Agreement Template
Comparison Between Existing Franchise Agreement & New Model Template**

AUMA Model Agreement Paragraph	AUMA Model Agreement Paragraph #	Current Agreement Clause #	Reason for Change/Addition
Terms and Conditions	26	24	<ul style="list-style-type: none"> No material change to existing template.
Not Exclusive Against Her Majesty	27	25	<ul style="list-style-type: none"> No material change to existing template.
Severability	28	26	<ul style="list-style-type: none"> Agreement is subject to applicable laws in force.
Amendments ✓	29	Not included	<ul style="list-style-type: none"> Added for greater certainty and transparency. Ensures any changes are properly documented and regulatory approvals required to effect the change, if any, are obtained.
Waiver	30	Not included	<ul style="list-style-type: none"> Added for greater certainty and transparency. Ensures proper documentation of any change(s) from Agreement and preserves each contracting party's rights and interests in event of a waiver on one or more matters.
Confidentiality ✓	31	Not included	<ul style="list-style-type: none"> Added for greater certainty and transparency. Acknowledgement of the Municipalities' requirement to adhere to the Freedom of Information and Protection of Privacy Act.
Schedule "A" Core Services	1 – Delivery of Natural Gas	Schedule A - 1	<ul style="list-style-type: none"> No material change to existing template.
	2 – Installation of Facilities	Schedule A - 2	<ul style="list-style-type: none"> No material change to existing template.
	3 – Measurement	Schedule A - 3	<ul style="list-style-type: none"> Same meaning as in current agreement.
	4 – Emergency Response Procedures	Schedule A - 4	<ul style="list-style-type: none"> No material change to existing template.
	5 – Leak safety	Schedule A - 6	<ul style="list-style-type: none"> Utilities provide already to ensure safety of users. No material change to existing template.
	6 – Qualified Personnel	Schedule A - 7	<ul style="list-style-type: none"> Ensures the integrity of design. Addresses broad spectrum of qualifications required to design natural gas distribution systems.
	7 – Commission Filings	Schedule A - 8	<ul style="list-style-type: none"> As agreed to by utilities and AUMA. No material change to existing template.
	8 – Gas Distribution System Information	Schedule A - 1	<ul style="list-style-type: none"> Reporting will allow municipality to assess whether the utilities is providing reliable and safe service. No material change to existing template.
	9 – Annual Usage Reporting	Not included	<ul style="list-style-type: none"> Reporting will allow municipality to better assess consumption.
	10 – Annual Meetings	Schedule A - 10	<ul style="list-style-type: none"> Formalizes intent of existing template.

Agenda Item # 8.1.2

**Alberta Utilities Commission Approved Franchise Agreement Template
Comparison Between Existing Franchise Agreement & New Model Template**

AUMA Model Agreement Paragraph	AUMA Model Agreement Paragraph #	Current Agreement Clause #	Reason for Change/Addition
Schedule "B" Extra Services		Schedule B	<ul style="list-style-type: none"> Allows the utilities and the municipality freedom to negotiate extra services.

March 15, 2005

Alberta Energy and Utilities Board
Utilities Branch
Attention: Becky Torrance, Manager, Utilities Branch
10th Floor, 10055 – 106th Street
Edmonton AB T5J 2Y2

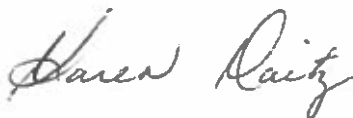
Dear Ms. Torrance:

**COMPLIANCE FILING RESPECTING APPLICATION # 1368651
FRANCHISE AGREEMENT BETWEEN ALTAGAS UTILITIES INC. AND THE TOWN
OF DRUMHELLER**

In accordance with the direction contained in Order U2004-440, attached is a copy of both the executed agreement and a certified true copy of by-law #14-04. AltaGas Utilities Inc. is filing these documents on behalf of the Town of Drumheller as per the Board's directive of December 2, 2004.

This letter confirms that the enclosed executed agreement does not include any changes in intent from the original agreement approved in Order U2004-440. Please note that a clearly defined map outlining the municipal franchise boundary has been added as Schedule C to increase the understanding of the "Municipal Area" as defined in the agreement. The only other changes made are those that were necessary to complete the agreement.

Yours truly,



Karen Raitz
Manager, Administrative Services

Enclosures

TOWN OF DRUMHELLER

BYLAW NUMBER #14-04

Of THE TOWN OF DRUMHELLER(the "Municipality")

A Bylaw of the Municipality to authorize the Mayor and Chief Administrative Officer to enter into an agreement granting ALTA GAS (the "**Company**"), the right to provide natural gas distribution service within the Municipality.

WHEREAS pursuant to the provisions of the Municipal Government Act S.A. 1994 c. M-26.1, as amended (the "**Act**"), the Municipality desires to grant and the Company desires to obtain, an exclusive franchise to provide natural gas distribution service within the Municipality for a period of 10 (Ten) years subject to the right of renewal as set forth in the said agreement and in the said Act;

WHEREAS the Council of the Municipality and the Company have agreed to enter into a Natural Gas Distribution System Franchise Agreement (the "**Agreement**"), in the form annexed hereto;

WHEREAS it is deemed that the Agreement would be to the general benefit of the consumers within the Municipality.

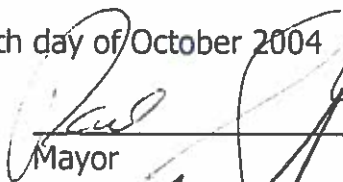
NOW THEREFORE the Council of the Municipality enacts as follows:

- 1) THAT the Natural Gas Distribution System Franchise Agreement, a copy of which is annexed hereto as Schedule "A", be and the same is hereby ratified, confirmed and approved, and the Mayor and Chief Administrative Officer are hereby authorized to enter into the Natural Gas Distribution System Franchise Agreement for and on behalf of the Municipality, and the Chief Administrative Officer is hereby authorized to affix thereto the corporate seal of the Municipality.

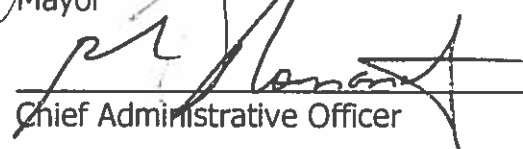
Agenda Item # 8.1.2

- 2) THAT the Natural Gas Distribution System Franchise Agreement annexed hereto as Schedule "A" is hereby incorporated in, and made part of, this Bylaw.
- 3) THAT the Council consents to the exercise by the Company within the Municipality of any of the powers given to the Company by the Water, Gas and Electric Companies Act, R.S.A. 1980 c. W-4, as amended.
- 4) THAT this Bylaw shall come into force upon the Natural Gas Distribution System Franchise Agreement being approved by the Alberta Energy and Utilities Board and upon being given third reading and finally passed.

Read a First time in Council assembled this 4th day of October 2004



Mayor

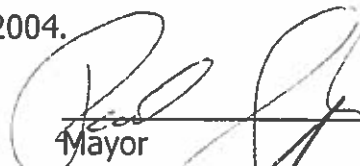


Chief Administrative Officer

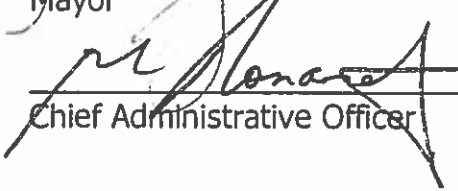
Read a Second time in Council assembled this 13th day of December, 2004.

Read a Third time in Council assembled and

Passed this 13th day of December, 2004.



Mayor (seal)



Chief Administrative Officer



certified true copy of original

Town of Drumheller

Agenda Item # 8.1.2

**Schedule "A" of
Town of Drumheller
Bylaw #14-04**

NATURAL GAS DISTRIBUTION SYSTEM FRANCHISE AGREEMENT

TABLE OF CONTENTS

1)	DEFINITIONS	1
2)	TERM	3
3)	GRANT OF FRANCHISE.....	4
4)	FRANCHISE FEE	5
5)	CORE SERVICES	6
6)	PROVISION OF EXTRA SERVICES	6
7)	MUNICIPAL TAXES.....	6
8)	RIGHT TO TERMINATE ON DEFAULT	6
9)	SALE OF GAS DISTRIBUTION SYSTEM	7
10)	PROVISION OF DETAILED PLANS AND EQUIPMENT	7
11)	RIGHT OF FIRST REFUSAL TO PURCHASE.....	8
12)	CONSTRUCTION/MAINTENANCE OF GAS DISTRIBUTION SYSTEM.....	9
13)	RESPONSIBILITIES FOR COST OF RELOCATION	11
14)	GAS DISTRIBUTION SYSTEM EXPANSION	14
15)	INCREASE IN MUNICIPAL BOUNDARIES	14
16)	JOINT USE OF GAS DISTRIBUTION SYSTEM	14
17)	RECIPROCAL INDEMNIFICATION AND LIABILITY	16
18)	ASSIGNMENT	17
19)	NOTICES.....	18
20)	INTERRUPTIONS OR DISCONTINUANCE OF DELIVERY SERVICE	19
21)	DISPUTE SETTLEMENT	20
22)	APPLICATION OF WATER, GAS AND ELECTRIC COMPANIES ACT.....	20
23)	FORCE MAJEURE	20
24)	TERMS AND CONDITIONS	21
25)	NOT EXCLUSIVE AGAINST HER MAJESTY	21
26)	SEVERABILITY	21

Schedule "A"

Schedule "B"

Schedule "C"

NATURAL GAS DISTRIBUTION SYSTEM FRANCHISE AGREEMENT

THIS AGREEMENT made effective the 13th day of December, 20 04.

BETWEEN:

Town of Drumheller, a Municipal Corporation in the Province of
Alberta (the "**Municipality**")

OF THE FIRST PART

- and -

AltaGas Utilities Inc., a corporation having its head office at the City
of Leduc, in the Province of Alberta (the "**Company**")

OF THE SECOND PART

WHEREAS the Municipality desires to grant and the Company desires to obtain an exclusive franchise to provide gas distribution services within the Municipal Area on the terms and conditions herein contained;

NOW THEREFORE in consideration of the mutual covenants and promises herein contained, the parties hereby agree as follows:

1) DEFINITIONS

Unless otherwise expressly provided in this Agreement, the words, phrases and expressions in this Agreement shall have the meanings attributed to them as follows:

- a) "**Act**" means the *Gas Utilities Act* (Alberta) as amended;
- b) "**Board**" means the Alberta Energy and Utilities Board as established under the *Alberta Energy and Utilities Board Act* (Alberta), as amended;
- c) "**Company**" means the party of the second part to this Agreement and includes its successors and permitted assigns;
- d) "**Construct**" means and includes establish, construct, reconstruct, upgrade or extend any part of the existing Gas Distribution System or proposed Gas Distribution System;

- e) **“Consumer”** means any individual, group of individuals, firm or body corporate, including the Municipality, with premises or facilities within the Municipal Area that is provided with Gas Distribution Service by the Company;
- f) **“Core Services”** means all those services set forth in Schedule “A”;
- g) **“Delivery Tariff”** means the tariff prepared by the Company as revised or amended from time to time and approved by the Board on an interim or final basis, as the case may be, approving and authorizing the Company to provide the service of the delivery of natural gas to the Consumer;
- h) **“Extra Services”** means those services set forth in Schedule “B” that are requested by the Municipality on behalf of its citizens and provided by the Company in accordance with Article 7;
- i) **“Gas Distribution Service”** means the delivery of natural gas in accordance with the Company’s Delivery Tariff;
- j) **“Gas Distribution System”** means any facilities owned by the Company to provide Gas Distribution Service within the Municipal Area, and without limiting the generality of the foregoing, shall include all mains, pipes, conduits, valves and all other installations used and required for the purpose of delivering natural gas to the Consumer within the Municipal Area and includes any natural gas transmission lines owned by the Company within the Municipal Area;
- k) **“Maintain”** means to maintain, keep in good repair or overhaul any part of the Gas Distribution System;
- l) **“Municipality”** means the party of the first part to this Agreement;
- m) **“Municipal Area”** means the area within the Municipal Core along with those areas served by the Company under the approved rural franchise #606B and amendments thereto within the municipal boundaries of the Town as shown on the attached map marked Schedule “C”, as at the date of this Agreement, and as they may be otherwise increased contiguously herein;
- n) **“Municipal Core”** means the area within the boundaries of the former City of Drumheller, excluding only those lands within the former City served by the Big County Gas Co-op;
- o) **“Municipal Property”** means all property, including lands and buildings, owned, controlled or managed by the Municipality within the Municipal Area;

- p) **“Operate”** means to operate, interrupt or restore any part of the Gas Distribution System in a safe and reliable manner;
- q) **“Term”** means the term of this Agreement set out in Article 2;
- r) **“Terms and Conditions”** means the terms and conditions contained within the Delivery Tariff;
- s) **“Work”** means any work to Construct or Maintain the Gas Distribution System.

2) **TERM**

- a) This Agreement shall be for a term of 10 years, commencing on the first (1st) day of _____, 20____, or the first day after both the Board has approved this agreement and Council of the Municipality has passed third reading of the adopting bylaw #14-04, whichever day comes later.
- b) It is agreed that this Agreement supercedes and replaces any prior gas franchise agreements between the Municipality and the Company.
- c) Unless otherwise agreed in writing between the parties, during the first year following the expiration of the Term, all the rights and obligations of the parties under this Agreement shall continue to be in effect.
- d) Provided the Company gives written notice to the Municipality not less than twelve (12) months prior to the expiration of the Term of its intention to negotiate a new franchise agreement, at any time following the expiration of the Term, and if the Municipality has not provided notice to the Company to exercise its rights to purchase the Gas Distribution System, either party may submit any items in dispute pertaining to a new franchise agreement to binding arbitration by the Board.
- e) Commencing one year following the expiration of the Term, unless either party has invoked the right to arbitration referred to in sub-paragraph (d) above, or the Municipality has given notice to purchase the Gas Distribution System, this Agreement shall continue in effect but shall be amended to provide the following:
 - (i) Fifty (50%) percent of the franchise fee otherwise payable under this Agreement to the Municipality shall be held back and in trust in an interest bearing trust account by the Company, for the sole benefit of the Municipality. The trust money along with all accumulated interest shall be paid to the Municipality immediately upon execution of another Gas Franchise Agreement with the Company, or if the Municipality purchases the

Gas Distribution System, or if the Company transfers or sells the Gas Distribution System, or upon further Order of the Board.

3) GRANT OF FRANCHISE

- a) Subject to the terms and conditions hereof, the Municipality hereby grants to the Company the exclusive right within the Municipal Area to Construct, Operate, and Maintain the Gas Distribution System together with the exclusive right to use portions of roads, rights-of-way, and other lands owned, controlled or managed by the Municipality which have been designated by the Municipality for such use and which are necessary to Construct, Operate and Maintain the Gas Distribution System.

Subject to the terms hereof, the Municipality agrees that it will not, during the Term, grant to any other person, firm or corporation, the right to Construct, Operate and Maintain any gas distribution system nor the exclusive right to use the portions of the roads, rights-of-way and other lands owned, controlled or managed by the Municipality which have been designated by the Municipality for such use and which are necessary to Construct, Operate and Maintain a gas distribution system, for the purpose of delivering natural gas in the Municipal Area for Consumers, so long as the Company delivers to the Municipality and the Consumers their requirements of natural gas.

- b) The Company agrees to:
- i) bear the full responsibility of an owner of a natural gas distribution system and to ensure all services provided pursuant to this Agreement are in accordance with the Delivery Tariff, insofar as applicable;
 - ii) Construct, Operate and Maintain the Gas Distribution System;
 - iii) use designated portions of roads, rights-of-way, and other lands including other lands owned, controlled or managed by the Municipality necessary to Construct, Operate and Maintain the Gas Distribution System, including the necessary removal, trimming of trees, shrubs or bushes or any parts thereof; and
 - iv) use the Municipality's roads, rights-of-way and other Municipal Property granted hereunder solely for the purpose of providing Gas Distribution Service and any other service contemplated by this Agreement.

4) FRANCHISE FEE

a) Calculation of Franchise Fee

In consideration of the exclusive grant of franchise, the ability to use Municipal rights-of-way, and the mutual covenants herein, the Company agrees to pay to the Municipality a franchise fee. The parties agree that s. 360(4) of the *Municipal Government Act* RSA 2000 c. M-26, as amended, does not apply to the calculation of the franchise fee in this Agreement. For each calendar year the franchise fee will be calculated as a percentage of the Company's actual total revenue derived from the Delivery Tariff, including without limitation the fixed charge, base energy charge, demand charge but excluding the cost of gas (being the calculated revenues from the gas cost recovery rate rider or the deemed cost of gas) in that year for Gas Distribution Service within the Municipal Area. For the first calendar year or portion thereof of the Term of this Agreement, the franchise fee percentage shall be **twenty-seven (27%) percent**.

By no later than September 1 of each year, the Company shall: (i) advise the Municipality in writing of the total revenues that were derived from the Delivery Tariff within the Municipal Area for the prior calendar year; and (ii) with the Municipality's assistance, provide in writing an estimate of total revenues to be derived from the Delivery Tariff within the Municipal Area for the next calendar year.

By no later than November 15 of each year, the Municipality shall advise the Company in writing of the franchise fee percentage to be charged for the following year. Failing which notification, the franchise fee percentage shall remain unchanged.

b) Franchise Fee Cap

The franchise fee percentage shall not at any time exceed thirty five (35%) percent, unless there has been prior Board approval.

c) Notice to Change Franchise Fee

Prior to implementing any change to the franchise fee, the Municipality shall notify its intent to change the level of the franchise fee and the resulting effect that such change will have on an average residential customer's annual gas bill through publication of a notice once in the newspaper that has the widest circulation in the Municipal Area at least 45 days prior to implementing the revised franchise fee. A copy of the notice shall be filed with the Board.

d) Payment of Franchise Fee

Immediately upon the Municipality passing third reading of the applicable by-law approving this Agreement, the Company shall pay the franchise fee amount, billed to each Consumer, to the Municipality on a monthly basis within forty-five (45) days after billing for each Consumer.

e) Reporting Considerations

The Company shall provide to the Municipality along with payment of the franchise fee amount, the information containing total Delivery Tariff billed, the franchise fee percentage applied, the derived franchise fee amount, used by the Company to verify the payment of the franchise fee amount.

5) CORE SERVICES

The Company agrees to provide those Core Services to the Municipality as set forth in Schedule "A" and further agrees to the process contained in Schedule "A".

6) PROVISION OF EXTRA SERVICES

Subject to an agreement being reached, the Company agrees to provide to the Municipality those Extra Services, if any, as set forth in Schedule "B", as requested by the Municipality from time to time. The Company is entitled to receive from the Municipality a reasonable amount for full compensation for the provision of those Extra Services in accordance with Schedule "B".

Any breach by the Company for failing to provide any Extra Services contained in this Agreement shall not constitute a breach of a material provision of this Agreement for the purposes of Article 8.

7) MUNICIPAL TAXES

Amounts payable to the Municipality pursuant to the terms and conditions hereof shall be (without duplication) in addition to the municipal taxes and other levies or charges made by the Municipality against the Company, its land and buildings, linear property, machinery and equipment.

8) RIGHT TO TERMINATE ON DEFAULT

In the event either party breaches any material provision of this Agreement, the other party may, at its option, provide written notice to the party in breach to remedy such breach. If the said breach is not remedied within two (2) weeks after receipt of the written notice or such further time as may be reasonably required by the party in breach using best efforts on a commercially reasonable basis to remedy the breach, the party not in breach may give six (6) months notice in writing of the termination of this Agreement to the other party, and unless such breach is remedied to the

satisfaction of the party not in breach acting reasonably this Agreement shall terminate subject to prior Board approval.

9) SALE OF GAS DISTRIBUTION SYSTEM

Upon the expiration of the Term of this Agreement, or the termination of this Agreement pursuant to the terms and conditions hereof or by operation of law or order of a governmental authority or court of law having jurisdiction, the Municipality may, subject to the approval of the Board, (i) exercise its right to require the Company to sell to it the Gas Distribution System pursuant to the provisions of the *Municipal Government Act* (Alberta), as may be amended, where applicable, or (ii) if such right to require the Company to sell the Gas Distribution System is either not applicable or has been repealed, require the Company to sell to it the Gas Distribution System. If, upon the expiration of the Agreement, the parties are unable to agree on the price or on any other terms and conditions of the purchase, the unresolved matters shall be referred to the Board for determination.

10) PROVISION OF DETAILED PLANS AND EQUIPMENT

a) Detailed Plans

The Company agrees to provide to the Municipality for the Municipality's purposes only, the most current set of detailed plan sheets including as-built drawings and specifications showing the locations (excluding depth) and alignments of the Gas Distribution System, excepting service lines and installations on private property, according to the plan sheets in hard copy and in the Company's electronic form, together with as many prints of the overall Gas Distribution System as the Municipality may reasonably require. These plans and plan sheets shall be updated by the Company on at least an annual basis.

The Municipality shall upon reasonable request, provide to the Company any subdivision development plans of the Municipality in hard copy and in the Municipality's electronic form where available. The subdivision development plans are provided to the Company for the sole purpose of assisting the Company in delivering natural gas to the Consumer.

b) Provision of Equipment

The Company agrees to provide the Municipality's fire department with the equipment necessary for the operation of curb boxes and service valves so that in case of fire, the service valves may be turned off by the fire department if they reach a fire before the Company's representative. The Municipality will notify one of the Company's representatives of fires which may affect the Gas Distribution System and /or the operations as quickly as reasonably possible, or, in the event that they cannot reach a Company representative, the Municipality will advise the Company's standby

personnel of such fires. The Company shall ensure that its representatives reasonably cooperate with the Municipality in preventing, controlling and investigating fires involving or affecting the Gas Distribution System.

11) RIGHT OF FIRST REFUSAL TO PURCHASE

- a) If during the Term of this Agreement, the Company receives a *bona fide* offer to operate, take control of the entire Gas Distribution System or purchase the Gas Distribution System within the Municipal Area, which the Company is willing to accept, then the Company shall promptly give written notice to the Municipality of the terms and conditions of such offer and the Municipality shall during the next one hundred and twenty (120) days, have the right of first refusal to operate, take control of or purchase that part of the Gas Distribution System, as the case may be, for the same price and upon the terms and conditions contained in the said offer. Notwithstanding the foregoing, in the event that the Municipality fails or refuses to exercise its right of first refusal, the Municipality shall retain the right to withhold its consent to an assignment of this Agreement in accordance with paragraph 18 below. For the purposes of this paragraph 11, "operate, take control" shall not be construed as including the subcontracting by the Company of only some portions of its operations where the Company continues to be responsible for the performance of this entire Agreement;
- b) If the Municipality does not exercise its right of first refusal and the said *bona fide* offer that the Company is willing to accept does not proceed to closure, the Municipality retains its right of first refusal on any other offer.
- c) This right of first refusal only applies where the offer pertains to the entire Gas Distribution System and the right of first refusal does not apply to offers that include any other distribution systems or distribution facilities of the Company located outside of the Municipal Area. If such offer includes other distribution systems of the Company, the aforesaid right of first refusal shall be of no force and effect and shall not apply.
- d) Where the Municipality exercises its rights to purchase the Gas Distribution System from the Company and thereby acquires the Gas Distribution System, the Municipality agrees that should it no longer wish to own the Gas Distribution System within five (5) years after it acquires the said system and the Municipality receives any *bona fide* offer from an arms length third party to purchase the Gas Distribution System, which it is willing to accept, then it shall promptly give notice to the Company of the terms and conditions of such offer. The Company shall during the next one hundred and twenty (120) days have the first right of refusal to purchase the Gas Distribution System for the same price and upon the same terms and conditions as contained in the said offer, providing the offer is equal to or greater than the terms

of the original purchase by the Municipality from the Company (taking into account the depreciation of the Gas Distribution System at the time of the offer).

- e) The Municipality's right of first refusal shall not apply where the Company has agreed to transfer the entire Gas Distribution System to a third party utility company in exchange for certain other assets provided all of the following conditions are met:
- (i) the third party utility can demonstrate to the satisfaction of the Municipality that it meets the necessary technical and financial requirements to own and operate the Gas Distribution System;
 - (ii) the only consideration that shall be exchanged between the Company and the third party utility company is the transfer and exchange of assets and monetary consideration limited to a maximum of 49% of the net book value of the Gas Distribution System;
 - (iii) there is no adverse impact to the Municipality resulting from the transfer and exchange above referenced as determined by the Board;
 - (iv) the Company and the third party utility company obtain all the requisite regulatory requirements prior to completing the exchange; and
 - (v) full compensation is paid to the Municipality for all costs including administrative and legal costs incurred by the Municipality in ensuring all of the conditions (i) through (iv) above are satisfied.

12) CONSTRUCTION/MAINTENANCE OF GAS DISTRIBUTION SYSTEM

a) Municipal Approval

Before undertaking any Work, or in any case in which the Municipality specifically requests the same, the Company will submit to and obtain the approval from the Municipality, or its authorized officers, of the plans, and the specifications when available for the proposed Work and its location. Approval by the Municipality granted in accordance with this paragraph shall be limited to an approval of the location and alignment of the Work only, and shall not signify approval of the structural design or the ability of the work to perform the function for which it was intended.

Prior to commencing any Work, the Company shall obtain such applicable permits as are required by the Municipality.

The Company shall obtain prior written approval from the Municipality of any traffic lane or sidewalk closures required to be made at least forty-eight (48) hours prior to the commencement of the proposed Work.

b) Restoration of Municipal Property

The Company agrees that when it or any agent employed by it undertakes any Work on any Municipal Property the Company shall complete the said Work promptly and in a good and workmanlike manner, and, where applicable, in accordance with the approved plans and specifications. Further, the Company shall forthwith restore the Municipal Property to the same state and condition, as nearly as reasonably possible, in which it existed prior to the commencement of such Work, subject to reasonable wear and tear.

The Company shall, where reasonably practicable, locate its pipelines and related equipment in lanes and alleys rather than in the streets and main thoroughfares.

The Company further covenants that it will not unduly interfere with the works of others or the works of the Municipality. Where reasonable and in the best interests of both the Municipality and the Consumer, the Company will cooperate with the Municipality and coordinate the installation of the Gas Distribution System along the designated rights-of-way pursuant to the direction of the Municipality. During the performance of the Work, the Company shall use commercially reasonable efforts to not interfere with existing Municipal Property and to cause as little damage as possible to the property of others (including the Municipality Property). If the Company causes damage to any existing Municipal Property during the performance of any Work, it shall cause such damage to be repaired at its own cost.

Upon default by the Company or its agent to repair damage caused to Municipal Property, the Municipality may provide written notice to the Company to remedy the default. If the default is not remedied with two (2) weeks after receipt of the written notice or such further time as may be reasonably required and requested by the Company using the best efforts on a commercially reasonable basis to remedy the default, the Municipality may undertake such repair work and the Company shall be liable for the reasonable costs thereof.

c) Urgent Repairs and Notification to Municipality

If any repairs or maintenance required to be made to the Gas Distribution System are of an urgent nature where the operation or reliability of the Gas Distribution System is materially compromised or potentially materially compromised, the Company shall be entitled to conduct such repairs or maintenance as are commercially reasonable without prior notice to the Municipality, on the understanding and agreement that the

Company will provide written or verbal notice to the Municipality as soon as practicable and in any event no later than 72 hours after the repairs are commenced.

d) Company to Obtain Approvals from Other Utilities

The Company shall be solely responsible for locating, or causing to be located, all existing utilities or utility mains, pipes, valves and related facilities in, on or adjacent to the Work site. The Company shall notify all other utility operators and ensure that utilities and utility mains, pipes, valves and related facilities are staked prior to commencement of construction. Unless the Municipality has staked the location for the utility property, staking shall not be deemed to be a representation or warranty by the Municipality that the utility or utility property are located as staked. The Municipality shall not be responsible for any damage caused by the Company to any utility or any third party as a result of the Company's Work, unless the Municipality has improperly staked the utility property. Approval must be obtained by the Company from the owner of any third party utility prior to relocation of any facility owned by such third party utility.

e) Approvals

Where any approvals are required to be obtained from either party under this Article, such approvals shall not be unreasonably withheld.

The Company shall ensure that all Work is performed in accordance with the requirements of all applicable legislation, rules and regulations. The Company shall immediately notify the Municipality of any lien, claim of lien or other action of which it has or reasonably should have knowledge, and shall cause the same to be removed within 30 days (or such additional time as the Municipality may allow in writing), failing which the Municipality may take such action as it reasonably deems necessary to remove the same and the entire cost thereof shall be immediately due and payable by the Company to the Municipality.

13) RESPONSIBILITIES FOR COST OF RELOCATION

Upon receipt of one (1) years notice from the Municipality, the Company shall, at its own expense, relocate to Municipal Property such part of the Gas Distribution System that is located on Municipal Property as may be reasonably required by the Municipality due to planned Municipal construction. In order to encourage the orderly development of Municipal facilities and the Gas Distribution System, the Municipality and the Company agree that they will meet regularly to: a) review the long-term facility plans of the Municipality and the Company; and b) determine the time requirements and costs for final design specifications for each relocation. Providing the Municipality is not the developer requesting the relocation for commercial or residential resale to third parties, the Company shall bear the expenses of the required relocation.

Notwithstanding the foregoing, the Company shall not be required to move any part of the Gas Distribution System after receipt of notice from the Municipality in accordance with this Article where:

- a) the Company has illustrated to the satisfaction of the Municipality, acting reasonably, that an appropriate Alternative Course of Action is available;
- b) the Municipality has provided the Company with its written approval of the Alternative Course of Action (which approval may not be unreasonably withheld by the Municipality); and
- c) the Company has provided its written undertaking to carry out the Alternative Course of Action promptly and within a sufficiently short period of time so as to ensure that the Municipality will be left with sufficient time to complete the said planned Municipal construction within the Intended Time Frame (taking into account any delays which the Municipality may encounter as a result of the Company utilizing the Alternative Course of Action).

For the purposes of this Article 13, the term "Alternative Course of Action" shall mean any course of action that will enable the Municipality to complete the said Municipal construction and will result in a net cost savings to the Company (taking into account all additional costs incurred by the Company in carrying out the Alternative Course of Action and any additional costs which the Municipality may incur and which the Company will be required to pay in accordance with this Article 13) and "Intended Time Frame" shall mean the period of time within which the Municipality would have reasonably been able to complete the said Municipal construction if the Company would have relocated the Gas Distribution System in accordance with this Article 13.

If the Municipality agrees to permit the Company to utilize an Alternative Course of Action, the Company shall pay any and all costs incurred in carrying out the Alternative Course of Action and shall pay on demand to the Municipality (on a full indemnity basis) any and all costs incurred by the Municipality:

- (i) in conducting a review of the Alternative Course of Action to determine whether the Alternative Course of Action is acceptable to the Municipality;
- (ii) in modifying any plans the Municipality may have prepared in respect of the said Municipal construction (which are referred to herein as "Modified Plans") or in preparing or developing plans and procedures (which are referred to herein as "Work Around Procedures") to work around the Gas Distribution System or any improvement, thing, or component utilized by the Company in effecting the Alternative Course of Action; and
- (iii) in the course of conducting the said planned Municipal construction where such costs

would not have been incurred by the Municipality if the Company had relocated the Gas Distribution System in accordance with this Article 13 (including any additional cost the Municipality may incur in completing the said Municipal Construction in accordance with the Modified Plans or in effecting any Work Around Procedures).

The following example illustrates the intended application of the foregoing provisions:

- Where :
- (A) The Municipality requires the Company to move a gas line so that the Municipality can replace its own sewer lines. The cost of moving the gas line is \$10,000. The cost of carrying out the replacement of the sewer line after moving the gas line is \$40,000;
 - (B) The Company proposes to simply brace the gas line (at a cost of \$2,000) and the Municipality, acting reasonably, approves of this as an Alternative Course of Action;
 - (C) As a result of having to prepare Modified Plans and to prepare and implement Work Around Procedures to work around the braces, the actual cost incurred by the Municipality in replacing the sewer line is \$45,000 (being a net increase in cost of \$5,000);

the Company is required to pay the \$2,000 cost of the bracing together and the additional cost of \$5,000 incurred by the Municipality (resulting in a net savings of \$3,000 to the Company).

In cases of emergency, the Company shall take all measures that are commercially reasonable and necessary to ensure public safety with respect to relocating any part of the Gas Distribution System that may be required in the circumstances.

If the Company fails to complete the relocation of the Gas Distribution System or fails to repair or do anything else required by the Company pursuant to this clause without valid justification and in a timely and expeditious manner to the satisfaction of the Municipality's representative, acting reasonably, the Municipality may, but is not obligated to, complete such relocation or repair and the Company shall pay the reasonable costs of such relocation or repair forthwith to the Municipality. If the Municipality chooses to complete such relocation or repair the Municipality will ensure that such work is completed using the Company's design specifications and standards, as provided by the Company, including the use of good and safe operating practices.

The Municipality is not responsible, either directly or indirectly, for any damage to the equipment which forms part of the Gas Distribution System which may occur during its installation, maintenance or removal by the Company, nor is the Municipality liable to the Company for any losses, claims, charges, damages and expenses whatsoever suffered by the Company including claims for loss of revenue or loss of profits, on account of the actions of the Municipality, its agents or employees, working in, under, over, along, upon and across its highways and rights-of-ways or

other Municipal Property other than direct loss or damage to the Company caused by the negligence or wilful misconduct of the Municipality, its agents or employees.

In the event the relocation or any part thereof requires the approval of a third party, the Municipality will use reasonable efforts to assist the Company in any negotiation with such third party to obtain the necessary approval(s).

In the event the relocation results from the demand or order of an authority having jurisdiction, other than the Municipality, the Municipality shall not be responsible for any of the costs of such relocation.

14) GAS DISTRIBUTION SYSTEM EXPANSION

Subject to the Terms and Conditions, and at no cost to the Municipality unless otherwise provided for under the Terms and Conditions, the Company shall, on a timely basis use its best efforts on a commercially reasonable basis to meet the Gas Distribution System expansion requests of the Municipality or a Consumer, and provide the requisite facilities for connections for new Consumers to the Gas Distribution System.

15) INCREASE IN MUNICIPAL BOUNDARIES

Where the Municipal Area is increased through annexation or amalgamation as understood under the *Municipal Government Act* (Alberta) by the greater of 640 acres and twenty five (25%) percent of the current area or more, the Municipality shall have the right to:

- a) terminate this Agreement provided the Municipality gives notice in writing to the Company of its intention to do so; or
- b) add the increased area to the Municipal Area already served by the Company so that the rights and obligations contained in this Agreement will apply in respect of the whole Municipal Area, including the increased area.

For all other increases to the Municipal Area through annexation or amalgamation as understood under the *Municipal Government Act* (Alberta), the rights and obligations contained in this Agreement will apply in respect of the whole Municipal Area, including the increased area.

16) JOINT USE OF GAS DISTRIBUTION SYSTEM

a) Municipal Use

The Municipality shall upon notice to the Company have, for any reasonable municipal purpose, the right to make use of the Gas Distribution System (excluding the transportation of gas) and any rights-of-way granted to the Company, provided such use complies with good and safe natural gas operating practices, as determined

by the Company acting reasonably, applicable legislation, and does not unreasonably interfere with the Company's use thereof, at no charge to the Municipality. The Municipality is responsible for its own costs and any necessary and reasonable costs incurred by the Company including the costs of any alterations that may be required in using Gas Distribution System.

b) Third Party Use and Notice

The Company agrees that should any third party including other utilities desire to jointly use the Gas Distribution System or trenches or any parts of the Gas Distribution System, the Company shall not grant the third party joint use except in accordance with this Article, unless otherwise directed by any governmental authority or court of law having jurisdiction.

The Company agrees that the following procedure shall be used in granting permission to third parties desiring joint use of the Gas Distribution System:

- i) first, the third party shall be directed to approach the Company to initially request conditional approval from the Company to use that part of the Gas Distribution System it seeks to use;
- ii) second, upon receiving written conditional approval from the Company, the third party shall be directed to approach the Municipality to obtain its written approval to jointly use that part of the Gas Distribution System on any Municipal Property or right-of-way. As a condition of granting its consent, the Municipality may require that such third party enter into an agreement with the Municipality, and such agreement may require that such third party pay compensation to the Municipality;
- iii) third, upon receiving written conditional approval from the Municipality, the third party shall be directed to obtain final written approval from the Company to jointly use that part of the Gas Distribution System. Once a joint use agreement has been entered into between the Company and the third party, it shall not be subsequently amended without the consent of the Municipality (which consent will not be unreasonably withheld).

c) Cooperation

The Company and Municipality agree they will use reasonable efforts to cooperate with each other in encouraging the use of joint trenching and in any negotiations with third parties desiring joint use of any part of the Gas Distribution System located on Municipal Property.

d) Payment

The compensation paid or to be paid by such third party to the Municipality for the use of the Municipal Property including its rights-of-way, shall be determined between the Municipality and the third party.

The compensation paid or to be paid by such third party to the Company for the joint use any portion of the Gas Distribution System shall be determined between the Company and the third party, subject to the jurisdiction of any governmental authority over the matter and the Municipality's right to intervene in any related regulatory proceeding.

e) Provision of Agreements

The Company shall provide to the Municipality within 6 months of executing this Agreement a copy of all agreements between the Company and any third parties involved in the joint use of any part of the Gas Distribution System.

Upon reasonable request by the Municipality, copies of these agreements shall be updated by the Company and provided to the Municipality at no cost to the Municipality.

17) RECIPROCAL INDEMNIFICATION AND LIABILITY

- a) Company shall indemnify and save the Municipality, its servants, agents, employees, licensees, contractors and invitees, harmless from and against any and all liability, actions, demands, claims, damages, losses and expenses (including all legal costs and disbursements), including indemnity from and against any claim, loss, cost, demand and legal or other expense, whether in respect of any lien, encumbrance or otherwise, arising out of any Work performed by or for the Company, which may be brought against or suffered, sustained, paid or incurred by the Municipality, its servants, agents, employees, contractors, licensees and invitees, arising from, or otherwise caused by:
 - (i) any breach by the Company of any of the provisions of this Agreement; or
 - (ii) the negligence or wilful misconduct of the Company, or any of its servants, agents, employees, licensees, contractors or invitees in carrying on its business within the Municipal Area.
- b) The Municipality shall indemnify and save the Company, its servants, agents, employees, licensees, contractors and invitees, harmless from and against any and all liability, actions, demands, claims, damages, losses and expenses (including all legal

costs and disbursements) which may be brought against or suffered, sustained, paid or incurred by the Company, its servants, agents, employees, licenses, contractors and invitees, arising from, or otherwise caused by:

- (i) any breach by the Municipality of any of the provisions of this Agreement; or
 - (ii) the negligence or wilful misconduct of the Municipality, or any of its servants, agents, employees, licensees, contractors or invitees, in carrying on the business of the Municipality.
- c) Notwithstanding anything to the contrary herein contained, in no event shall the Municipality or the Company be liable under this Agreement, in any way, for any reason, for any indirect, special or consequential damages (including damages for pure economic loss, loss of profits, loss of earnings or loss of contract), howsoever caused or contributed to.

18) ASSIGNMENT

In the event that the Company agrees to sell the Gas Distribution System to a third party purchaser, the Company shall comply with Article 11 above. In addition, the Company will request that the third party purchaser confirm in writing that it will agree to all the terms and conditions of this Agreement between the Company and the Municipality. The Company agrees that it will provide to the Municipality a copy of the third party purchaser's confirmation letter.

The Company agrees to provide the Municipality with reasonable prior written notice of a sale of the Gas Distribution System to a third party purchaser. The parties shall thereafter meet to discuss the technical and financial capabilities of the third party purchaser to perform and satisfy all terms and conditions of the Agreement, and the compensation payable to the Municipality for all costs including administrative and legal costs relating to providing its consent to the Assignment. ("Municipal Compensation")

The Municipality has thirty (30) days from the meeting date with the Company to provide written notice to the Company of its intention to consent or withhold its consent to the assignment of the Agreement to the third party purchaser. The Company agrees that the Municipality may provide notice of its intention to withhold its consent to the assignment of this Agreement to the third party purchaser if the Municipal Compensation is inadequate or if the third party purchaser fails to covenant, in favour of the Municipality, to perform and observe all of the covenants and obligations of the Company to be performed and observed under this Agreement and otherwise solely on the basis of reasonable and material concerns regarding the technical capability or financial wherewithal of the third party purchaser to perform and satisfy all terms and conditions of the Agreement. In this case, such notice to the Company must specify in detail the Municipality's concern. Should the Municipality not reply within the thirty (30) days, it is agreed that the Municipality will be deemed to have consented to the assignment. The Company further agrees that, when it applies to the Board for

approval of the sale, it will include in the application any notice received from the Municipality, including the reasons given by the Municipality for withholding its consent. The Municipality shall have the right to make its own submissions to the Board.

Subject to the Company having fulfilled the obligations outlined in the preceding three paragraphs, the Company shall be entitled to assign this Agreement to an arm's length third party purchaser of the Gas Distribution System without the consent of the Municipality, subject to paying the Municipal Compensation for the assignment, and having obtained the Board's approval for the sale of the Gas Distribution System and, the third party purchaser's confirmation in writing that it agrees to all the terms and conditions of this Agreement.

Where the Board approves such sale of the Gas Distribution System to a third party and the third party provides written confirmation to assume all liabilities and obligations of the Company under this Agreement, then upon the assignment of this Agreement and the payment of the Municipal Compensation for its consent to the Assignment subject to Board approval, the Company shall be released from all its liabilities and obligations thereunder.

The Company shall be entitled to assign this Agreement to a subsidiary or affiliate of the Company without the Municipality's consent. Where the Company assigns this Agreement to a subsidiary or affiliate, the Company will remain jointly and severally liable.

Further, it is a condition of any assignment that the subsidiary, affiliate or third party purchaser, as the case may be, shall provide written notice to the Municipality indicating that it will assume all liabilities and obligations of the Company under this Agreement.

Any disputes arising under the operation of this Article shall be submitted to the Board for determination.

19) NOTICES

All notices, demands, requests, consents, or approvals required or permitted to be given pursuant to the terms of this Agreement shall be in writing and shall be deemed to have been properly given if personally served or sent by registered mail or sent by fax to the Municipality or to the Company as the case may be, at the addresses set forth below:

- (i) To the Company:
AltaGas Utilities Inc.
5509 - 45 Street
Leduc, AB T9E 6T6
Fax: (780) 986-5220

- (ii) To the Municipality:
Town of Drumheller
703 – 2nd Avenue West
Drumheller, AB T0J 0Y3
Fax: (403) 823-7739

The date of receipt of any such notice as given above, shall be deemed to be as follows:

- (i) In the case of personal service, the date of service;
- (ii) In the case of registered mail, the seventh (7th) business day following the date of delivery to the Post Office, provided, however, that in the event of an interruption of normal mail service, receipt shall be deemed to be the seventh (7th) day following the date on which normal service is restored;
- (iii) In the case of a fax, the date the fax was actually received by the recipient.

20) INTERRUPTIONS OR DISCONTINUANCE OF DELIVERY SERVICE

Subject to its Delivery Tariff, the Company shall use its best efforts on a commercially reasonable basis to avoid and minimize any interruption, reduction or discontinuance of Gas Distribution Service to any Consumer. However, the Company reserves the right to do so for any one of the following reasons:

- (i) Where the Company is required to effect necessary repairs or changes to the Gas Distribution System;
- (ii) On account of or to prevent fraud or abuse of the Gas Distribution System;
- (iii) On account of defective aspects of the Gas Distribution Systems which in the opinion of the Company, acting reasonably, may become dangerous to life or property;
- (iv) Where required, under the Terms and Conditions, due to a Consumer's non-payment of gas bills.

To the extent the Company has any planned major interruptions, reductions or discontinuances in Gas Distribution Service, it shall notify the Municipality in writing as soon as practicable in the circumstances. For any other major interruption, reductions or discontinuances in Gas Distribution Service, the Company shall provide verbal notice to the Municipality as soon as is practicable in the circumstances.

21) DISPUTE SETTLEMENT

To the extent permitted by law, the Company and Municipality agree that unresolved disputes pertaining to this Agreement, other than those related to the sale of the Gas Distribution System as contemplated in Articles 9, 11(a) and 18 hereof, that pursuant to the terms of this Agreement, are to be submitted to the Board for determination, or any other matter that is within the exclusive jurisdiction of a governmental authority having jurisdiction, shall be submitted to arbitration for determination and may be commenced by either party providing written notice to the other party stating the dispute to be submitted to arbitration. The parties shall attempt to appoint a mutually satisfactory arbitrator within 10 business days of the said notice. In the event the parties cannot agree on a single arbitrator within the 10 business days, each party shall appoint an arbitrator within the 10 business days thereafter by written notice, and the two arbitrators shall together appoint a third arbitrator within 25 business days of written notice for arbitration. If either party fails to appoint an arbitrator within the time set forth above, the arbitrator appointed by the other party shall proceed with the arbitration and the award of such arbitrator shall be final and binding. In the two arbitrators appointed by the parties hereto fail to agree upon a third arbitrator within the 25 business day period from the date of delivery of the written notice for arbitration, either party may apply, on ten (10) days written notice to the other, to a Judge of the Court of Queen's Bench of Alberta for the appointment of the third arbitrator. The dispute shall be heard by the arbitrator(s) within 45 business days of the written notice for arbitration unless extended by mutual agreement between the parties. The arbitrator(s) shall render a decision within 20 business days of the last day of the arbitration hearing. Save as otherwise expressly provided in this Agreement, the provisions of the *Arbitration Act* (Alberta) (as amended from time to time) shall apply to any arbitration undertaken under this Agreement subject always to the Board's jurisdiction over any matter submitted to arbitration. Pending resolution of any dispute, the Municipality and the Company shall continue to perform their respective obligations hereunder. The decision of the majority of the arbitrators shall be final and binding.

The Company shall advise the Board of any dispute submitted to arbitration within ten (10) business days of it being submitted and shall advise the Board of the results of arbitration within ten (10) business days following receipt of the decision of the arbitrator(s).

22) APPLICATION OF WATER, GAS AND ELECTRIC COMPANIES ACT

This Agreement shall be deemed to operate as consent by the Municipality to the exercise by the Company of those powers which may be exercised by the Company with the consent of the Municipality under and pursuant to the provisions of the *Water, Gas and Electric Companies Act* (Alberta), as amended.

23) FORCE MAJEURE

If either party shall fail to meet its obligations hereunder within the time prescribed, and such failure shall be caused or materially contributed by an event of "force majeure", such failure shall be

deemed not to be a breach of the obligations of such party hereunder, but such party shall use its best efforts to put itself in a position to carry out its obligations hereunder. The term "force majeure" shall mean any acts of God, strikes, lock-outs, or other industrial disturbances, acts of the Queen's enemies, sabotage, war, blockades, insurrections, riots, epidemics, lightening, earthquakes, storms, fires, wash-outs, nuclear and radiation activity or fall-out, restraints of rulers and people, orders of governmental authorities or courts of law having jurisdiction, the inability to obtain any necessary approval from a governmental authority having jurisdiction (excluding municipal governments), civil disturbances, explosions, mechanical failure, and any other causes similar in nature not specifically enumerated or otherwise specified herein that are not within the control of such party, and all of which by the exercise of due diligence of such party could not have been prevented. Lack of finances shall be deemed not to be an event of "force majeure".

24) TERMS AND CONDITIONS

The Terms and Conditions that apply to the Company and are approved by the Board, as revised or amended from time to time by the Board, shall apply to the Municipality.

25) NOT EXCLUSIVE AGAINST HER MAJESTY

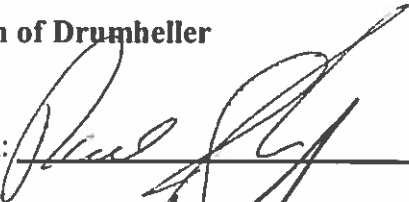
Notwithstanding anything to the contrary herein contained, it is mutually understood and agreed that the rights, powers and privileges conferred and granted by this Agreement shall not be deemed to be exclusive against Her Majesty in the right of the Province of Alberta.


26) SEVERABILITY

To the extent permitted by law, any provision of this Agreement which is prohibited or unenforceable, shall be ineffective to the extent of such prohibition or unenforceability, without invalidating the remaining portions hereof.

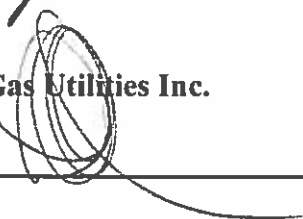
IN WITNESS WHEREOF the parties hereto have executed these presents as of the day and year first above written.

Town of Drumheller

PER:  _____

PER:  _____

AltaGas Utilities Inc.

PER:  _____

PER: _____

I

SCHEDULE "A"
Core Services

The Company shall provide to the Municipality the following basic services as Core Services:

- 1) The Company shall deliver natural gas to the Consumers within the Municipal Area in accordance with the Company's Terms and Conditions, the Company's Distribution Tariff, the Act, any regulations thereto, and any Board Orders.
- 2) The Company shall install all natural gas facilities required to provide service to the Consumers within the Municipal Area and in accordance with the Natural Gas Sales Service Regulations.
- 3) As required by legislation, the Company shall provide and install all necessary regulators and meters necessary for measuring the natural gas supplied to each Consumer. The point of delivery shall be upon the Consumer's premise, currently at the outlet side of the meter.
- 4) The Company agrees to collaborate with the Municipality's Fire Department in an effort to mutually develop emergency response procedures relating to natural gas emergencies.
- 5) The Company shall do all things to Operate and Maintain the Gas Distribution System, including in accordance with all applicable regulations, codes, applicable standards and common industry practices.
- 6) The Company shall provide twenty-four hour a day "Trouble Service" to investigate any natural gas odor and make safe any suspected gas leak inside or outside the Consumer's premise.
- 7) The Company will utilize the services of professional engineers who are responsible for designing all natural gas facilities to satisfy all applicable regulatory codes and standards; preparing of necessary work order plans and monitoring the distribution network pressures to ensure that the Company's facilities will satisfy the Consumer's current and future natural gas delivery requirements.
- 8) The Company shall provide to the Municipality, on request, copies of any and all Gas Distribution Service related written information or reports required to be filed with the Board, with the exception of responses to questions from interveners or the Board related to rate hearings.


Company


Municipality

II

- 9) The Company shall provide to the Municipality, upon request, an annual report on the following standards specific to the Municipality:
- i) **System Reliability** - that will be measured by:
 - The number of major interruptions to Gas Distribution Service resulting in a loss of service to Consumers;
 - The number of Consumers affected by each outage; and
 - The average duration of each outage.
 - ii) **Customer Satisfaction with local Gas Distribution Service** - that will be measured by the number and nature of unresolved local non-rates related customer complaints received by the Company.
 - including the Company-wide Call Centre targets and statistics (wait times, abandoned calls, call volumes, etc); and any
 - customer complaints received by the Board.
 - iii) **Public Safety:** that will be measured by:
 - the number of customer injuries and/or damages due to Gas Distribution System failure;
 - the number of line hits per total locates completed;
 - the number of line hits as a result of inaccurate locates;
 - the percentage of the area of the Municipality surveyed for leaks and yearly cathodic protection measures;
 - the number and nature of calls received from the Municipality and any of its Municipal agencies (including fire department, police department etc.) regarding the Gas Distribution System.
- 10) The Company shall meet at least annually with the Municipality ensuring that through a mutual exchange of information the Municipality is kept apprised of the Company's construction and upgrading programs planned for the Municipality. The Municipality will advise the Company of any issues relating to the Gas Distribution System that have been addressed by Municipal council.



Company



Municipality

I

SCHEDULE "B"
Extra Services

- 1) After the Municipality requests Extra Services, the Company will provide its applicable operations and maintenance standards for Gas Distribution System field services.
- 2) If the Company and the Municipality agree that the Company will provide Extra Services requested by the Municipality, the parties shall complete the information required in subparagraph 3), and subparagraph 4) shall apply in respect of such Extra Services.
- 3) Extra Services shall mean:

[To be negotiated by municipality.] _____

- 4) In consideration for the provision of the Extra Services, the Municipality shall pay to the Company the sum of _____ Dollars (\$_____) which if forming part of this Agreement shall be collected as part of the Franchise Fee.
- 5) Within sixty (60) days of the end of each calendar year, the Company shall provide a written report to the Municipality, outlining the actual performance of the Extra Services provided and the related costs for each service for the Municipality to assess if the performance standards for the Extra Services have been met.
- 6) In the event the Company breaches any material provision of the Extra Services contract, the Municipality may, at its option, provide written notice to the Company to remedy such breach. If the said breach is not remedied within two (2) weeks after receipt of the written notice or such further time as may be reasonably required by the Company using its best efforts on a commercially reasonable basis to remedy the breach, the Municipality may give six (6) months notice in writing of the termination of the Extra Services contract to the Company, and unless such breach is remedied to the satisfaction of the Municipality acting reasonably, the Extra Services contract shall terminate.



Company

Municipality

I

SCHEDULE "C"
Rural Franchise Area #606B



**RURAL FRANCHISE
AREA APPROVAL # 6**



Company



Municipality

NATURAL GAS DISTRIBUTION SYSTEM FRANCHISE AGREEMENT

2015

BETWEEN:

Town of Drumheller

- AND -

AltaGas Utilities Inc.

Table of Contents

1) Definitions and Interpretation	3
2) Term	6
3) Expiry of Term of Agreement	6
4) Grant of Franchise	7
5) Franchise Fee	8
6) Core Services	9
7) Provision of Extra Services	9
8) Municipal Taxes.....	10
9) Right to Terminate on Default	10
10) Sale of Natural Gas Distribution System	10
11) Provision of Detailed Plans and Equipment.....	10
12) Right of First Refusal to Purchase	11
13) Construction and/or Maintenance of Natural Gas Distribution System.....	12
14) Responsibilities For Cost of Relocations	15
15) Natural Gas Distribution System Expansion	17
16) Increase in Municipal Boundaries.....	18
17) Joint Use of Municipal Rights-of-Way.....	18
18) Municipality as a Retailer.....	19
19) Reciprocal Indemnification and Liability.....	19
20) Assignment	20
21) Notices	21
22) Interruptions or Discontinuance of Delivery Service	22
23) Dispute Settlement	22
24) Application of Water, Gas and Electric Companies Act	23
25) Force Majeure.....	23
26) Terms and Conditions	24
27) Not Exclusive Against Her Majesty	24
28) Severability	24
29) Amendments	24
30) Waiver.....	24
31) Confidentiality	25
SCHEDULE "A" Core Services	26
SCHEDULE "B" Extra Services.....	28

NATURAL GAS DISTRIBUTION SYSTEM FRANCHISE AGREEMENT

BETWEEN:

Town of Drumheller,
a municipality located in the Province of Alberta
(the “**Municipality**”)

OF THE FIRST PART

– and –

AltaGas Utilities Inc.,
a corporation having its head office at the City of Leduc,
in the Province of Alberta
(the “**Company**”)

OF THE SECOND PART

WHEREAS the Municipality desires to grant and the Company, collectively the “**Parties**”, desires to obtain an exclusive franchise to provide Natural Gas Distribution Service within the Municipal Service Area on the terms and conditions herein contained;

NOW THEREFORE in consideration of the mutual covenants and promises herein contained, the Parties hereby agree as follows:

1) Definitions and Interpretation

Unless otherwise expressly provided in this Agreement, the words, phrases and expressions in this Agreement will have the meanings attributed to them as follows:

- a) “**Agreement**” means this Natural Gas Distribution System Franchise Agreement;
- b) “**Alternative Course of Action**” shall have the meaning set out in paragraph 14 (c);
- c) “**Commission**” means the Alberta Utilities Commission (AUC) as established under the *Alberta Utilities Commission Act* (Alberta);
- d) “**Company**” means the Party of the second part to this Agreement and includes its successors and permitted assigns;
- e) “**Construct**” means constructing, reconstructing, upgrading, extending, relocating, or removing any part of the Natural Gas Distribution System;

Agenda Item # 8.1.2

- f) **“Consumer”** or **“Consumers”** as the text may require, means any individual, group of individuals, firm or body corporate, including the Municipality, with premises or facilities located within the Municipal Service Area from time to time that are provided with Natural Gas Distribution Service by the Company pursuant to the Company’s Delivery Tariff;
- g) **“Core Services”** means all those services set forth in Schedule “A” of this Agreement;
- h) **“Delivery Tariff”** means the rates and Terms and Conditions of service approved by the Commission from time to time on an interim or final basis, as the case may be, for the Company to deliver Natural Gas to the Consumer;
- i) **“Electronic Format”** means any document or other means of communication that is created, recorded, transmitted or stored in digital form or in any other intangible form by electronic, magnetic or optical means or by any other computer-related means that have similar capabilities for creation, recording, transmission or storage;
- j) **“Extra Services”** means those services set forth in Schedule “B” that are requested by the Municipality for itself or on behalf of its citizens and provided by the Company in accordance with paragraph 7 of this Agreement;
- k) **“GUA”** means the *Gas Utilities Act* (Alberta);
- l) **“Intended Time Frame”** shall have the meaning set out in paragraph 14 (c);
- m) **“Maintain”** means to maintain and keep in good repair any part of the Natural Gas Distribution System;
- n) **“Major Work”** means any Work to Construct or Maintain the Distribution System that costs more than fifty thousand (\$50,000) Dollars;
- o) **“MGA”** means the *Municipal Government Act* (Alberta);
- p) **“Modified Plans”** shall have the meaning set out in paragraph 14 (c)(ii);
- q) **“Municipality”** means the Party of the first part to this Agreement;
- r) **“Municipal Compensation”** shall have the meaning set out in paragraph 20;
- s) **“Municipal Service Area”** means the geographical area within the legal boundaries of the Municipality where the Company has been granted rights hereunder in connection with, among other matters, Natural Gas Distribution Service, as altered from time to time;
- t) **“Municipal Property”** means all property, including lands and buildings, owned, controlled or managed by the Municipality within the Municipal Service Area;
- u) **“Natural Gas”** means a combustible mixture of hydrocarbon gases;

Agenda Item # 8.1.2

- v) **“Natural Gas Distribution Service”** means the delivery of Natural Gas in accordance with the Company’s Delivery Tariff;
- w) **“Natural Gas Distribution System”** means any facilities owned by the Company which are used to provide Natural Gas Distribution Service within the Municipal Service Area, and without limiting the generality of the foregoing, will include all mains, pipes, conduits, valves and all other installations used and required for the purpose of delivering Natural Gas to the Consumer within the Municipal Service Area and includes any Natural Gas transmission lines owned by the Company within the Municipal Service Area;
- x) **“NOVA Gas Transmission Ltd. (NGTL)”** means NGTL and its successors, as applicable, for purposes of paragraph 5 g) of this Agreement. For greater certainty, the provisions of paragraph 5 g) may only apply in relation to franchises held by ATCO;
- y) **“Operate”** means to operate the Natural Gas Distribution System, or to interrupt or restore service in any part of the Natural Gas Distribution System, in a safe and reliable manner;
- z) **“Party”** means any party to this Agreement and **“Parties”** means all of the parties to this Agreement;
- aa) **“Plans and Specifications”** means the plans, drawings and specifications reasonably necessary to properly assess and review proposed Work prior to issuance of any approval that may be required under this Agreement;
- bb) **“Term”** means the term of this Agreement set out in paragraph 2;
- cc) **“Terms and Conditions”** means the terms and conditions contained within the Delivery Tariff in effect from time to time for the Company as approved by the Commission;
- dd) **“Work”** means any work to Construct or Maintain the Natural Gas Distribution System; and
- ee) **“Work Around Procedures”** shall have the meaning set out in paragraph 14 (c)(ii).

The words “hereof”, “herein”, “hereunder” and other words of similar import refer to this Agreement as a whole, including any attachments hereto, as the same may from time to time be amended or supplemented and not to any subdivision contained in this Agreement. Unless the context otherwise requires, words importing the singular include the plural and vice versa and words importing gender include all genders. References to provisions of statutes, rules or regulations will be deemed to include references to such provisions as amended, modified or re-enacted from time to time. The word “including” when used herein is not intended to be exclusive and in all cases means “including without limitation”. References herein to a section, paragraph, clause, Article or provision will refer to the appropriate section, paragraph, clause, article or provision of this Agreement. The descriptive headings of this Agreement are inserted for convenience of reference only and do not constitute a part of and will not be utilized in interpreting this Agreement.

2) Term

- a) Subject to sub-paragraph 2(b), this Agreement will be for a minimum term of ten years, commencing on the later of:
 - i) 1st day of November, 2015; and
 - ii) the first (1st) business day after both of the following have occurred:
 - A. the Commission has approved and acknowledged this Agreement; and
 - B. Council of the Municipality has passed third reading of the applicable adopting bylaw.
- b) This Agreement will expire on the 31st day of October, 2025.
- c) It is agreed this Agreement supersedes and replaces any prior Natural Gas franchise agreements between the Municipality and the Company.

3) Expiry of Term of Agreement

- a) Provided the Company gives written notice to the Municipality not less than twelve (12) months prior to the expiration of the Term of its intention to negotiate a new franchise agreement, at any time following the expiration of the Term, and if the Municipality has not provided written notice to the Company to exercise its rights to purchase the Natural Gas Distribution System, either Party may submit any items in dispute pertaining to a new franchise agreement to binding arbitration by the Commission.
- b) Subject to subparagraph 3c) of this Agreement, upon expiry of the Term, this Agreement will continue in effect pursuant to the provisions of the MGA.
- c) Commencing one (1) year following the expiration of the Term of this Agreement, unless either Party has invoked the right to arbitration referred to in subparagraph 3a) , or the Municipality has given written notice to purchase the Natural Gas Distribution System, this Agreement will be amended to provide the following:
 - i) Fifty percent (50%) of the franchise fee otherwise payable under this Agreement to the Municipality will be held back and deposited in trust in an interest bearing trust account by the Company, for the sole benefit of the Municipality. The trust money along with all accumulated interest will be paid to the Municipality immediately upon execution of another Natural Gas Franchise Agreement with the Company, or if the Municipality purchases the Natural Gas Distribution System, or if the Company transfers or sells the Natural Gas Distribution System, or upon further Order of the Commission.
- d) In the event a franchise agreement template is approved by the Commission during the Term of this Agreement and the provisions are materially different from the provisions of this

Agenda Item # 8.1.2

Agreement, the Parties may, by agreement in writing, amend this Agreement to conform to such franchise agreement template.

4) Grant of Franchise

- a) Subject to the terms and conditions hereof, the Municipality hereby grants to the Company the exclusive right within the Municipal Service Area to:
 - i) provide Natural Gas Distribution Service;
 - ii) Construct, Operate, and Maintain the Natural Gas Distribution System; and
 - iii) use portions of roads, rights-of-way, and other lands owned, controlled or managed by the Municipality which have been designated by the Municipality for such use and which are necessary to provide Natural Gas Distribution Service or to Construct, Operate and Maintain the Natural Gas Distribution System.
- b) Subject to subparagraph 4c) , and to the terms and conditions hereof, the Municipality agrees it will not, during the Term, grant to any other person, firm or corporation, the right to Construct, Operate and Maintain any natural gas distribution system nor the exclusive right to use the portions of the roads, rights-of-way and other lands owned, controlled or managed by the Municipality which have been designated by the Municipality for such use and which are necessary to provide Natural Gas distribution service or to Construct, Operate and Maintain a Natural Gas distribution system, for the purpose of delivering Natural Gas in the Municipal Service Area for Consumers, so long as the Company delivers the Consumers' requirements of Natural Gas.
- c) The Company agrees to:
 - i) bear the full responsibility of an owner of a Natural Gas distribution system and to ensure all services provided pursuant to this Agreement are provided in accordance with the Delivery Tariff, insofar as applicable;
 - ii) Construct, Operate and Maintain the Natural Gas Distribution System;
 - iii) use designated portions of roads, rights-of-way, and other lands including other lands owned, controlled or managed by the Municipality necessary to Construct, Operate and Maintain the Natural Gas Distribution System, including the necessary removal, trimming of trees, shrubs or bushes or any parts thereof; and
 - iv) use the Municipality's roads, rights-of-way and other Municipal Property granted hereunder solely for the purpose of providing Natural Gas Distribution Service and any other service contemplated by this Agreement.

5) Franchise Fee

a) Calculation of Franchise Fee

In consideration of the rights granted pursuant to paragraph 4 and the mutual covenants herein and subject to Commission approval the Company agrees to collect from Consumers and pay to the Municipality a franchise fee. The Parties agree s. 360(4) of the *MGA*, as amended, does not apply to the calculation of the franchise fee in this Agreement. For each calendar year the franchise fee will be calculated as a percentage of the Company's actual total revenue derived from the Delivery Tariff, including without limitation the fixed charge, base energy charge, demand charge, but excluding the cost of Natural Gas (being the calculated revenues from the Natural Gas cost recovery rate rider or the deemed cost of Natural Gas and Natural Gas supply related riders) in that year for Natural Gas Distribution Service within the Municipal Service Area.

For the first (1st) calendar year or portion thereof of the Term of this Agreement, the franchise fee percentage will be twenty-seven percent (27 %).

By no later than September 1st of each year, the Company will:

- i) advise the Municipality in writing of the total revenues that were derived from the Delivery Tariff within the Municipal Service Area for the prior calendar year; and
- ii) with the Municipality's assistance, provide in writing an estimate of total revenues to be derived from the Delivery Tariff within the Municipal Service Area for the next calendar year.

b) Adjustment to the Franchise Fee

At the option of the Municipality and subject to Commission approval, the franchise fee percentage may be changed annually by providing written notice to the Company.

If the Municipality wishes to amend the franchise fee percentage, then the Municipality will, no later than November 1st in any year of the Term, advise the Company in writing of the franchise fee percentage to be charged for the following calendar year. Upon receipt of notice, the Company will work with the Municipality to ensure all regulatory requirements are satisfied on a timely basis and agrees to use best efforts to obtain approval from the Commission for implementation of the proposed franchise fee percentage as and from January 1st of the following calendar year.

If the Municipality provides written notice at any other time with respect to a franchise fee change, the Company will implement the new franchise fee percentage as soon as reasonably possible.

c) Notice to Change Franchise Fee

Prior to implementing any change to the franchise fee, the Municipality will notify its intent to change the level of the franchise fee and the resulting effect such change will have on an average residential Consumer's annual Natural Gas bill through publication of a notice once

Agenda Item # 8.1.2

in the newspaper with the widest circulation in the Municipal Service Area at least forty five (45) days prior to implementing the revised franchise fee. A copy of the published notice will be filed with the Commission.

d) Payment of Franchise Fee

The Company will pay the Municipality the franchise fee amount billed to Consumers on a monthly basis within forty-five (45) days after billing Consumers.

e) Franchise Fee Cap

The franchise fee percentage will not at any time exceed thirty five percent (35%) without prior Commission approval.

f) Reporting Considerations

Upon request, the Company will provide to the Municipality, along with payment of the franchise fee amount information on the total Delivery Tariff billed, the franchise fee percentage applied, and the derived franchise fee amount used by the Company to verify the payment of the franchise fee amount as calculated under this paragraph 5.

g) Franchise Fees Collected from NOVA Gas Transmission Ltd. Customers

In the event certain customers in the Municipal Service Area connected to the Company's Natural Gas Distribution System are customers of the NOVA Gas Transmission Ltd. (NGTL), a franchise fee will be collected from such customers by NGTL in accordance with NGTL's applicable tariff and such franchise fee once remitted to the Company will be aggregated with the franchise fee as calculated in paragraph 5 a) to be dealt with in accordance with paragraph 5 d).

6) Core Services

The Company agrees to provide to the Municipality the Core Services set forth in Schedule "A". The Company and the Municipality may amend Schedule "A" from time to time upon mutual agreement.

7) Provision of Extra Services

Subject to an agreement being reached, the Company agrees to provide to the Municipality the Extra Services, if any, set forth in Schedule "B", as requested by the Municipality from time to time. The Company is entitled to receive from the Municipality a reasonable amount for full compensation for the provision of the Extra Services in accordance with Schedule "B". The Company and the Municipality may amend Schedule "B" from time to time upon mutual agreement.

Agenda Item # 8.1.2

Any breach by the Company in connection with the provision of any Extra Services contained in this Agreement will not constitute a breach of a material provision of this Agreement for the purposes of paragraph 9.

8) Municipal Taxes

Amounts payable to the Municipality pursuant to this Agreement will be (without duplication) in addition to the municipal taxes and other levies or charges made by the Municipality against the Company, its land and buildings, linear property, machinery and equipment.

9) Right to Terminate on Default

In the event either Party breaches any material provision of this Agreement, the other Party may, at its option, provide written notice to the Party in breach to remedy such breach. If the said breach is not remedied within two (2) weeks after receipt of the written notice or such further time as may be reasonably required by the Party in breach using best efforts on a commercially reasonable basis, the Party not in breach may give six (6) months notice in writing to the other Party of its intent to terminate this Agreement, and unless such breach is remedied to the satisfaction of the Party not in breach acting reasonably this Agreement will terminate six (6) months from the date such written notice is given, subject to prior Commission approval.

10) Sale of Natural Gas Distribution System

Upon the expiration of the Term of this Agreement or the termination of this Agreement pursuant to the terms and conditions hereof or by operation of law or order of a governmental authority or court of law having jurisdiction the Municipality may, subject to the approval of the Commission under Section 47 of the MGA:

- i) exercise its right to require the Company to sell to it the Natural Gas Distribution System within the Municipal Service Area pursuant to the provisions of the MGA, where applicable; or
- ii) if such right to require the Company to sell the Natural Gas Distribution System is either not applicable or has been repealed, require the Company to sell to it the Natural Gas Distribution System. If, upon the expiration of the Agreement, the parties are unable to agree on the price or on any other terms and conditions of the purchase, the unresolved matters will be referred to the Commission for determination.

11) Provision of Detailed Plans and Equipment

a) Detailed Plans

The Company agrees to provide to the Municipality for the Municipality's purposes only, the most current set of detailed plan sheets including as-built drawings and specifications

Agenda Item # 8.1.2

showing the locations (excluding depth) and alignments of the Natural Gas Distribution System, excepting service lines and installations on private property, according to the plan sheets in hard copy and in Electronic Format, where available, together with as many prints of the overall Natural Gas Distribution System as the Municipality may reasonably require. These plans and plan sheets will be updated by the Company on at least an annual basis.

The Municipality will, upon reasonable request, provide to the Company any subdivision development plans of the Municipality in hard copy and in Electronic Format, where available. The subdivision development plans are provided to the Company for the sole purpose of assisting the Company in delivering Natural Gas to the Consumer.

b) Provision of Equipment

The Company agrees to provide the Municipality's fire department with the equipment necessary for the operation of curb boxes and service valves. In case of fire, the service valves may be turned off by the fire department if they reach a fire before the Company's representative. The Municipality will notify one of the Company's representatives of fires which may affect the Natural Gas Distribution System and/or the operations thereof as quickly as reasonably possible or, in the event they cannot reach a Company representative, the Municipality will advise the Company's standby personnel of such fires. The Company will ensure its representatives reasonably cooperate with the Municipality in preventing, controlling and investigating fires involving or affecting the Natural Gas Distribution System.

12) Right of First Refusal to Purchase

- a) If during the Term of this Agreement, the Company receives a *bona fide* arm's length offer to operate, take control of, or purchase the Natural Gas Distribution System within the Municipal Service Area, which the Company is willing to accept, then the Company will promptly give written notice to the Municipality of the terms and conditions of such offer and the Municipality will during the next one hundred and twenty (120) days, have the right of first refusal to operate, take control of or purchase the Natural Gas Distribution System, as the case may be, for the same price and upon the terms and conditions contained in the said offer.

Notwithstanding the foregoing, in the event the Municipality fails or refuses to exercise its right of first refusal, the Municipality will retain the right to withhold its consent to an assignment of this Agreement in accordance with paragraph 20 below. For the purposes of this paragraph 12, "operate, take control" will not be construed as including the subcontracting by the Company of only some portions of its operations where the Company continues to be responsible for the performance of this entire Agreement;

- b) If the Municipality does not exercise its right of first refusal and the said *bona fide* offer the Company is willing to accept does not proceed to closure, the Municipality retains its right of first refusal on any other offer.

Agenda Item # 8.1.2

- c) This right of first refusal applies where the offer pertains only to the entire Natural Gas Distribution System. The right of first refusal does not apply to offers that include any other distribution systems or distribution facilities of the Company located outside of the Municipal Service Area. If such offer includes other distribution systems of the Company, the aforesaid right of first refusal will be of no force and effect and will not apply.
- d) Where the Municipality exercises its rights to purchase the Natural Gas Distribution System from the Company and thereby acquires the Natural Gas Distribution System, the Municipality agrees, should it no longer wish to own the Natural Gas Distribution System within five (5) years after it acquires the said system and the Municipality receives any *bona fide* offer from an arms-length third party to purchase the Natural Gas Distribution System, which it is willing to accept, then it will promptly give written notice to the Company of the terms and conditions of such offer. The Company will during the next one hundred and twenty (120) days have the first right of refusal to purchase the Natural Gas Distribution System for the same price and upon the same terms and conditions as contained in the said offer.
- e) The Municipality's right of first refusal will not apply where the Company has agreed to transfer the Natural Gas Distribution System to a third party utility company in exchange for certain other assets provided all of the following conditions are met:
 - i) the third party utility can demonstrate to the reasonable satisfaction of the Municipality that it meets the necessary technical and financial requirements to own and operate the Natural Gas Distribution System;
 - ii) the only consideration that will be exchanged between the Company and the third party utility company is the transfer and exchange of assets and monetary consideration limited to a maximum of 49% of the net book value of the Natural Gas Distribution System;
 - iii) there is no adverse impact to the Municipality resulting from the transfer and exchange above referenced as determined by the Commission;
 - iv) the Company and the third party utility company obtain all the requisite regulatory requirements prior to completing the transfer and exchange; and
 - v) full compensation is paid to the Municipality for all reasonable costs including administrative and legal costs incurred by the Municipality in ensuring all of the conditions i) through iv) above are satisfied.

13) Construction and/or Maintenance of Natural Gas Distribution System

a) Municipal Approval

Before undertaking any Major Work, or in any case in which the Municipality specifically requests any Major Work, the Company will submit to and obtain the written approval from the Municipality, or its authorized officers, of the Plans and Specifications for the proposed

Agenda Item # 8.1.2

Major Work and its location. Approval by the Municipality granted in accordance with this paragraph will be limited to an approval of the location and alignment of the Major Work only, and will not signify approval of the structural design or the ability of the work to perform the function for which it was intended.

Prior to commencing the Work, the Company will obtain such other applicable permits as are required by the Municipality. The Company will notify the Municipality of all Work done within the Municipal Service Area prior to commencing the Work where reasonably practicable. However, only Major Work is subject to a formal approval process.

The Company will obtain prior written approval from the Municipality for any traffic lane or sidewalk closures required to be made at least forty-eight (48) hours prior to the commencement of the proposed Work.

For the purposes of obtaining the approval of the Municipality for Major Work under this Agreement, the Company will provide the Municipality with the Plans and Specifications for the proposed Major Work in Electronic Format (or upon request, the Company will provide the Municipality with a hard copy of the materials). The Plans and Specifications will include a description of the project and drawings of a type and format generally used by the Company for obtaining approvals from municipalities and will illustrate the proposed changes to the Natural Gas Distribution System.

b) Restoration of Municipal Property

The Company agrees when it or any agent employed by it undertakes any Work on any Municipal Property, the Company will complete the said Work promptly and in a good and workmanlike manner and, where applicable, in accordance with the approved Plans and Specifications. Further, and unless otherwise agreed to by the Parties, the Company will forthwith restore the Municipal Property to the same state and condition, as nearly as reasonably possible, in which it existed prior to the commencement of such Work, subject to reasonable wear and tear and to the satisfaction of the Municipality acting reasonably.

The Company will, where reasonably practicable and prudent, locate its pipelines and related equipment in lanes and alleys rather than in the streets and main thoroughfares.

The Company further covenants it will not unduly interfere with the works of others or the works of the Municipality. Where reasonable and in the best interests of both the Municipality and the Consumer, the Company will cooperate with the Municipality and coordinate the installation of the Natural Gas Distribution System along the designated rights-of-way pursuant to the direction of the Municipality. During the performance of the Work, the Company will use commercially reasonable efforts to not interfere with existing Municipal Property and to cause as little damage as possible to the property of others (including the Municipality Property). If the Company causes damage to any existing Municipal Property during the performance of any Work, it will cause such damage to be repaired at its own cost.

Upon default by the Company or its agent to repair damage caused to Municipal Property as set out above, the Municipality may provide written notice to the Company to remedy the

Agenda Item # 8.1.2

default. If the default is not remedied within two (2) weeks after receipt of the written notice or such further time as may be reasonably required and requested by the Company using best efforts on a commercially reasonable basis to remedy the default, the Municipality may undertake such repair work and the Company will be liable for the reasonable costs thereof.

c) Urgent Repairs and Notification to Municipality

If any repairs or maintenance required to be made to the Natural Gas Distribution System are of an urgent nature where the operation or reliability of the Natural Gas Distribution System is materially compromised or potentially materially compromised, the Company will be entitled to conduct such repairs or maintenance as are commercially reasonable without prior notice to the Municipality and, unless otherwise specified by the Municipality, the Company will provide notice to the Municipality as soon as practicable and, in any event, no later than seventy-two (72) hours after the repairs are commenced.

d) Company to Obtain Approvals from Other Utilities

The Company will be solely responsible for locating, or causing to be located, all existing utilities or utility mains, pipes, valves and related facilities in, on or adjacent to the Work site. The Company will notify all other utility operators and ensure utilities and utility mains, pipes, valves and related facilities are staked prior to commencement of construction. Unless the Municipality has staked the location for the utility property, staking will not be deemed to be a representation or warranty by the Municipality the utility or utility property are located as staked. The Municipality will not be responsible for any damage caused by the Company to any utility or any third party as a result of the Company's Work, unless the Municipality has improperly staked the utility property. Approval must be obtained by the Company from the owner of any third party utility prior to relocation of any facility owned by such third party utility.

e) Revised Plans and Specifications

Following completion of the Major Work, the Company will provide the Municipality with the revised Plans and Specifications, updated after construction, in Electronic Format, where available and upon request, the Company will provide the Municipality with a hard copy of the materials within three (3) months of the request. The Company will provide the Municipality with copies of any other revised Plans and Specifications as reasonably requested by the Municipality. For the purposes of this paragraph and paragraph 11, the Company may satisfy its obligations to provide revised Plans and Specifications in Electronic Format by:

- i) advising the Municipality the revised Plans and Specifications are posted to a web-based forum that contains such information; and
- ii) allowing the Municipality access to such web-based forum.

f) Approvals

Where any approvals are required to be obtained from either Party under this paragraph, such approvals will not be unreasonably withheld.

The Company will ensure all Work is performed in accordance with the requirements of all applicable legislation, rules and regulations. The Company will immediately notify the Municipality of any lien, claim of lien or other action of which it has or reasonably should have knowledge, and will cause the same to be removed within thirty (30) days (or such additional time as the Municipality may allow in writing), failing which the Municipality may take such action as it reasonably deems necessary to remove the same and the entire cost thereof will be immediately due and payable by the Company to the Municipality.

14) Responsibilities For Cost of Relocations

- a) Upon receipt of one (1) year's notice from the Municipality, the Company will, at its own expense, relocate to Municipal Property such part of the Natural Gas Distribution System that is located on Municipal Property as may be reasonably required by the Municipality due to planned municipal construction. In order to encourage the orderly development of Municipal facilities and the Natural Gas Distribution System, the Municipality and the Company agree they will meet regularly to:
 - i) review the long-term facility plans of the Municipality and the Company; and
 - ii) determine the time requirements and costs for final design specifications for each relocation. Providing the Municipality is not the developer requesting the relocation for commercial or residential resale to third parties, the Company will bear the expenses of the required relocation.
- b) Notwithstanding the foregoing, the Company will not be required to move any part of the Natural Gas Distribution System after receipt of notice from the Municipality in accordance with this paragraph where:
 - i) the Company has illustrated to the satisfaction of the Municipality, acting reasonably, an appropriate Alternative Course of Action is available;
 - ii) the Municipality has provided the Company with its written approval of the Alternative Course of Action (which approval may not be unreasonably withheld by the Municipality); and
 - iii) the Company has provided its written undertaking to carry out the Alternative Course of Action promptly and within a sufficiently short period of time so as to ensure the Municipality will be left with sufficient time to complete the said planned municipal construction within the Intended Time Frame (taking into account any delays which the Municipality may encounter as a result of the Company utilizing the Alternative Course of Action).

Agenda Item # 8.1.2

- c) For the purposes of this paragraph 14, the term “Alternative Course of Action” will mean any course of action that will enable the Municipality to complete the said Municipal construction and will result in a net cost savings to the Company (taking into account all additional costs incurred by the Company in carrying out the Alternative Course of Action and any additional costs which the Municipality may incur and which the Company will be required to pay in accordance with this paragraph 14 and “Intended Time Frame” will mean the period of time within which the Municipality would have reasonably been able to complete the said Municipal construction if the Company would have relocated the Natural Gas Distribution System in accordance with this paragraph 14.

If the Municipality agrees to permit the Company to utilize an Alternative Course of Action, the Company will pay any and all costs incurred in carrying out the Alternative Course of Action and will pay on demand to the Municipality (on a full indemnity basis) any and all costs incurred by the Municipality:

- i) in conducting a review of the Alternative Course of Action to determine whether the Alternative Course of Action is acceptable to the Municipality;
 - ii) in modifying any plans the Municipality may have prepared in respect of the said municipal construction (“Modified Plans”) or in preparing or developing plans and procedures (“Work Around Procedures”) to work around the Natural Gas Distribution System or any improvement, thing, or component utilized by the Company in effecting the Alternative Course of Action; and
 - iii) in the course of conducting the said planned municipal construction where such costs would not have been incurred by the Municipality if the Company had relocated the Natural Gas Distribution System in accordance with this paragraph 14 (including any reasonable additional cost the Municipality may incur in completing the said municipal construction in accordance with the Modified Plans or in effecting any Work Around Procedures).
- d) The following example illustrates the intended application of the foregoing provisions:

Where:

- i) The Municipality requires the Company to move a Natural Gas line so the Municipality can replace its own sewer lines. The cost of moving the Natural Gas line is \$10,000. The cost of carrying out the replacement of the sewer line after moving the Natural Gas line is \$40,000;
- ii) The Company proposes to simply brace the Natural Gas line (at a cost of \$2,000) and the Municipality, acting reasonably, approves of this as an Alternative Course of Action;
- iii) As a result of having to prepare Modified Plans and to prepare and implement Work Around Procedures to work around the braces, the actual cost incurred by the Municipality in replacing the sewer line is \$45,000 (being a net increase in cost of \$5,000);

Agenda Item # 8.1.2

the Company is required to pay the \$2,000 cost of the bracing together and the additional cost of \$5,000 incurred by the Municipality (resulting in a net savings of \$3,000 to the Company).

In cases of emergency, the Company will take all measures that are commercially reasonable and necessary to ensure public safety with respect to relocating any part of the Natural Gas Distribution System that may be required in the circumstances.

If the Company fails to complete the relocation of the Natural Gas Distribution System or fails to repair or do anything else required by the Company pursuant to this subparagraph without valid justification and in a timely and expeditious manner to the satisfaction of the Municipality's representative, acting reasonably, the Municipality may, but is not obligated to, complete such relocation or repair and the Company will pay the reasonable costs of such relocation or repair forthwith to the Municipality. If the Municipality chooses to complete such relocation or repair the Municipality will ensure such work is completed using the Company's design specifications and standards, as provided by the Company, including the use of good and safe operating practices.

The Municipality is not responsible, either directly or indirectly, for any damage to the equipment which forms part of the Natural Gas Distribution System which may occur during its installation, maintenance or removal by the Company, nor is the Municipality liable to the Company for any losses, claims, charges, damages and expenses whatsoever suffered by the Company including claims for loss of revenue or loss of profits, on account of the actions of the Municipality, its agents or employees, working in, under, over, along, upon and across its highways and rights-of-ways or other Municipal Property other than direct loss or damage to the Company caused by the negligence or wilful misconduct of the Municipality, its agents or employees.

In the event the relocation or any part thereof requires the approval of a third party, the Municipality will use reasonable efforts to assist the Company in any negotiation with such third party to obtain the necessary approval(s).

In the event the relocation results from the demand or order of an authority having jurisdiction, other than the Municipality, the Municipality will not be responsible for any of the costs of such relocation.

15) Natural Gas Distribution System Expansion

Subject to the Terms and Conditions, and at no cost to the Municipality unless otherwise provided for under the Terms and Conditions, the Company will, on a timely basis, use its best efforts on a commercially reasonable basis to meet the Natural Gas Distribution System expansion requests of the Municipality or a Consumer and provide the requisite facilities for connections for new Consumers to the Natural Gas Distribution System.

16) Increase in Municipal Boundaries

Where the Municipality increases its geographical area, through annexation or amalgamation, as understood under the MGA, by the greater of 640 acres and twenty five (25%) percent of the current area or more, the Municipality will have the option to:

- (a) terminate this Agreement provided the Municipality gives notice in writing to the Company of its intention to do so; or
- (b) add the increased area to the Municipal Service Area already served by the Company so that the rights and obligations contained in this Agreement will apply in respect of the Municipal Service Area, including the increased area.

For all other increases to the Municipal Service Area through annexation or amalgamation as understood under the MGA, the rights and obligations contained in this Agreement will apply in respect of the whole Municipal Service Area, including the increased area.

17) Joint Use of Municipal Rights-of-Way

a) Municipal Use

The Municipality will upon written notice to the Company have, for any reasonable municipal purpose, the right to make use of any municipal rights-of-way granted to the Company by the Municipality, provided such use complies with good and safe operating practices, as determined by the Company acting reasonably, applicable legislation, and does not unreasonably interfere with the Company's use thereof, at no charge to the Municipality. The Municipality is responsible for its own costs and any necessary and reasonable costs incurred by the Company including the costs of any alterations that may be required in using municipal rights-of-way.

b) Third Party Use and Notice

If any third party, including other utilities, desire to jointly use the municipal rights-of-way, the Company agrees it will not grant the third party joint use except in accordance with this paragraph, or unless otherwise directed by any governmental authority or court of law having jurisdiction.

The Company agrees the following procedure will be used in granting permission to third parties desiring joint use of the municipal rights-of-way:

- i) first, the third party will be directed to approach the Company to initially request conditional approval from the Company to use that part of the municipal rights-of-way it seeks to use;
- ii) second, upon receiving written conditional approval from the Company, the third party will be directed to approach the Municipality to obtain its written approval to jointly

use that part of the municipal rights-of-way. As a condition of granting its consent, the Municipality may require such third party enter into an agreement with the Municipality, and such agreement may require such third party pay compensation to the Municipality; and

iii) third, upon receiving written conditional approval from the Municipality, the third party will be directed to obtain final written approval from the Company to jointly use that part of the municipal rights-of-way. Once a joint use agreement has been entered into between the Company and the third party, it will not be subsequently amended without the written consent of the Municipality (which consent will not be unreasonably withheld).

c) Cooperation

The Company and the Municipality agree they will use reasonable efforts to cooperate with each other in encouraging the use of joint trenching and in any negotiations with third parties desiring joint use of any part of the municipal rights-of-way located on Municipal Property.

d) Payment

The compensation paid or to be paid by such third party to the Municipality for the use of the Municipal Property including its rights-of-way, will be determined between the Municipality and the third party.

The compensation paid or to be paid by such third party to the Company for the joint use of any portion of the municipal rights-of-way will be determined between the Company and the third party, subject to the jurisdiction of any governmental authority over the matter and the Municipality's right to intervene in any related regulatory proceeding.

e) Provision of Agreements

Upon reasonable request by the Municipality, copies of these agreements will be updated by the Company and provided to the Municipality at no cost to the Municipality.

18) Municipality as a Retailer

The provisions of this Agreement will not in any way restrict the right of the Municipality to become a retailer within the meaning of the GUA.

19) Reciprocal Indemnification and Liability

a) The Company will indemnify and save the Municipality, its servants, agents, employees, licensees, contractors and invitees, harmless from and against any and all liability, actions, demands, claims, damages, losses and expenses (including all legal costs and disbursements), including indemnity from and against any claim, loss, cost, demand and legal or other expense, whether in respect of any lien, encumbrance or otherwise, arising out of any Work performed

Agenda Item # 8.1.2

by or for the Company, which may be brought against or suffered, sustained, paid or incurred by the Municipality, its servants, agents, employees, contractors, licensees and invitees, arising from, or otherwise caused by:

- i) any breach by the Company of any of the provisions of this Agreement; or
 - ii) the negligence or wilful misconduct of the Company, or any of its servants, agents, employees, licensees, contractors or invitees in carrying on its business within the Municipal Service Area.
- b) The Municipality will indemnify and save the Company, its servants, agents, employees, licensees, contractors and invitees, harmless from and against any and all liability, actions, demands, claims, damages, losses and expenses (including all legal costs and disbursements) which may be brought against or suffered, sustained, paid or incurred by the Company, its servants, agents, employees, licenses, contractors and invitees, arising from, or otherwise caused by:
 - i) any breach by the Municipality of any of the provisions of this Agreement; or
 - ii) the negligence or wilful misconduct of the Municipality, or any of its servants, agents, employees, licensees, contractors or invitees, in carrying on the business of the Municipality.
- c) Notwithstanding anything to the contrary herein contained, in no event will the Municipality or the Company be liable under this Agreement, in any way, for any reason, for any indirect, special or consequential damages (including damages for pure economic loss, loss of profits, loss of earnings or loss of contract), howsoever caused or contributed to.

20) Assignment

In the event the Company agrees to sell the Natural Gas Distribution System to a third party purchaser, the Company will comply with paragraph 10 above. In addition, the Company will request the third party purchaser confirm in writing it will agree to all the terms and conditions of this Agreement between the Company and the Municipality. The Company agrees it will provide to the Municipality a copy of the third party purchaser's confirmation letter.

The Company agrees to provide the Municipality with reasonable prior written notice of a sale of the Natural Gas Distribution System to a third party purchaser. The Parties will thereafter meet to discuss the technical and financial capabilities of the third party purchaser to perform and satisfy all terms and conditions of the Agreement, and the compensation payable to the Municipality for all costs including administrative and legal costs relating to providing its written consent to the Assignment("Municipal Compensation").

The Municipality has thirty (30) days from the meeting date with the Company to provide written notice to the Company of its intention to consent or withhold its consent to the assignment of the Agreement to the third party purchaser. The Company agrees the Municipality may provide notice of its intention to withhold its consent to the assignment of this Agreement to the third party

Agenda Item # 8.1.2

purchaser if the Municipal Compensation is inadequate or if the third party purchaser fails to covenant, in favour of the Municipality, to perform and observe all of the covenants and obligations of the Company to be performed and observed under this Agreement and otherwise solely on the basis of reasonable and material concerns regarding the technical capability or financial wherewithal of the third party purchaser to perform and satisfy all terms and conditions of the Agreement. In this case, such notice to the Company must specify in detail the Municipality's concern.

Should the Municipality not reply within the thirty (30) day period, it is agreed the Municipality will be deemed to have consented to the assignment. The Company further agrees when it applies to the Commission for approval of the sale, it will include in the application any notice received from the Municipality, including the reasons given by the Municipality for withholding its consent. The Municipality will have the right to make its own submissions to the Commission.

Subject to the Company having fulfilled the obligations outlined in the preceding three paragraphs, the Company will be entitled to assign this Agreement to an arm's length third party purchaser of the Natural Gas Distribution System without the consent of the Municipality, subject to paying the Municipal Compensation for the assignment, and having obtained the Commission's approval for the sale of the Natural Gas Distribution System and, the third party purchaser's confirmation in writing that it agrees to all the terms and conditions of this Agreement.

Where the Commission approves such sale of the Natural Gas Distribution System to a third party and the third party provides written confirmation to assume all liabilities and obligations of the Company under this Agreement, then upon the assignment of this Agreement and the payment of the Municipal Compensation for its consent to the Assignment subject to Commission approval, the Company will be released from all its liabilities and obligations thereunder.

The Company will be entitled to assign this Agreement to a subsidiary or affiliate of the Company without the Municipality's written consent. Where the Company assigns this Agreement to a subsidiary or affiliate, the Company will remain jointly and severally liable.

Further, it is a condition of any assignment that the subsidiary, affiliate or third party purchaser, as the case may be, will provide written notice to the Municipality indicating it will assume all liabilities and obligations of the Company under this Agreement.

Any disputes arising under the operation of this paragraph will be submitted to the Commission for determination.

21) Notices

a) All notices, demands, requests, consents, or approvals required or permitted to be given pursuant to the terms of this Agreement will be in writing and will be deemed to have been properly given if personally served, sent by registered mail or sent in Electronic Format to the Municipality or to the Company as the case may be, at the addresses set forth below:

i) To the Company:

- ii) To the Municipality:
- b) The date of receipt of any such notice as given above, will be deemed to be as follows:
 - i) In the case of personal service, the date of service;
 - ii) In the case of registered mail, the seventh (7th) business day following the date of delivery to the Post Office, provided, however, in the event of an interruption of normal mail service, receipt will be deemed to be the seventh (7th) day following the date on which normal service is restored; or
 - iii) In the case of delivery in Electronic Format, the date the notice was actually received by the recipient or, if not a business day, then the next business day.

22) Interruptions or Discontinuance of Delivery Service

Subject to its Delivery Tariff, the Company will use its best efforts on a commercially reasonable basis to avoid and minimize any interruption, reduction or discontinuance of Natural Gas Distribution Service to any Consumer. However, the Company reserves the right to do so for any one of the following reasons:

- a) Where the Company is required to effect necessary repairs or changes to the Natural Gas Distribution System;
- b) On account of or to prevent fraud or abuse of the Natural Gas Distribution System;
- c) On account of defective aspects of the Natural Gas Distribution Systems which in the opinion of the Company, acting reasonably, may become dangerous to life or property;
- d) Where required, under the Terms and Conditions, due to a Consumer's non-payment of Natural Gas bills.

To the extent the Company has any planned major interruptions, reductions or discontinuances in Natural Gas Distribution Service, it will notify the Municipality in writing as soon as practicable in the circumstances. For any other major interruption, reductions or discontinuances in Natural Gas Distribution Service, the Company will provide notice (in a format acceptable to the Municipality) as soon as is practicable in the circumstances.

23) Dispute Settlement

- a) If any dispute or controversy of any kind or nature arises relating to this Agreement or the Parties' rights or obligations hereunder, the Parties agree such dispute or controversy will be resolved by negotiation, and where such negotiation does not result in the settlement of the matter within thirty (30) days of notice of such dispute being provided by one Party to the other Party, and to the extent permitted by law, the Company and Municipality agree that unresolved disputes pertaining to this Agreement, other than those contemplated in paragraphs 3 and 20

and Section 3 of Schedule "A", or those related to the sale of the Natural Gas Distribution System as contemplated in paragraphs 10 and 12 hereof, or any other matter within the exclusive jurisdiction of a governmental authority having jurisdiction, will be submitted to arbitration for determination and may be commenced by either Party providing written notice to the other Party stating the dispute to be submitted to arbitration.

The Parties will attempt to appoint a mutually satisfactory arbitrator within ten (10) business days of the said notice. In the event the Parties cannot agree on a single arbitrator within the ten (10) business days, the dispute will be forwarded to the Commission for resolution or determination.

In the event the Commission declines to assist in resolving the dispute or declines to exercise or claim jurisdiction respecting the dispute, both Parties agree to have the dispute resolved by an arbitration panel in accordance with the following procedure.

Each Party will appoint an arbitrator within the ten (10) business days thereafter by written notice, and the two arbitrators will, together, appoint a third arbitrator within twenty-five (25) business days of written notice for arbitration. The dispute will be heard by the arbitration panel within forty-five (45) business days of the written notice for arbitration unless extended by mutual agreement between the Parties. The arbitration panel will render a decision within twenty (20) business days of the last day of the hearing.

Except, as otherwise expressly provided in this Agreement, the provisions of the Arbitration Act (Alberta) (as amended from time to time) will apply to any arbitration undertaken under this Agreement subject always to the Commission's jurisdiction over any matter submitted to arbitration. Pending resolution of any dispute, the Municipality and the Company will continue to perform their respective obligations hereunder.

- b) The Company will advise the Commission of any dispute submitted to arbitration within ten (10) business days of it being submitted and will advise the Commission of the results of arbitration within ten (10) business days following receipt of the decision of the arbitrator(s).

24) Application of Water, Gas and Electric Companies Act

This Agreement will be deemed to operate as consent by the Municipality to the exercise by the Company of those powers which may be exercised by the Company with the consent of the Municipality under and pursuant to the provisions of the *Water, Gas and Electric Companies Act* (Alberta), as amended.

25) Force Majeure

If either Party fails to meet its obligations hereunder within the time prescribed, and such failure is caused or materially contributed by an event of "force majeure", such failure will be deemed not to be a breach of the obligations of such Party hereunder, but such Party will use its best efforts on a commercially reasonable basis to put itself in a position to carry out its obligations hereunder. The term "force majeure" will mean any acts of God, strikes, lock-outs, or other industrial disturbances, acts of the Queen's enemies, acts of terrorism (either foreign or domestic), sabotage,

war, blockades, insurrections, riots, epidemics, lightening, earthquakes, storms, fires, wash-outs, nuclear and radiation activity or fall-out, restraints of rulers and people, orders of governmental authorities or courts of law having jurisdiction, the inability to obtain any necessary approval from a governmental authority (excluding the Municipality) having jurisdiction, civil disturbances, explosions, mechanical failure, and any other causes similar in nature not specifically enumerated or otherwise specified herein that are not within the control of such Party, and all of which by the exercise of due diligence of such Party could not have been prevented. Lack of finances will be deemed not to be an event of "force majeure".

26) Terms and Conditions

The Terms and Conditions applicable to the Company and approved by the Commission, as revised or amended from time to time by the Commission, will apply to the Municipality. Nothing in this Agreement is intended to supersede the Terms and Conditions.

27) Not Exclusive Against Her Majesty

Notwithstanding anything to the contrary herein contained, it is mutually understood and agreed the rights, powers and privileges conferred and granted by this Agreement will not be deemed to be exclusive against Her Majesty in right of the Province of Alberta.

28) Severability

If for any reason any covenant or agreement contained in this Agreement, or the application thereof to any Party, is to any extent held or rendered invalid, unenforceable or illegal, then such covenant or agreement will be deemed to be independent of the remainder of this Agreement and to be severable and divisible from this Agreement. The invalidity, unenforceability or illegality will not affect, impair or invalidate the remainder of this Agreement or any part thereof. The intention of the Municipality and the Company is that this Agreement would have been executed without reference to any portion which may, for any reason or to any extent, be declared or held invalid, unenforceable or illegal.

29) Amendments

This Agreement may only be amended by written agreement of the Parties, such amendments to be subject to any regulatory approvals required by law.

30) Waiver

A waiver of any default, breach or non-compliance under this Agreement is not effective unless in writing and signed by the Party to be bound by the waiver. No waiver will be inferred from or implied by any failure to act or delay in acting by a Party in respect of any default, breach or non-observance or by anything done or omitted to be done by the other Party.

The waiver by a Party of any default, breach or non-compliance under this Agreement will not operate as a waiver of that Party's rights under this Agreement in respect of any continuing or subsequent default, breach or non-compliance under this Agreement (whether of the same nature or any other nature).

31) Confidentiality

The Company acknowledges the Municipality is governed by the provisions of the *Freedom of Information and Protection of Privacy Act* (Alberta).

IN WITNESS WHEREOF the Parties hereto have executed these presents as of the day and year first above written.

Town of Drumheller

PER: _____

PER: _____

AltaGas Utilities Inc.

PER: _____

PER: _____

SCHEDULE “A” Core Services

The Company will provide to the Municipality the following basic services as Core Services:

- 1) The Company will deliver Natural Gas to the Consumers in accordance with the Company’s Terms and Conditions, the Company’s Distribution Tariff, the GUA, any regulations thereto, and any Commission orders and decisions.
- 2) The Company will install all Natural Gas facilities required to provide service to the Consumers in accordance with all applicable regulations, codes, applicable standards and common industry practices.
- 3) As required by legislation, the Company will provide and install all necessary regulators and meters necessary for measuring the Natural Gas supplied to each Consumer.
- 4) The Company agrees to collaborate with the Municipality’s emergency response services in an effort to mutually develop emergency response procedures relating to Natural Gas emergencies.
- 5) The Company will provide personnel twenty-four (24) hours a day to investigate and make safe any suspected gas leak inside or outside the Consumer’s premises.
- 6) The Company will utilize the services of qualified personnel for designing all Natural Gas facilities to satisfy all applicable regulatory codes and standards, preparing necessary work order plans and monitoring the distribution network pressures to ensure the Company’s facilities will satisfy the Consumer’s current and future Natural Gas delivery requirements.
- 7) The Company will provide to the Municipality, on request, copies of any and all Natural Gas Distribution Service related written or electronic, where available information or reports required to be filed with the Commission by the Company.
- 8) The Company will provide to the Municipality, upon request and to the extent the information is available, an annual report on the following standards:
 - a) **System Reliability** - will be measured by:
 - i. The number of major outages resulting in a loss of service to Consumers;
 - ii. The number of Consumers affected by each major outage; and
 - iii. The duration of each major outage.
 - b) **Consumer Satisfaction** - will be measured by:
 - i. Company-wide call centre targets and statistics (wait times, abandoned calls, call volumes, etc); and
 - ii. any Consumer complaints received by the Commission.

Agenda Item # 8.1.2

c) Public Safety - will be measured by:

- i. the number of customer injuries and/or damages due to Natural Gas Distribution System failure;
- ii. the number of line hits per total locates completed;
- iii. the number of line hits as a result of inaccurate locates;
- iv. the percentage of the area of the Municipality surveyed for leaks and yearly cathodic protection measures;
- v. the number and nature of calls received from the Municipality and any of its Municipal agencies (including fire department, police department etc.) regarding the Natural Gas Distribution System.

9) Once per year, upon request and subject to any applicable privacy legislation, the GUA Code of Conduct Regulation or other rules prohibiting or restricting such disclosure, the Company will provide to the Municipality:

- a) The total number of sites billed within the Municipal Service Area, by Company rate class, per revenue month, for each of the last two (w) years;
- b) The total gigajoules (GJ) of Natural Gas consumed by Consumers billed within the Municipal Service Area, by Company rate class, per revenue month, for each of the last two (2) years;
- c) The franchise fee revenue billed to Consumers within the Municipal Service Area, by Company rate class, per revenue month, for each of the last two(2) years;
- d) Where the Municipality is the customer of record and the Municipality provides a list of those sites to the Company on the form provided by the Company:
 - i. The total number of those sites billed within the Municipal Service Area, by Company rate class, per revenue month, for each of the last two (2) years;
 - ii. The total gigajoules (GJ) of Natural Gas at those sites billed within the Municipal Service Area, by Company rate class, per revenue month, for each of the last two (2) years;
 - iii. The franchise fee revenue billed to those sites within the Municipal Service Area, by Company rate class, per revenue month, for each of the last two (2) years; and
- e) Such other information as may be agreed upon by the Parties from time to time.

Where privacy legislation, the GUA Code of Conduct Regulation or other rules prohibiting such disclosure prevent the Company from providing the information above, the Company will make reasonable attempts to aggregate the information so as to comply with the applicable rules. The

Agenda Item # 8.1.2

Company will not be obligated to provide such aggregated information if it believes such aggregation will not allow the Company to comply with the applicable rules.

- 10) Upon request by either Party, the Company will meet with the Municipality. Through a mutual exchange of information the Company will keep the Municipality apprised of the Company's construction and upgrading programs planned for the Municipal Service Area and the Municipality will advise the Company of any issues or plans relating to, or potentially impacting, the Natural Gas Distribution System.

SCHEDULE "B" Extra Services

Nothing in this Agreement precludes the Parties from contracting for Extra Services outside the provisions of this Agreement. In the event the Parties do elect to contract for the provision of Extra Services within the provisions of this Agreement and unless otherwise agreed upon by the Parties, nothing in this Agreement will preclude the Company from sub-contracting with third parties for the provision of Extra Services.

Subject to Commission approval, as may be required, any payments from the Municipality to the Company for Extra Services, if agreed to by the Municipality, may be deducted from the Franchise Fee collected from Consumers and otherwise remitted to the Municipality pursuant to paragraph 5 of this Agreement. The timing and quantum of such payments will be as agreed upon by the Parties and set forth in (insert paragraph number from Schedule B) of this Schedule.

BYLAW NO. 10-15

Of Drumheller, Alberta

related to the

**NATURAL GAS DISTRIBUTION SYSTEM
FRANCHISE AGREEMENT**



Request for Decision

Date: June 15, 2015


Topic:	Natural Gas Distribution System Franchise Agreement
Proposal:	10 year Franchise Agreement
Proposed by:	Barbara Miller, CGA Director, Corporate Services
Background	<p>The existing franchise agreement between AltaGas and the Town of Drumheller for the provision of natural gas distribution expired in 2015. AltaGas has proposed a new franchise agreement for the continuation of the service; for consideration and adoption by council. The franchise agreement proposed uses the new agreement template that was recently adopted by AUMA and the natural gas and power distribution providers after several months of negotiation between parties.</p> <p>Included in the agenda package is a copy of the existing franchise agreement, the newly proposed agreement, a summary of the changes within the agreement template as a result of negotiations between AUMA and distribution providers and a guideline outlining the renewal process.</p> <p>The term of the agreement is for a minimum of 10 years, but can be greater.</p> <p>The current franchise fee applicable within the Town of Drumheller is twenty-seven percent (27%). AUC has capped franchise fees at thirty-five (35%). Franchise fee %'s can be changed annually, at any time within the year, throughout the 10 year agreement period. Should council choose to exercise its option to increase the franchise fee in the future, a resolution to increase the % is required, followed by a notice of change advertised over a two week period, followed by an objection period, then an application would be sent to the AUC c/w supporting documents. On review, providing that process was properly followed, rate falls within the cap and no written objections received, AUC would issue an order approving the increase in fee. This process takes about 45 days to complete.</p> <p>Administration has met with representatives from AltaGas to review the agreement proposal and discuss changes between the agreements as outlined. There were no concerns.</p>
Benefits:	Through the franchise agreement, AltaGas bears full responsibility of an owner of a Natural Gas distribution system including the construction, operation and maintenance of the natural gas distribution system and to provide the services pursuant to the agreement in accordance with the delivery tariff insofar as applicable (Article 4c).
Disadvantages:	
Alternatives:	The alternative would be for the Town to exercise its right to purchase the natural gas distribution system from AltaGas and become wholly responsible for the construction, operation and maintenance of the natural gas distribution system.

CORPORATE SERVICES

Telephone: (403) 823-1311

	Created By: Barb Miller	1
--	-------------------------	---

Agenda Item # 8.1.3

Finance/Budget Implications:	The franchise agreement has a positive impact on the budget. Franchise fee revenue is included in the operating budget on an annual basis.		
Operating Costs:	n/a	Capital Cost:	n/a
Communication Strategy:	Communication strategy will follow the requirements set by the AUC. Following first (1 st) reading, AltaGas will place notice in the newspaper for two consecutive weeks. We will also advertise the notice on our web site. Following third and final reading, Bylaw 10-15 will be posted on Civic Web.		
Recommendations:	Council to give first reading of Bylaw 10-15 Agreement term – 10 years Franchise fee remain at 27%		
Report Writer:	Barbara Miller, CGA	CAO:	
Position:	Director, Corporate Services		



Request for Decision

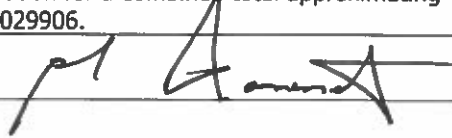
Date: June 11, 2015

Topic:	Sandstone Manor -- Property Taxes Roll# 000 04029906		
Proposal:	<p>The Drumheller Housing Administration has historically requested that the municipal portion of the property taxes be cancelled for the property occupied by the Sandstone Manor.</p> <p>The contract between the Town and the Housing Authority, signed May 19, 2009, appendix 'A' determined that the property would be exempt from municipal taxation, but would still be responsible for the education requisition.</p> <p>This cancellation of the municipal portion of the property tax is reflected in the Sandstone Manor budget, already reviewed by Council.</p> <p>The Municipal Government Act 347(1)(b) provides that Council may cancel or refund part of a tax. The Town is still required to remit the requisitions for the Education and District Seniors Foundation. The decision for the cancellation must be made annually.</p> <p>Current legislation does not permit the Town to make this property exempt from taxation.</p>		
Proposed by:	Drumheller Housing Administration		
Benefits:	Provides tax relief while the property cannot be made exempt from taxation in order to keep rental rates at an affordable level.		
Disadvantages:	This loss of revenue impacts the operating surplus		
Finance/Budget Implications:	<p>With the historical taxation activity with this property, the operating budget includes the cancellation of the municipal portion in account 1-2-1201-911.</p> <p>If Council desires, this cancellation can continue to be budgeted for future years, until legislation permits an assessment exemption for this property.</p>		
Operating Costs:	\$8,686.07	Capital Cost:	\$0
Budget Available:	\$8,686.07	Source of Funds:	Operating budget
Budget Cost:	\$8,686.07	Under budgeted Cost:	\$0
Communication Strategy:			

CORPORATE SERVICES

Telephone: (403) 823-1311

Agenda Item # 8.3.1

Recommendations:	<p>Whereas the Drumheller Housing Administration has historically had the property taxes with the exception of the education requisition cancelled,</p> <p>Whereas the MGA section 347(1)(b) provides Council the authority to cancel or refund taxes, however, this cancellation must be determined annually,</p> <p>Therefore Council approve the cancellation of the 2015municipal portion of the taxes plus the requisition for the District Seniors Foundation for a combined total approximating \$9,000 for the Sandstone Manor Roll Number 04029906.</p>		
Submitted by:	Barbara Miller, CGA	CAO:	
Position:	Director, Corporate Services		