



City of Hamilton
PUBLIC WORKS COMMITTEE

Meeting #: 19-004
Date: March 18, 2019
Time: 9:30 a.m.
Location: Council Chambers, Hamilton City Hall
71 Main Street West

Alicia Davenport, Legislative Coordinator (905) 546-2424 ext. 2729

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| 13.1.a | Items Requiring a New Due Date: | |

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Item on OBL: E

Current Due Date: March 18, 2019

Proposed New Due Date: July 10, 2019

13.1.a.b Feasibility of Joining a Sidewalk from the Mount Hope Urban Boundary to the John C. Munro International Airport Lands

Item on OBL: W

Current Due Date: February 4, 2019

Proposed New Due Date: April 29, 2019

13.1.a.c On Street Parking and Bike Lanes

Item on OBL: X

Current Due Date: February 4, 2019

Proposed New Due Date: April 1, 2019

13.1.a.d Tiger Tail Stop Signs

Item on OBL: AH

Current Due Date: March 18, 2019

Proposed New Due Date: July 10, 2019

14. PRIVATE AND CONFIDENTIAL

15. ADJOURNMENT

4.1



PUBLIC WORKS COMMITTEE MINUTES 19-003

9:30 a.m.

Friday, February 22, 2019

Council Chambers

Hamilton City Hall

71 Main Street West

Present: Councillors L. Ferguson (Chair), J.P. Danko (Vice-Chair), C. Collins, J. Farr, T. Jackson, S. Merulla, N. Nann, E. Pauls, M. Pearson, A. VanderBeek, and T. Whitehead

THE FOLLOWING ITEMS WERE REFERRED TO COUNCIL FOR CONSIDERATION:

1. Intersection Control List (PW19001) (Wards 2, 3, 8, 9, 10, and 12) (Item 7.1)

(Pearson/Whitehead)

That the appropriate By-law be presented to Council to provide traffic control as follows:

Intersection		Stop Control Direction		Class	Comments / Petition	Ward
Street 1	Street 2	Existing	Requested			
Section "A" Ancaster						
(a)	Amberly Boulevard	Concerto Court	SB	All	A	Converting to all-way stop – Cllr approved 12
Section "D" Glanbrook						
(b)	Pinehill Drive	Hyslop Avenue	NB	EB/WB	B	Converting to all-way stop – Cllr approved 9
Section "E" Hamilton						
(c)	Murray Street	Catharine Street	NB/SB	ALL	A	Converting to all-way stop – Cllr approved 2
(d)	MacNab Street	Vine Street	EB/WB	ALL	A	Converting to all-way stop – Cllr approved 2
(e)	Dunsmure Road	Belview Avenue	EB/WB	ALL	A	Converting to all-way stop – Cllr approved 3

Intersection		Stop Control Direction		Class	Comments / Petition	Ward	
Street 1	Street 2	Existing	Requested				
(f)	Hudson Court	Columbia Drive	NC	SB	A	Housekeeping – missing t-type stop sign	8
Section “F” Stoney Creek							
(g)	Sunvale Place	Waterford Crescent	NB/SB	ALL	A	Converting to all-way stop – Cllr approved	10

LegendNo Control Existing (New Subdivision) - **NC**Intersection Class: **A** - Local/Local **B** - Local/Collector **C** - Collector/Collector**Result: Motion CARRIED by a vote of 10 to 0, as follows:**

YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Arlene VanderBeek
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Jason Farr

2. Proposed Permanent Closure and Sale of a Portion of Public Unassumed Alley Abutting 46 Ferguson Avenue South, Hamilton (PW19016) (Ward 2) (Item 8.2)

(Farr/Pauls)

That the application of the owner of 46 Ferguson Avenue South, Hamilton, to permanently close and purchase a portion of the unassumed alleyway running East/West and abutting the North side of 46 Ferguson Avenue, Hamilton, (“Subject Lands”), as shown on Appendix “A” and Appendix “B”, attached to Report PW19016, be approved, subject to the following conditions:

- (a) That the applicant makes an application to the Ontario Superior Court of Justice, under Section 88 of the Registry Act, for an order to permanently close the Subject Lands, if required by the City, subject to:
- (i) The General Manager of Public Works, or designate, signing the appropriate documentation to obtain any required court order; and

- (ii) The documentation regarding any required application to the Ontario Superior Court of Justice being prepared by the applicant, to the satisfaction of the City Solicitor;
- (b) That the applicant be fully responsible for the deposit of a reference plan in the proper land registry office, and that said plan be prepared by an Ontario Land Surveyor, to the satisfaction of the Manager, Geomatics and Corridor Management Section, and that the applicant also deposit a reproducible copy of said plan with the Manager, Geomatics and Corridor Management Section;
- (c) That, subject to any required application to the Ontario Superior Court of Justice to permanently close the Subject Lands being approved:
 - (i) The City Solicitor be authorized and directed to prepare all necessary by-laws to permanently close and sell the alleyway, for enactment by Council;
 - (ii) The Real Estate Section of the Planning and Economic Development Department be authorized and directed to sell the closed alleyway to the owners of 46 Ferguson Avenue South, Hamilton, as described in Report PW19016, in accordance with the City of Hamilton Sale of Land Policy By-law 14-204;
 - (iii) The City Solicitor be authorized to complete the transfer of the Subject Lands to the owners of 46 Ferguson Avenue South, Hamilton, pursuant to an Agreement of Purchase and Sale or Offer to Purchase as negotiated by the Real Estate Section of the Planning and Economic Development Department;
 - (iv) The City Solicitor be authorized and directed to register a certified copy of the by-laws permanently closing and selling the alleyway in the proper land registry office;
 - (v) The Public Works Department publish any required notice of the City's intention to pass the by-laws and/or permanently sell the closed alleyway pursuant to City of Hamilton Sale of Land Policy By-law 14-204;
- (d) That the applicant enters into agreements with any Public Utility requiring easement protection;
- (e) That the applicant enters into private agreements with those property owners abutting the Subject Lands, to allow those property owners unobstructed access to their properties over the Subject Lands; and,
- (f) That the City of Hamilton retain any necessary road widenings to the satisfaction of the Manager, Geomatics and Corridor Management in accordance with the City of Hamilton Official Plan, which according to the

City of Hamilton Official Plan, the necessary widening shall be 2.591 meters.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Arlene VanderBeek
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Terry Whitehead

3. Proposed Permanent Closure and Sale of a Portion of Vansitmart Avenue, Hamilton (PW19018) (Ward 4) (Item 8.3)

(Merulla/Nann)

That the application from Vanpark Imported Automobiles Inc. ("Applicant"), to permanently close and purchase a portion of Vansitmart Avenue, Hamilton ("Subject Lands"), as shown on Appendix "A" and Appendix "B", attached to Report PW19018, be approved, subject to the following conditions:

- (a) That the City Solicitor be authorized and directed to prepare all necessary by-laws to permanently close and sell the highway, for enactment by Council;
- (b) That the Real Estate Section of the Planning and Economic Development Department be authorized and directed to sell the closed highway to the Applicant, in accordance with the City of Hamilton Sale of Land Policy By-law 14-204;
- (c) The City Solicitor be authorized to complete the transfer of the Subject Lands to the Applicant pursuant to an Agreement of Purchase and Sale or Offer to Purchase as negotiated by the Real Estate Section of the Planning and Economic Development Department;
- (d) That the City Solicitor be authorized and directed to register a certified copy of the by-law(s) permanently closing and selling the highway in the proper land registry office;
- (e) That the Public Works Department publish any required notice of the City's intention to pass the by-laws and/or permanently sell the closed highway pursuant to the City of Hamilton Sale of Land Policy By-law 14-204;

- (f) That the Applicant enters into agreements with any Public Utility requiring easement protection;
- (g) That the Applicant be fully responsible for the deposit of a reference plan in the proper land registry office, and that said plan be prepared by an Ontario Land Surveyor to the satisfaction of the Manager, Geomatics and Corridor Management Section, and that the applicant also deposit a reproducible copy of said plan with the Manager, Geomatics and Corridor Management Section; and,
- (h) That the City of Hamilton retain any necessary road widenings to the satisfaction of the Manager, Geomatics and Corridor Management Section in accordance with the City of Hamilton's Official Plan.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Arlene VanderBeek
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Terry Whitehead

4. Blue Box Recyclable Materials Alternate Technologies (Added Item 8.4)

(Jackson/Merulla)

WHEREAS, the City of Hamilton (City) is preparing to issue a Request for Proposals (RFP) for the recycling of blue box recyclables within the next month;

WHEREAS, recyclable material alternative technology providers have expressed an interest in bidding on the City's blue box processing needs;

WHEREAS, it takes a minimum of 6 months to evaluate alternative technologies for the processing of blue box recyclables; and,

WHEREAS, there is a requirement to issue the RFP to avoid service interruptions to City residents;

THEREFORE, BE IT RESOLVED:

- (a) That staff be directed to issue a RFP for the processing of blue box recyclables as intended but that the term not exceed two years plus **up to three** optional **one** year **contracts**; and,

- (b) That staff immediately start the process of developing and issuing a Request for Expression of Interest (RFI) for alternative technology providers to submit their interest in processing the City's blue box recyclables that would potentially lead to another procurement process and contract to commence at the conclusion of the 2 year plus **up to three** optional **one** year contracts, subject to Council approval.

Result: Main Motion, As Amended, CARRIED by a vote of 8 to 2, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 NO - Councillor John-Paul Danko
 NO - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Arlene VanderBeek
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Chad Collins

5. Appropriation Transfer of Funds for Parkdale Ave N & Steel City Court - 2019 Reconstruction Project (PW19019) (Ward 4) (Item 10.1)

(Merulla/Whitehead)

- (a) That the General Manager of Public Works be authorized and directed to proceed with the tender and award of C15-13-18 (HW) to Deso Construction Limited in the amount of \$4,773,280.66 (not including Contingency and Non-Refundable HST) as identified in Appendix "A" to Report PW19019;
- (b) That an appropriation adjustment be approved to increase Capital Project ID 4031919117 (Parkdale – Burlington to north end & Steel City Court) by \$873,000 from \$2,450,000 to \$3,323,000 and that this increase be funded by a transfer from Project ID 4031711016 (2017 Asset Preservation program); and,
- (c) That Capital Project ID 5141971310 (Parkdale – Burlington to north end & Steel City Court) be increased by \$292,000 from \$1,130,000 to \$1,422,000 and that this increase be funded by a transfer from Project ID 5141371301 (2013 Watermain Replacement Coordinated with Road program).

Result: Motion CARRIED by a vote of 8 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann

YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Esther Pauls
 NOT PRESENT - Councillor John-Paul Danko
 NOT PRESENT - Councillor Arlene VanderBeek

6. New All-way Stop Controls – Simcoe Street East at Catharine Street North and Simcoe Street East at Mary Street (Ward 2) (Item 11.1)

(Farr//Merulla)

WHEREAS, the City of Hamilton is committed to creating safe neighbourhoods and vibrant communities; and,

WHEREAS, ensuring the safety of both pedestrians and motorists is a priority;

THEREFORE, BE IT RESOLVED:

- (a) That staff be directed to take the required steps to install new all-way stop controls at the intersections of Simcoe Street East at Catharine Street North and Simcoe Street East at Mary Street; and,
- (b) That the necessary By-law authorizing staff to install all-way stop controls at the intersections Simcoe Street East at Catharine Street North and Simcoe Street East at Mary Street, be prepared.

Result: Motion CARRIED by a vote of 8 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Esther Pauls
 NOT PRESENT - Councillor John-Paul Danko
 NOT PRESENT - Councillor Arlene VanderBeek

7. Additional Report on Vision Zero (Item 11.2)**(Danko/Nann)**

WHEREAS, Vision Zero uses a data-based approach to road safety with the goal of reducing traffic-related serious injuries and fatalities towards the goal of zero;

WHEREAS, Report PW19015 identifies a number of specific action priorities;

WHEREAS, Appendix B of Report PW19015 includes an extensive list of Vision Zero action plan performance measures along with new, enhanced or maintained actions and an assessment of effectiveness;

WHEREAS, Appendix C of Report PW19015 includes a list of potential safety countermeasures which may be funded from a wide range of potential funding sources;

WHEREAS, Direction to the Director of Transportation Services in the motion approved at the January 22, 2016 General Issues Committee (Budget) included item (vi), a regular reporting mechanism and track progress; and,

WHEREAS, the City of Hamilton has a long-standing commitment to improving road safety;

THEREFORE, BE IT RESOLVED:

That staff be directed to prepare an additional report on Vision Zero and report back to the Public Works Committee within six months on the following:

- (a) Comprehensive report on Vision Zero efforts, including and outline of vehicular traffic safety improvements to date, pedestrian safety initiatives, cycling initiatives, and seniors initiatives;
- (b) A summary and estimation of cost of all 2019 traffic safety initiatives that may have been financed through the capital budget, operating budget, Ward area rating budget, or other available funding sources;
- (c) Details of neighborhood outreach programs that have been conducted;
- (d) An analysis of evaluations, which are incorporated as part of the Vision Zero Plan; and,
- (e) Identification of additional improvements that could be made, including Capital, operating and funding implications.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
YES - Councillor Nrinder Nann
YES - Councillor Sam Merulla

YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Arlene VanderBeek

8. Speed Cushions on Robinson St. (between Hess St. S. & Caroline St. S.) and Guise St. E. (between James St. N. & John St. N.) and a Type B Pedestrian Crossover at the Intersection of Charlton Ave. W. & Park St. S. (Ward 2) (Item 11.3)

(Farr/Collins)

WHEREAS, Ward 2 residents along Robinson Street, between Hess Street South and Caroline Street South, submitted a petition for the installation of speed cushions and have identified safety concerns related to vehicle speeds;

WHEREAS, a number of residents have submitted requests for the installation of speed cushions on Guise Street East, between James Street North and John Street North, to reduce vehicle speeds;

WHEREAS, Transportation Operations and Maintenance does not recommend the placement of speed cushions on Robinson Street or Guise Street East but have no objections to their placement;

WHEREAS, the Durand Neighbourhood Association has submitted a request for a Pedestrian Crossover at the intersection of Charlton Avenue West and Park Street South to provide a safer crossing for pedestrians; and,

WHEREAS, Transportation Operations and Maintenance has determined that a Type B Pedestrian Crossover is required based on industry standards;

THEREFORE, BE IT RESOLVED:

- (a) That staff be directed to implement speed cushions on Robinson Street between Hess Street South and Caroline Street South;
- (b) That staff be directed to implement speed cushions on Guise Street East between James Street North and John Street North;
- (c) That staff be directed to install a Type B Pedestrian Crossover at the intersection of Charlton Avenue West and Park Street South;
- (d) That the installation costs be funded from the Ward 2 Area Rating Reserve account (#108052) to an upset limit of \$60,000; and,

- (e) That the Mayor and City Clerk be authorized and directed to execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Arlene VanderBeek

9. Vanier Towers Social Enterprise Kitchen Project Funding (Ward 2) (Added Item 11.4)

(Farr/Collins)

WHEREAS, an exciting kitchen partnership project that will support the development of a community social enterprise designed to build employment opportunities for residents and participants of Vanier Towers is contemplated by the staff, residents and Board of Directors of City Housing Hamilton;

WHEREAS, this innovative kitchen project is in partnership with Wesley Urban Ministries who has private benefactors financially supporting a back area community hydroponic container garden that will grow fruits and vegetables to be integrated in to the meal preparation and overall food security strategy;

WHEREAS, approximately \$50,000 of in-kind dollars have been donated to this effort;

WHEREAS, City Housing Hamilton (CHH) resident engagement and empowerment is a priority for the City Housing Board of Directors and the approximate 15,000 residents; and,

WHEREAS, the Annual Capital budget for CHH is 8 Million dollars yet at the same time, capital needs exceed 15 million annually and therefore CHH has regularly welcomed additional funding from other capital sources like Area Rating Ward Funds;

THEREFORE, BE IT RESOLVED:

- (a) That funding in the amount of \$150,000 from the Ward 2 Area Rating Reserve (#108052) be dedicated toward the Vanier Towers Social Enterprise kitchen project; and,
- (b) That the Mayor and City Clerk be authorized and directed to execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Arlene VanderBeek

10. Appointments to the Hamilton Cycling Committee (Added Item 14.1)

(Merulla/Nann)

That the recommendation be released publicly following approval by Council.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Arlene VanderBeek

11. Appointments to the Keep Hamilton Clean and Green Committee (Added Item 14.2)

(Merulla/Pauls)

That the recommendation be released publicly following approval by Council.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Arlene VanderBeek

FOR INFORMATION:

(a) CHANGES TO THE AGENDA (Item 2)

The Committee Clerk advised of the following changes to the agenda:

1. CONSENT ITEMS (Items 7.1 and 7.2)

7.1 Intersection Control List (PW19001) (Wards 2, 3, 8, 9, 10, 12, and 15) (Item 7.1) – Amended to remove one of the proposed all way stop controls from the listing

7.2 Interview Sub-Committee to the Public Works Committee Minutes - February 15, 2019

2. NOTICES OF MOTION (Item 12.1)

12.1 Vanier Towers Social Enterprise Kitchen Project Funding (Ward 2)

3. PRIVATE & CONFIDENTIAL (Items 14.1 and 14.2)

14.1 Appointments to the Hamilton Cycling Committee (distributed under separate cover)

14.2 Appointments to the Keep Hamilton Clean and Green Committee (distributed under separate cover)

(Pauls/Whitehead)

That the agenda for the February 22, 2019 Public Works Committee meeting be approved, as amended.

Result: Motion CARRIED by a vote of 9 to 0, as follows:

YES - Councillor Nrinder Nann
YES - Councillor Sam Merulla
YES - Councillor Tom Jackson
YES - Councillor Esther Pauls
YES - Councillor John-Paul Danko
YES - Chair Lloyd Ferguson
YES - Councillor Terry Whitehead
YES - Councillor Arlene VanderBeek
YES - Councillor Maria Pearson
NOT PRESENT - Councillor Jason Farr
NOT PRESENT - Councillor Chad Collins

(b) DECLARATIONS OF INTEREST (Item 3)

There were no declarations of interest.

(c) APPROVAL OF MINUTES OF THE PREVIOUS MEETING (Item 4)

(i) February 4, 2019 (Item 4.1)

(VanderBeek/Pearson)

That the Minutes of the February 4, 2019 meeting of the Public Works Committee be approved, as presented.

Result: Motion CARRIED by a vote of 9 to 0, as follows:

YES - Councillor Nrinder Nann
YES - Councillor Sam Merulla
YES - Councillor Tom Jackson
YES - Councillor Esther Pauls
YES - Councillor John-Paul Danko
YES - Chair Lloyd Ferguson
YES - Councillor Terry Whitehead
YES - Councillor Arlene VanderBeek
YES - Councillor Maria Pearson
NOT PRESENT - Councillor Jason Farr
NOT PRESENT - Councillor Chad Collins

(d) DELEGATION REQUESTS (Item 6)

- (i) Peter Burroughs, respecting South Service Rd. Between Belgraden Ave. and Dewitt Rd. Being a Dangerous Road without Proper Signage (For a future meeting) (Item 6.1)**

(Pearson/VanderBeek)

That the delegation request, submitted by Peter Burroughs, respecting South Service Rd. Between Belgraden Ave. and Dewitt Rd. Being a Dangerous Road without Proper Signage, be approved for a future meeting.

Result: Motion CARRIED by a vote of 9 to 0, as follows:

YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Arlene VanderBeek
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Jason Farr
 NOT PRESENT - Councillor Chad Collins

- (ii) Jodi Formosi and Michael Miscio, Amalattera Inc., respecting an Alternative Waste Management Approach and Technology in Respect of the Pending RFP for the Materials Recycling Facility (For today's meeting) (Item 6.2)**

(Jackson/Whitehead)

That the delegation request, submitted by Jodi Formosi and Michael Miscio, Amalattera Inc., respecting an Alternative Waste Management Approach and Technology in Respect of the Pending RFP for the Materials Recycling Facility, be approved for today's meeting.

Result: Motion CARRIED by a vote of 9 to 0, as follows:

YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Arlene VanderBeek
 YES - Councillor Maria Pearson

NOT PRESENT - Councillor Jason Farr
NOT PRESENT - Councillor Chad Collins

(e) CONSENT ITEMS (Item 7)

(i) Interview Sub-Committee to the Public Works Committee Minutes - February 15, 2019 (Added Item 7.2)

(Merulla/Pauls)

That the Minutes of the February 15, 2019 meeting of the Interview Sub-Committee to the Public Works Committee be received, as presented.

CARRIED

(f) PUBLIC HEARINGS/DELEGATIONS (Item 8)

(i) Ken Rayner, Infrastructure Health & Safety Association (IHSA), respecting the Certificate of Recognition (COR™) Program (Approved by the Public Works Committee on February 4, 2019) (Item 8.1)

Ken Rayner, Infrastructure Health & Safety Association (IHSA), addressed the Committee respecting the Certificate of Recognition (COR™) Program, with the aid of a presentation and handouts. The presentation and handouts have been included in the official record.

(Jackson/Danko)

That Ken Rayner, Infrastructure Health & Safety Association (IHSA), be permitted to address the Committee for an additional 5 minutes in order to complete his presentation.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
YES - Councillor Nrinder Nann
YES - Councillor Sam Merulla
YES - Councillor Chad Collins
YES - Councillor Tom Jackson
YES - Councillor Esther Pauls
YES - Councillor John-Paul Danko
YES - Chair Lloyd Ferguson
YES - Councillor Arlene VanderBeek
YES - Councillor Maria Pearson
NOT PRESENT - Councillor Terry Whitehead

(Pauls/Danko)

That the presentation and handouts from Ken Rayner, respecting the Certificate of Recognition (COR™) Program, be received.

CARRIED

A copy of the presentation and handouts are available on the City's website or through the Office of the City Clerk.

(Pearson/Danko)

That staff be directed to review the presentation and handouts from Ken Rayner, Infrastructure Health & Safety Association (IHSA), respecting the Certificate of Recognition (COR™) Program, and report back to the Public Works Committee, including a recommendation regarding the City of Hamilton's involvement in the Program.

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Arlene VanderBeek
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Terry Whitehead

(ii) Proposed Permanent Closure and Sale of a Portion of Public Unassumed Alley Abutting 46 Ferguson Avenue South, Hamilton (PW19016) (Ward 2) (Item 8.2)

Chair Ferguson advised that notice of the Proposed Permanent Closure and Sale of a Portion of Public Unassumed Alley Abutting 46 Ferguson Avenue South, Hamilton (PW19016) (Ward 2) was given as required under the City's By-law #14-204 – the Sale of Land Policy By-law.

The Committee Clerk advised that there were no registered speakers.

The Chair asked three times if there were any members of the public in attendance who wished to come forward to speak to the matter. No individuals came forward.

(Pearson/Pauls)

That the public meeting be closed.

CARRIED

For disposition of this matter, refer to Item 2.

(iii) Proposed Permanent Closure and Sale of a Portion of Vansitmart Avenue, Hamilton (PW19018) (Ward 4) (Item 8.3)

Chair Ferguson advised that notice of the Proposed Permanent Closure and Sale of a Portion of Vansitmart Avenue, Hamilton (PW19018) (Ward 4) was given as required under the City's By-law #14-204 – the Sale of Land Policy By-law.

The Committee Clerk advised that there were no registered speakers.

The Chair asked three times if there were any members of the public in attendance who wished to come forward to speak to the matter. No individuals came forward.

(Pearson/VanderBeek)

That the public meeting be closed.

CARRIED

For disposition of this matter, refer to Item 3.

(iv) Jodi Formosi and Michael Miscio, Amalatterra Inc., respecting an Alternative Waste Management Approach and Technology in Respect of the Pending RFP for the Materials Recycling Facility (Approved by the Public Works Committee on February 22, 2019) (Added Item 8.4)

Jodi Formosi and Michael Miscio, Amalatterra Inc., addressed the Committee respecting an Alternative Waste Management Approach and Technology in Respect of the Pending RFP for the Materials Recycling Facility, with the aid of a presentation and handouts. The presentation and handouts have been included in the official record.

(Jackson/Danko)

That Jodi Formosi and Michael Miscio, Amalatterra Inc., be permitted to address the Committee for an additional 10 minutes in order to complete their presentation.

Result: Motion CARRIED by a vote of 9 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson

YES - Councillor Arlene VanderBeek
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Esther Pauls
 NOT PRESENT - Councillor Terry Whitehead

(Whitehead/Jackson)

That the presentation and handouts from Jodi Formosi and Michael Miscio, Amalatterra Inc., respecting an Alternative Waste Management Approach and Technology in Respect of the Pending RFP for the Materials Recycling Facility, be received.

CARRIED

A copy of the presentation and handouts are available on the City's website or through the Office of the City Clerk.

(Jackson/Merulla)

WHEREAS, the City of Hamilton (City) is preparing to issue a Request for Proposals (RFP) for the recycling of blue box recyclables within the next month;

WHEREAS, recyclable material alternative technology providers have expressed an interest in bidding on the City's blue box processing needs;

WHEREAS, it takes a minimum of 6 months to evaluate alternative technologies for the processing of blue box recyclables; and,

WHEREAS, there is a requirement to issue the RFP to avoid service interruptions to City residents;

THEREFORE, BE IT RESOLVED:

- (a) That staff be directed to issue a RFP for the processing of blue box recyclables as intended but that the term not exceed two years plus one optional year, and;
- (b) That staff immediately start the process of developing and issuing a Request for Expression of Interest (RFI) for alternative technology providers to submit their interest in processing the City's blue box recyclables that would potentially lead to another procurement process and contract to commence at the conclusion of the 2 year plus one optional year contract, subject to Council approval.

(Jackson/Merulla)

That sub-sections (a) and (b) of the motion, respecting Blue Box Recyclable Materials Alternate Technologies, be amended to read as follows:

- (a) That staff be directed to issue a RFP for the processing of blue box recyclables as intended but that the term not exceed two years plus **one up to three** optional **one** year **contracts**; and,
- (b) That staff immediately start the process of developing and issuing a Request for Expression of Interest (RFI) for alternative technology providers to submit their interest in processing the City's blue box recyclables that would potentially lead to another procurement process and contract to commence at the conclusion of the 2 year plus **one up to three** optional **one** year **contracts**, subject to Council approval.

Result: Amendment CARRIED by a vote of 8 to 2, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 NO - Councillor John-Paul Danko
 NO - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Arlene VanderBeek
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Chad Collins

For disposition of this matter, refer to Item 4.

(g) STAFF PRESENTATIONS (Item 9)

(i) Annual Presentation from the Hamilton Cycling Committee (Item 9.1)

Ms. Ann McKay and Ms. Kate Berry, Members of the Hamilton Cycling Committee, made their annual presentation to the Committee. The presentation has been included in the official record.

(Farr/Whitehead)

That the presentation from the Hamilton Cycling Committee, be received.

CARRIED

A copy of the presentation is available on the City's website or through the Office of the City Clerk.

(h) NOTICES OF MOTION (Item 12)**(i) Vanier Towers Social Enterprise Kitchen Project Funding (Ward 2)
(Added Item 12.1)**

Councillor Farr introduced a Notice of Motion respecting Vanier Towers Social Enterprise Kitchen Project Funding (Ward 2).

(Farr/Whitehead)

That the Rules of Order be waived to allow for the introduction of a Motion respecting Vanier Towers Social Enterprise Kitchen Project Funding (Ward 2).

Result: Motion CARRIED by a 2/3's majority by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Arlene VanderBeek

For disposition of this matter, refer to Item 9.

(i) GENERAL INFORMATION / OTHER BUSINESS (Item 13)**(i) Amendments to the Outstanding Business List (Item 13.1)****(Pearson/Whitehead)**

That the following amendments to the Public Works Committee's Outstanding Business List, be approved:

(a) Items requiring a new due date:

(i) Full Review of Aberdeen Ave. from Queen to Longwood
 Item on OBL: B
 Current Due Date: Q1 2019
 Proposed New Due Date: April 15, 2019

- (ii) Making Upper James Street More Pedestrian Friendly
Item on OBL: E
Current Due Date: Q4 2018
Proposed New Due Date: March 18, 2019
- (iii) Inclusion of the Claremont access in HSR Route Rationalization Study
Item on OBL: G
Current Due Date: September 17, 2018
Proposed New Due Date: April 29, 2019
- (iv) Annual Clean and Green Strategy Progress Update
Item on OBL: H
Current Due Date: September 17, 2018
Proposed New Due Date: September 16, 2019
- (v) Waste Management System Development – Public Engagement Strategy Results and Preliminary Waste Management System Alternatives
Item on OBL: I
Current Due Date: Q1 2019
Proposed New Due Date: June 17, 2019
- (vi) Functional Traffic Study for Kenilworth Avenue from Main Street to Barton Street
Item on OBL: J
Current Due Date: Q1 2018
Proposed New Due Date: August 14, 2019
- (vii) PRESTO Operating Agreement
Item on OBL: N
Current Due Date: January 1, 2019
Proposed New Due Date: April 15, 2019
- (viii) Sackville Hill Seniors Recreation Centre's Expansion
Item on OBL: Q
Current Due Date: April 1, 2019
Proposed New Due Date: September 30, 2019
- (ix) Emergency Shoreline Protection Works
Item on OBL: R
Current Due Date: April 1, 2019
Proposed New Due Date: July 10, 2019
- (x) Hamilton's Beaches
Item on OBL: S
Current Due Date: January 14, 2019
Proposed New Due Date: June 17, 2019

- (xi) Hamilton-Halton Homebuilders' Association (HHHBA)
Delegation on Water Main Approval Issues and
Recommendations for Masterwater/wastewater Servicing
Studies
Item on OBL: T
Current Due Date: March 18, 2019
Proposed New Due Date: May 13, 2019
 - (xii) Red Hill Valley Project Integrated Environmental Monitoring
Program
Item on OBL: Z
Current Due Date: February 22, 2019
Proposed New Due Date: April 15, 2019
- (b) Items to be removed:
- (i) Strategic Energy Initiatives: Hydro One
Item on OBL: D

Result: Motion CARRIED by a vote of 10 to 0, as follows:

YES - Councillor Jason Farr
 YES - Councillor Nrinder Nann
 YES - Councillor Sam Merulla
 YES - Councillor Chad Collins
 YES - Councillor Tom Jackson
 YES - Councillor Esther Pauls
 YES - Councillor John-Paul Danko
 YES - Chair Lloyd Ferguson
 YES - Councillor Terry Whitehead
 YES - Councillor Maria Pearson
 NOT PRESENT - Councillor Arlene VanderBeek

(j) PRIVATE AND CONFIDENTIAL (Item 14)

As Committee determined that discussion of Items 14.1 and 14.2 was not required in Closed Session; those items were addressed in Open Session, as follows:

(i) Appointments to the Hamilton Cycling Committee (Added Item 14.1)

For disposition of this matter, refer to Item 10.

(ii) Appointments to the Keep Hamilton Clean and Green Committee (Added Item 14.2)

For disposition of this matter, refer to Item 11.

(k) ADJOURNMENT (Item 15)

(Pearson/Danko)

That there being no further business, the Public Works Committee be adjourned at 1:03 p.m.

Respectfully submitted,

Councillor L. Ferguson
Chair, Public Works Committee

Alicia Davenport
Legislative Coordinator
Office of the City Clerk

6.1

Form: Request to Speak to Committee of Council

Submitted on Wednesday, February 27, 2019 - 9:19 pm

==Committee Requested==

Committee: Public Works Committee

==Requestor Information==

Name of Individual: Anne Pearson and Gail Rappolt

Name of Organization: United Nations Association in
Canada Hamilton Branch and Culture of Peace Hamilton

Contact Number: 905 527-0470

Email Address: gail.cophamilton@gmail.com

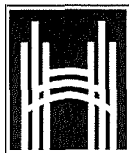
Mailing Address:



Reason(s) for delegation request: We wish to speak in April 2019 to request that City Council take a firm stance on the use of plastics in the city in preparation for the April 25th Peace Luncheon focused on reducing plastic use.

Will you be requesting funds from the City? No

Will you be submitting a formal presentation? Yes

7.1

Hamilton

MINUTES

Keep Hamilton Clean & Green Committee
 Tuesday January 22, 2019
 5:00 pm
 Hamilton City Hall, Room 193
 71 Main Street East
 Hamilton, ON

Present: Chair: Larry Husack
 Vice-Chair: Ron Speranzini
 Members: Alan Mills
 Rick Lipsitt
 Marisa DiCenso
 Lennox Toppin

Absent with
 Regrets: Councillor Nann, Sue Dunlop, Mallory Pace

Absent without
 Regrets: Bruce Thomson

Also Present: Kerry Le Clair, Lottridge Alley Group
 Liz Tobin, Lottridge Alley Group
 Brenda Duke, Beautiful Alleys
 Ken Coit, Manager, Placemaking, Public Art and Projects, Planning
 & Economic Development
 Jennifer DiDomenico, Manager, Policy & Programs, Public Works
 Florence Pirrera, Community Program Analyst, Business Programs,
 Public Works
 Diedre Rozema, Clean & Green Coordinator, Policy & Programs,
 Public Works

Minutes: Diedre Rozema

1. WELCOME AND INTRODUCTIONS

Chair Larry Husack welcomed guests to the meeting.

2. APPROVAL OF AGENDA

Staff requested that the agenda be amended to add Items 7.1.2 (Upcoming dates / events) and 7.1.3 (Team Up to Clean Up).

(Di Censo / Lipsitt)

That the agenda for the January 22, 2019 KHCG Committee meeting be approved as amended.

CARRIED

3. DECLARATIONS OF INTEREST

None declared.

4. CONSENT ITEMS

N/A

5. PRESENTATIONS

5.1 LOTTRIDGE ALLEY GROUP

Kerry and Liz from the Lottridge Alley Group presented information about the group's Clean & Green Neighbourhood Grant project. The Lottridge Alley Group received a \$500 Clean & Green Neighbourhood Grant in 2018 to complete clean-up, beautify and improve waste options in their local alleyway located north of Barton St E between Lottridge and Sherman.

Due to the reduced number of volunteers able to participate in 2018 compared to 2017, the clean up project in 2018 was different than the group had planned. Initial plans for 2018 were to replant the garden beds, reduce the amount of litter and improve lighting. Although the gardening efforts were successful, the lighting and garbage receptacles that were installed by the group were taken or vandalized.

As a result, the group will set realistic expectations based on the time and available resources they have to dedicate to the project.

Committee members thanked the group for their hard work in 2018, congratulated the group members on their successes and encouraged them to continue their great work (as time and resources permit) going forward.

5.2 TRAFFIC SIGNAL BOX WRAPS

Ken Coit, Manager of Placemaking, Public Art and Projects with the City of Hamilton, presented information about this anti-graffiti initiative to wrap traffic signal and street light electrical boxes in the downtown and Community Improvement Plan areas. The wraps will feature the work of local artists or tell heritage stories (depending on the wrap location and specific funding source). The program will generally follow the City of Hamilton's public art process to determine which stories the community want to be told by this art.

The project is currently anticipated to be a pilot for downtown and commercial areas which have approximately 173 boxes to be considered. Some additional work remains to determine how the units will be maintained. There is potential for this model to be applied city wide if successful.

6. MINUTES OF PREVIOUS MEETING

6.1. Minutes of November 20, 2018

(Lipsitt / Speranzini)

That the Keep Hamilton Clean & Green Advisory Committee Meeting Minutes, dated November 20, 2018 be approved as presented.

CARRIED

6.2. Business arising from minutes and notes: none

7. DISCUSSION ITEMS

7.1. Administrative

7.1.1. 2018 Budget

Staff presented the Committee's 2018 expenses. Committee members had no concerns about the Committee's 2018 expenses.

7.1.2. Upcoming Dates

Staff shared information about upcoming dates:

- **April/May 2019:** Citizen recruitment process for advisory committees is anticipated to be complete. Current committee members will continue to meet in the meantime.

Committee members felt that it would be beneficial to their work if Council representatives' participation with the Advisory Committee ended at the same time as the end of the term of citizen representatives. Under the current process, citizen representatives will continue to meet for approximately 8 months without the Council representatives that supported them during the 2014-2018 term. One possible solution identified by the Committee to help address this concern is that Clerks begin the recruitment process in advance of the municipal election so that the new citizen representatives are selected and in place to coincide with the start of each term of City Council when Council appointees to Advisory Committees are identified.

The staff liaison will send the Committee's concerns to the City Clerk for their information.

- **February 6-8, 2019:** Keep America Beautiful National Conference in Baltimore, MD. The KHCG Staff Liaison will be attending this conference on behalf of the Committee and will report back on lessons learned at the next KHCG meeting.
- **February 19, 2019:** KHCG meeting at 5:00 pm in City Hall Room 193.

Committee members shared additional information about community events that are of interest to the Committee:

- **January 29, 2019:** The City of Burlington is hosting a public information session focused on the Private Tree Bylaw pilot project. Interested Committee members can see: Burlington.ca/privatetree. This project may be something for the Committee to watch as it may include information relevant or useful to consider in Hamilton's Urban Forest Strategy.
- **February 2, 2019:** Seedy Saturday will be held from 10 am – 3 pm at St Lawrence Catholic Elementary School (88 Macaulay Street East). The event is a seed swap and includes workshops and a marketplace.

Brenda Duke from Beautiful Alleys shared the following information about the spring cleanup:

- **April 27, 2019:** Beautiful Alleys spring cleanup. The group has also received a grant to complete improvement and beautification work in the alley between Grant and Fullerton.

7.1.3 Team Up to Clean Up

Staff presented a summary of volunteer participation based on registration data. Participation decreased very slightly in 2018. Committee members discussed possible ways to increase participation from the community and schools. Ron and Larry volunteered to participate in a working group. Diedre will schedule a time to meet as a working group.

7.2. Clean & Green Neighbourhood Grant

7.2.1. 2019 grant deadlines

Staff proposed a timeline for the 2019 Clean & Green Neighbourhood Grant process. Committee members had no concerns with the proposed timeline as long as the 3-week long application period provides applicants with enough time to prepare their application.

7.2.2. Adjudication process and request for volunteers

Staff provided information about the Adjudication role for the Clean & Green Neighbourhood Grant applications. The process will be very similar to the adjudication process used in 2018. KHCG members can support the process by sharing grant info with potential applicants. Lennox will share information at Seedy Saturday (details above under item 7.1.2).

Staff requested support from 3-4 KHCG Members to volunteer to participate on the Grants Working Group. The following Committee members volunteered: Lennox, Ron and Rick.

(Mills / Di Censo)

That the 2019 Clean & Green Neighbourhood Grants timelines and process be approved as presented.

CARRIED

7.3. Cigarette Litter Prevention Program update

Staff provided a summary of work completed since September 2018 and presented an example of the finalized campaign graphics. Committee members discussed opportunities that the Committee could actively support the campaign.

Committee members suggested that staff provide opportunities for neighbourhood groups or small businesses outside of project focus areas to participate. This will be incorporated into the project plan.

7.4. Looking ahead: Clean & Green Strategy upcoming challenges

Since current Committee members are now expected to continue to meet until April, this item was deferred to a future meeting.

8. MOTIONS

None.

9. NOTICE OF MOTIONS

None.

10. GENERAL INFORMATION / OTHER BUSINESS

10.1 Committee member thank you

The Chair and Vice Chair presented members with certificates of appreciation. Thank you cards will be sent to the 2015-2018 Council representatives to acknowledge their support during the term.

11. ADJOURNMENT

(Lipsitt / Toppin)

That, there being no further business, the meeting be adjourned at 7:05 p.m.

CARRIED

Next Meeting: Tuesday, February 19, 2019 City Hall, Room 193



INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	March 18, 2019
SUBJECT/REPORT NO:	GO Expansion Full Business Case (PED19061) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Steve Molloy (905) 546-2424 Ext. 2975
SUBMITTED BY:	Brian Hollingworth Director, Transportation Planning and Parking Planning and Economic Development Department
SIGNATURE:	

Council Direction:

The City of Hamilton Transportation Master Plan (TMP) was approved by Council in August 2018. Action 19 of the TMP is to “advocate Metrolinx to accelerate the plans to provide two-way, all-day, service on the Lakeshore West corridor to Hamilton, with extensions to Niagara Region by 2020”.

Information:

In March 2018, Metrolinx adopted the 2041 Regional Transportation Plan (2041 RTP) for the Greater Toronto and Hamilton Area (GTHA). The 2041 RTP identifies three Regional Rail projects within the City of Hamilton:

- Confederation GO Extension (West Harbour GO – Confederation GO);
- Niagara GO Service (Confederation GO – Niagara Falls GO); and,
- Lakeshore West 15-minute GO Service Extension (Aldershot GO – Hamilton GO).

The 2041 RTP did not assign a specific timing to the implementation of these projects but included directions to refine priorities and implementation plans as part of the next stage of work, which is now underway.

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SUBJECT: GO Expansion Full Business Case (PED19061) (City Wide) - Page 2 of 3

In December 2018, the Metrolinx Board of Directors received and endorsed a major report on GO Rail Expansion entitled GO Expansion Full Business Case, November 2018. The purpose of this business case was to illustrate the proposed investment program, its benefits and costs, and the core requirements to successfully implement the program to decision makers, the public, and funding partners. Key benefits of the overall investment across the GTHA, articulated in the business case, include travel time savings, more jobs and increased productivity, more efficient train service, and opportunities for private sector partnerships. The estimated cost of the system enhancements is estimated at \$16.2 Billion over its lifecycle, including \$12.2 Billion in capital and \$4.3 Billion in incremental operating costs. The Net Present Value (NPV – benefits minus costs) for GO Expansion is \$26 Billion, leading to a Benefit Cost Ratio (BCR) of 2.6.

The Full Business Case evaluates a Reference Concept Design (RCD). Within and around Hamilton, the RCD is described as including the following:

- Two-way all-day service between Union and Hamilton, fifteen minute service or better between Burlington and Union; and,
- Electrification from Union Station to Burlington Station.

Assumed frequencies in comparison to existing conditions are summarized in the table below.

	Confederation	Hamilton GO Centre (Hunter)	West Harbour	Aldershot (Burlington)
Existing				
A.M. Peak	No service	Every 30 minutes (four trains)	Two trains	Every 30 minutes
Off-peak	No service	No service	No service	No service
Reference Concept				
A.M. Peak	Every 30 minutes one-way Eastbound (EB)	Every hour one-way EB	Every 30 minutes one-way EB	Every 30 minutes EB; Every hour WB
Off-peak	Every hour two-way	No service	Every hour two-way	Every hour two-way

It is noted that the RCD does not appear to include two-way service in the A.M. peak to either Hamilton GO or West Harbour. That is, no trains from Toronto to Hamilton. However, there would be two-way service to West Harbour and Confederation Stations

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SUBJECT: GO Expansion Full Business Case (PED19061) (City Wide) - Page 3 of 3

in the off-peak. This is assumed to be a result of rail corridor capacity constraints as discussed below.

The Full Business Case does not provide specific timeframes for each corridor, but it is noted that the assumption is the RCD will be implemented by 2031, for the purpose of calculating benefits.

Since 2018, there has been several minor enhancements to rail service potentially benefitting Hamilton residents/employees, and others are planned. These include:

- Extension of the 6:29 a.m. train at West Harbour to start in Niagara Falls at 5:19 a.m. Provides link from Niagara into Hamilton in morning;
- Improved train frequencies between Burlington station and Toronto;
- Continued construction progress on the Confederation Station, with a target opening of later in 2019; and,
- Track improvements and bridge work between West Harbour and Confederation Station (on-going).

Over the years, there have been many formal and informal discussions involving Metrolinx representatives, members of City of Hamilton Council, Members of Provincial Parliament, and senior staff. Through these discussions, two common obstacles to a more reasonable timeframe for implementation of rail service improvements are cited. The first relates to the capacity of Bayview Junction (the junction between the two Canadian National (CN) tracks and the Canadian Pacific (CP) tracks near the High-Level Bridge) and difficulties negotiating rights of access with CN Rail. Currently, Metrolinx does not own all of the rail corridor through Hamilton and therefore requires access from CN for service through to Niagara. More recent discussions with Metrolinx have indicated that gaining access from CN is a more significant barrier than the Bayview Junction, and that more focused negotiations are underway.

While the Full Business Case is helpful in clarifying what is planned for improvements to Hamilton in the longer term, there are many uncertainties regarding when Hamilton will see improved rail service in the near term. In addition, the lack of reverse peak (Toronto to Hamilton) rail service in the A.M. peak (and presumably leaving Hamilton in the P.M. peak) is concerning from an economic development perspective and also in terms of managing congestion on the highway system.

City staff will continue to work with and request regular updates from Metrolinx on the delivery of improved rail service to and from Hamilton.

SM:cr

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CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Engineering Services Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	March 18, 2019
SUBJECT/REPORT NO:	Proposed Permanent Closure and Sale of a Portion of Road Allowance Abutting 600 5 th Concession Road West, Flamborough (PW19027) (Ward 15)
WARD(S) AFFECTED:	Ward 15
PREPARED BY:	Gary Kirchknopf (905) 546-2424 Ext. 7217 Cetina Farruggia (905) 546-2424 Ext. 5803
SUBMITTED BY:	Gord McGuire Director, Engineering Services Public Works
SIGNATURE:	

RECOMMENDATION

That the application of the owner of 600 5th Concession Road West, Flamborough, to permanently close and purchase a portion of road allowance abutting the East side of 600 5th Concession Road West, Flamborough ("Subject Lands"), as shown on Appendix "A", attached to Report PW19027, be approved, subject to the following conditions:

- (a) That the City Solicitor be authorized and directed to prepare all necessary by-laws to permanently close and sell the highway, for enactment by Council;
- (b) That the Real Estate Section of the Planning and Economic Development Department be authorized and directed to sell the closed highway to the owners of 600 5th Concession Road West, Flamborough, in accordance with the City of Hamilton Sale of Land Policy By-law 14-204;
- (c) The City Solicitor be authorized to complete the transfer of the Subject Lands to 600 5th Concession Road West, Flamborough pursuant to an Agreement of Purchase and Sale or Offer to Purchase as negotiated by the Real Estate Section of the Planning and Economic Development Department;

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**SUBJECT: Proposed Permanent Closure and Sale of a Portion of Road Allowance
Abutting 600 5th Concession Road West, Flamborough
(PW19027) (Ward 15) - Page 2 of 4**

- (d) That the City Solicitor be authorized and directed to register a certified copy of the by-law(s) permanently closing and selling the highway in the proper land registry office;
- (e) That the Public Works Department publish any required notice of the City's intention to pass the by-laws and/or permanently sell the closed highway pursuant to the City of Hamilton Sale of Land Policy By-law 14-204;
- (f) That the applicant be fully responsible for the deposit of a reference plan in the proper land registry office, and that said plan be prepared by an Ontario Land Surveyor to the satisfaction of the Manager, Geomatics and Corridor Management Section, and that the applicant also deposit a reproducible copy of said plan with the Manager, Geomatics and Corridor Management Section.

EXECUTIVE SUMMARY

The owner of 600 5th Concession Road West, Flamborough, has made an application to permanently close and purchase a portion of the road allowance abutting the east side of the property. The applicant proposes this closure in order to acquire legal access to the rear of his property in order to satisfy requirements associated with Site Plan Application MDAR-17-221. As there were no objections from any City Departments, Divisions, or Public Utilities, and no objections from any abutting land owners, staff are in support of the closure and sale of the Subject Lands to the owner of 600 5th Concession Road West, Flamborough.

Alternatives for Consideration – See Page 4

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The applicant has paid the Council approved user fee of \$4,543.00. The Subject Lands will be sold to the owners of 600 5th Concession Road West, Flamborough, as determined by the Real Estate Section of the Planning and Economic Development Department, in accordance with the City of Hamilton Sale of Land Policy By-law 14-204.

Staffing: An agreement to purchase the Subject Lands will be negotiated by the Real Estate Section of the Planning and Economic Development Department.

Legal: The City Solicitor will prepare all necessary by-laws to permanently close and sell the Subject Lands and will register such by-laws in the Land Registry Office once Council has approved the by-law. The by-law does not take effect until the certified copy of the by-law is registered in the proper land

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**SUBJECT: Proposed Permanent Closure and Sale of a Portion of Road Allowance
Abutting 600 5th Concession Road West, Flamborough
(PW19027) (Ward 15) - Page 3 of 4**

registry office. The City Solicitor will complete the transfer of the Subject Lands to the owners of 600 5th Concession Road West, Flamborough, pursuant to an agreement negotiated by the Real Estate Section of the Planning and Economic Development Department.

HISTORICAL BACKGROUND

The Subject Lands are a portion of the original unopened road allowance between Lots 12 and 13, Concession 4, West Flamborough. On August 7, 2018, staff received an application from the owner of 600 5th Concession Road West, Flamborough to close and purchase a portion of the Subject Lands in order to acquire lands needed to create an additional legal access to the rear of his property to satisfy requirements associated with Site Plan Application MDAR-17-221. As there were no objections from any City Departments, Divisions, or Public Utilities, and no objections from any abutting land owners, staff are in support of the closure and sale of the Subject Lands to the owner of 600 5th Concession Road West, Flamborough.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

A by-law must be passed to permanently close the lands in accordance with the Municipal Act, 2001.

RELEVANT CONSULTATION

The following City Departments and Divisions and Public Utilities were provided with a copy of this application and invited to provide comments:

- Planning and Economic Development Department: Development Engineering, Building, Economic Development, Real Estate, and Planning
- Public Works Department: Engineering Services, Hamilton Water, Operations, Environmental Services, and Transportation
- Hamilton Emergency Services
- Corporate Services Department: Budgets and Finance
- Mayor and Ward Councillor
- Bell, Horizon Utilities/Alectra Utilities, Hydro One, and Union Gas

There were no objections received from any public utilities, City departments and divisions.

Halton Region Conservation Authority provided the following comments:

“It continues to be my understanding that the application is being made so that the landowner at 600 Concession 5 West can have access to his property, in support of the

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**SUBJECT: Proposed Permanent Closure and Sale of a Portion of Road Allowance
Abutting 600 5th Concession Road West, Flamborough
(PW19027) (Ward 15) - Page 4 of 4**

current Site Plan Application (MDAR-17-221) proposing structures and development for an agricultural use on site and that no upgrades to the accessway are proposed at this time. Provided the applicant is aware that CH [Halton Region Conservation Authority] would only support the accessway being used in support of an agricultural use on site, and may not support/permit any future upgrades to that accessway, I have no further comment.”

Notice of the proposal was sent to all abutting property owners of the Subject Lands, as shown on Appendix “B”, for comment. In this instance, there were 16 notices mailed, and the results are as follows:

In favour: 0 Opposed: 0 No comment: 0

There were no opposed responses received.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

As there were no objections from any City Departments, Divisions, or Public Utilities, and no objections from any abutting land owners, staff are in support of the closure and sale of the Subject Lands to the owner of 600 5th Concession Road West, Flamborough.

ALTERNATIVES FOR CONSIDERATION

The City could deny this application and the lands would remain public highway.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

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APPENDICES AND SCHEDULES ATTACHED

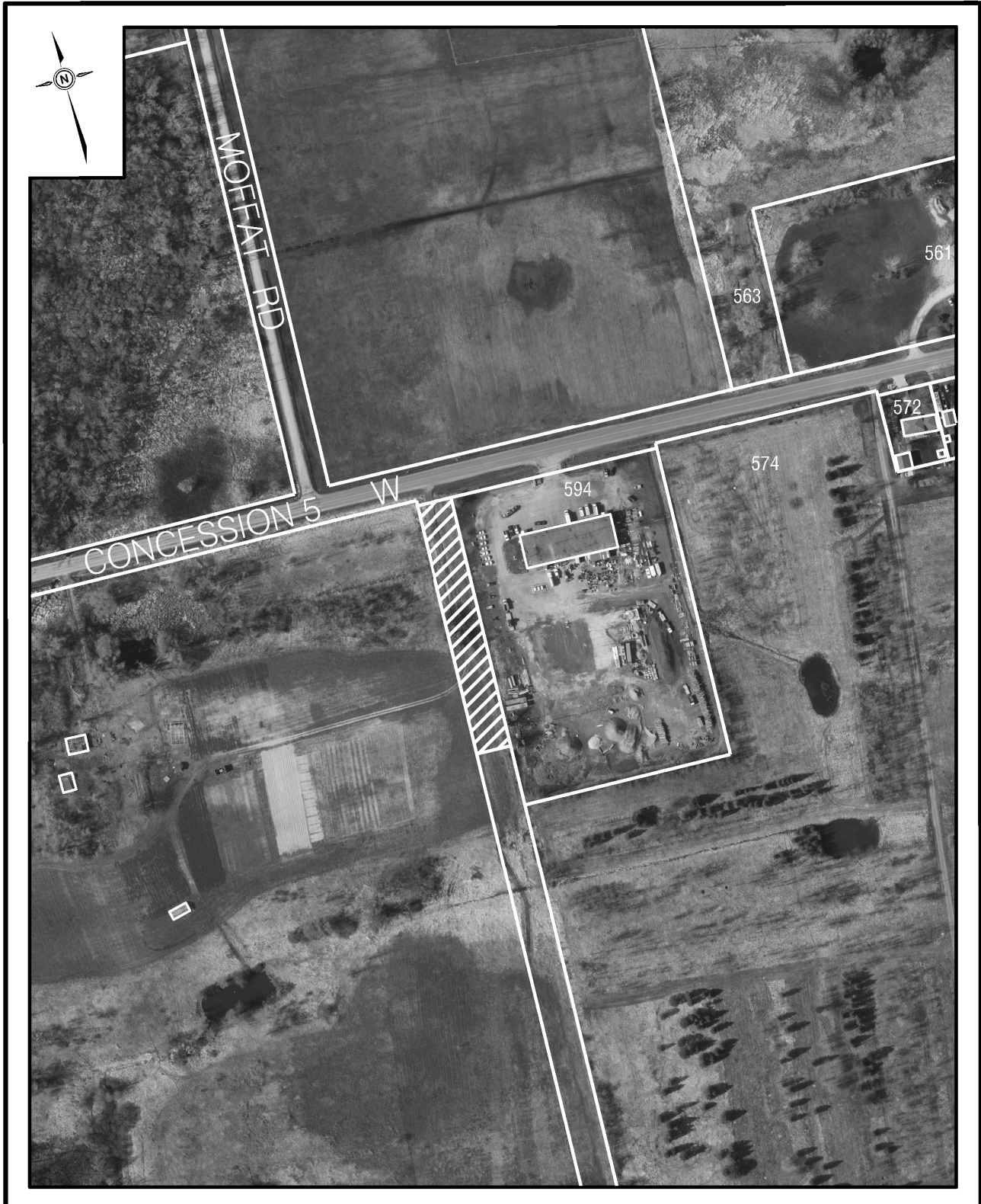
Appendix A: Aerial Drawing

Appendix B: Location Plan

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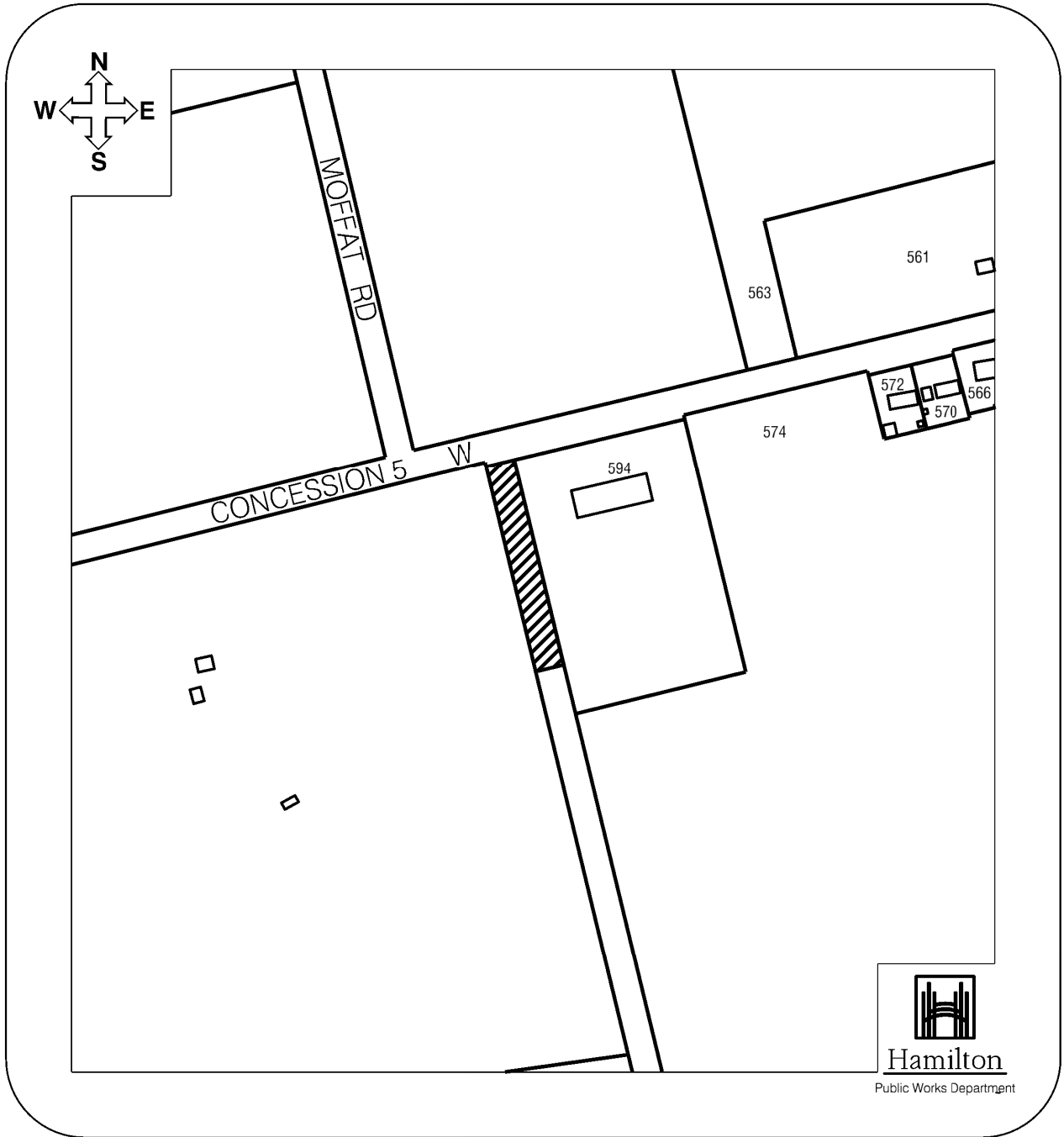
Hamilton

PROPOSED CLOSURE OF PORTION OF ROAD ALLOWANCE
BETWEEN LOT 12 AND 13 CONCESSION 4 WEST FLAMBOROUGH

Geomatics & Corridor Management Section
Public Works Department

LEGEND

 **Lands to be Closed**



LOCATION PLAN

PROPOSED CLOSURE OF
 ROAD ALLOWANCE
BETWEEN LOT 12 AND 13
CONCESSION 4
WEST FLAMBOROUGH

CITY OF HAMILTON
 PUBLIC WORKS DEPARTMENT

LEGEND



SUBJECT LANDS

DATE: AUGUST 13 2018

Not to Scale

REFERENCE FILE NO : PW18__



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Engineering Services Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	March 18, 2019
SUBJECT/REPORT NO:	Proposed Permanent Closure and Sale of a Portion of Public Unassumed Alley Abutting 20 Birch Avenue, Hamilton (PW19028) (Ward 3)
WARD(S) AFFECTED:	Ward 3
PREPARED BY:	Gary Kirchknopf (905) 546-2424 Ext. 7217 Cetina Farruggia (905) 546-2424 Ext. 5803
SUBMITTED BY:	Gord McGuire Director, Engineering Services Public Works
SIGNATURE:	

RECOMMENDATION(S)

That the application of the owner of 20 Birch Avenue, Hamilton, to permanently close and purchase a portion of the unassumed alleyway abutting the East side of 20 Birch Avenue, Hamilton, ("Subject Lands"), as shown on Appendix "A", attached to Report PW19028, be approved, subject to the following conditions:

- (a) That the applicant makes an application to the Ontario Superior Court of Justice, under Section 88 of the Registry Act, for an order to permanently close the Subject Lands, if required by the City, subject to:
 - (i) The General Manager of Public Works, or designate, signing the appropriate documentation to obtain any required court order; and
 - (ii) The documentation regarding any required application to the Ontario Superior Court of Justice being prepared by the applicant, to the satisfaction of the City Solicitor;
- (b) That the applicant be fully responsible for the deposit of a reference plan in the proper land registry office, and that said plan be prepared by an Ontario Land Surveyor, to the satisfaction of the Manager, Geomatics and Corridor Management

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**SUBJECT: Proposed Permanent Closure and Sale of a Portion of Public
Unassumed Alley Abutting 20 Birch Avenue, Hamilton
(PW19028) (Ward 3) - Page 2 of 5**

Section, and that the applicant also deposit a reproducible copy of said plan with the Manager, Geomatics and Corridor Management Section;

- (c) That, subject to any required application to the Ontario Superior Court of Justice to permanently close the Subject Lands being approved:
- (i) The City Solicitor be authorized and directed to prepare all necessary by-laws to permanently close and sell the alleyway, for enactment by Council;
 - (ii) The Real Estate Section of the Planning and Economic Development Department be authorized and directed to sell the closed alleyway to the owners of 20 Birch Avenue, Hamilton, as described in Report PW19028, in accordance with the City of Hamilton Sale of Land Policy By-law 14-204;
 - (iii) The City Solicitor be authorized to complete the transfer of the Subject Lands to the owners of 20 Birch Avenue, Hamilton, pursuant to an Agreement of Purchase and Sale or Offer to Purchase as negotiated by the Real Estate Section of the Planning and Economic Development Department;
 - (iv) The City Solicitor be authorized and directed to register a certified copy of the by-laws permanently closing and selling the alleyway in the proper land registry office;
 - (v) The Public Works Department publish any required notice of the City's intention to pass the by-laws and/or permanently sell the closed alleyway pursuant to City of Hamilton Sale of Land Policy By-law 14-204;
- (d) That the applicant enters into agreements with any Public Utility requiring easement protection;
- (e) That the City of Hamilton retain any necessary road widenings to the satisfaction of the Manager, Geomatics and Corridor Management, in accordance with the City of Hamilton Official Plan.

EXECUTIVE SUMMARY

The owner of 20 Birch Avenue, Hamilton, has applied to permanently close and purchase a portion of the public unassumed alleyway running North/South at the East side of his property. The alleyway currently is the sole access the owner has to a number of garages that front onto the alleyway. The properties that abut the access to this alleyway off of Wilson Street East are owned by the applicants' family. As there were no objections received from any City Departments, Divisions, or Public Utilities

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**SUBJECT: Proposed Permanent Closure and Sale of a Portion of Public
Unassumed Alley Abutting 20 Birch Avenue, Hamilton
(PW19028) (Ward 3) - Page 3 of 5**

and no objections received from any abutting land owners, staff support the application from the owner of 20 Birch Avenue, Hamilton to close and purchase the Subject Lands.

Alternatives for Consideration – See Page 5

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The applicant has paid the Council approved user fee of \$4,367.00. The Subject Lands will be sold to the owners of 20 Birch Avenue, Hamilton, as determined by the Real Estate Section of the Planning and Economic Development Department, in accordance with the City of Hamilton Sale of Land Policy By-law 14-204.

Staffing: An agreement to purchase the Subject Lands will be negotiated by the Real Estate Section of the Planning and Economic Development Department.

Legal: Subject to any required application to the Ontario Superior Court of Justice to permanently close the Subject Lands being approved, the City Solicitor will prepare all necessary by-laws to permanently close and sell the Subject Lands and will register such by-laws in the Land Registry Office once Council has approved the by-law. The by-law does not take effect until the certified copy of the by-law is registered in the proper land registry office. The City Solicitor will complete the transfer of the Subject Lands to the owners of 20 Birch Avenue, Hamilton, pursuant to an agreement negotiated by the Real Estate Section of the Planning and Economic Development Department.

HISTORICAL BACKGROUND

The Subject Lands form the North/South leg of a T-Shaped public unassumed alleyway created by Registered Plan 219. The Subject Lands have been historically used primarily by the owner of 20 Birch Avenue, Hamilton to access a number of garages that front onto the alleyway. On June 10, 2016, staff received an application from the owner of 20 Birch Avenue, Hamilton to close and purchase a portion of the public unassumed alleyway in order to gain legal ownership to access the rear garages located along the rear of his property. As there were no objections received from any City Departments, Divisions, or Public Utilities, and no objections received from any abutting land owners, staff are in support of the application.

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**SUBJECT: Proposed Permanent Closure and Sale of a Portion of Public
Unassumed Alley Abutting 20 Birch Avenue, Hamilton
(PW19028) (Ward 3) - Page 4 of 5**

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The closure of the Subject Lands will be subject to any application required by the City. In addition, a by-law must be passed to permanently close the Subject Lands in accordance with the *Municipal Act, 2001*.

RELEVANT CONSULTATION

The following public utilities, City departments and divisions were provided with a copy of the application and were invited to provide comments:

- Planning and Economic Development Department: Development Engineering, Building, Economic Development, Real Estate, and Planning
- Public Works Department: Engineering Services, Hamilton Water, Operations, Environmental Services, and Transportation
- Hamilton Emergency Services
- Corporate Services Department: Budgets and Finance
- Mayor and Ward Councillor
- Bell, Horizon Utilities/Alectra Utilities, Hydro One, and Union Gas

There were no objections received from any public utilities, City departments and divisions.

Zoning provided the following comments:

“It appears that the intent is to merge these lands in title with the property known as 651 Wilson Street. Please note that 651 Wilson Street is currently a Lot of Record; merging these lands in title will create a non-conformity with regard to the minimum required lot width and lot area. Note that the minimum required lot width is 12.0m and the minimum required lot area is 360.0m² [m²] A successful application for minor variance will be required in order to permit a reduced lot width and lot area.”

Transportation Planning provided the following comments:

“The City of Hamilton Urban Official Plan:

- Chapter C – City Wide Systems and Designation 4.5 Road Network Functional Classification 4.5.2 d) Minor Arterial Road (Wilson Street 36.576 metres)

The City should keep the portion of the Right-of-Way required to accommodate the widening.”

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**SUBJECT: Proposed Permanent Closure and Sale of a Portion of Public
Unassumed Alley Abutting 20 Birch Avenue, Hamilton
(PW19028) (Ward 3) - Page 5 of 5**

Bell has advised that they will require easement protection.

Notice of the proposal was sent to all abutting property owners of the Subject Lands, as shown on Appendix "B", for comment. In this instance, there were 157 notices mailed, and the results are as follows:

In favour: 1 Opposed: 5 No comment: 0

Those opposed do not abut the Subject Lands.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

As there were no objections received from any City Departments, Divisions, or Public Utilities, and no objections received from any abutting land owners, staff are in support of the application to close and purchase the Subject Lands by the owner of 20 Birch Avenue, Hamilton.

ALTERNATIVES FOR CONSIDERATION

The City could deny this application and the Subject Lands would remain public unassumed alleyway.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Built Environment and Infrastructure

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APPENDICES AND SCHEDULES ATTACHED

Appendix A: Aerial Drawing

Appendix B: Location Plan



Hamilton

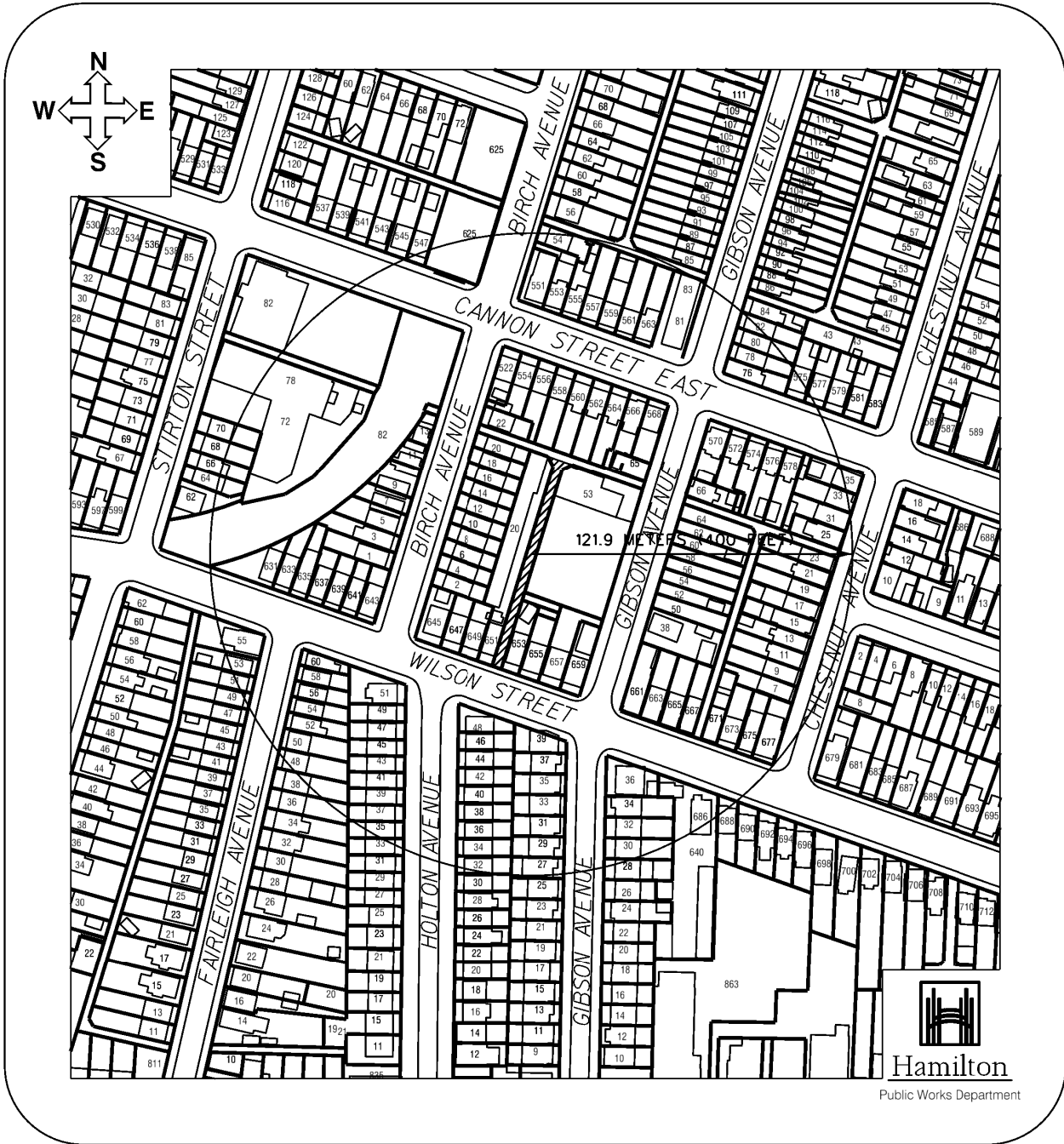
Proposed Permanent Closure of
Public Unassumed Alley: Rear of 20 Birch Ave to Wilson Street

Geomatics & Corridor Management Section
Public Works Department

LEGEND

 Lands to be Closed

NTS
06-15-2016
Sketch By: LB



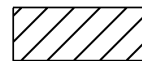
LOCATION PLAN

PROPOSED CLOSURE OF
 UNASSUMED ALLEY AT

20 BIRCH AVENUE

CITY OF HAMILTON
 PUBLIC WORKS DEPARTMENT

LEGEND



SUBJECT LANDS

DATE: Aug 18, 2016

Not to Scale

REFERENCE FILE NO : PW16_



INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	March 18, 2019
SUBJECT/REPORT NO:	2018 Annual Drinking Water Report (PW19024) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Cari Vanderperk (905) 546-2424 Ext. 3250
SUBMITTED BY:	Andrew Grice Director, Hamilton Water Public Works
SIGNATURE:	

COUNCIL DIRECTION

Not Applicable

INFORMATION

Under the Safe Drinking Water Act, there are several annual reporting requirements related to the operation and management of the City of Hamilton's five Drinking Water Systems (DWS) (as identified below).

Licence Number	Drinking Water System (DWS)	Expiration
005-101	Hamilton DWS	May 29, 2019
005-102	Freelton DWS	May 30, 2019
005-103	Greenville DWS	May 29, 2019
005-104	Carlisle DWS	May 29, 2019
005-105	Lynden DWS	May 29, 2019

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SUBJECT: 2018 Annual Drinking Water Report (PW19024) (City Wide) Page 2 of 6

This Information Report provides a summary of these requirements and highlights key information. More detailed information is provided in the attached Appendices (A to H) to Report PW19024.

Summary Report for Municipalities (Appendix A) to Report PW19024.:

As per the *Safe Drinking Water Act, Ontario Regulation, 170/03, Schedule 22*, Council must receive an annual drinking water summary report by March 31st of each year. This 2018 summary report has been prepared in accordance with the requirements as defined in Schedule 22, for each of the City of Hamilton's five DWSs. There were no Provincial Officer's Orders issued in relation to any of the City's drinking water systems. All confirmed Adverse Water Quality Incidents were reported to the Ontario Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre (SAC) and Public Health Services (PHS) and are provided in the report. All water taking quantities and flow rates were within approved rated capacities and provincial water taking limits.

The Drinking Water and Environmental Compliance Division of the MECP conducts regular and rigorous inspections of our Drinking Water Systems. The 2017 and 2018 inspection ratings are as follows:

Drinking Water System	MECP Inspection Rating (per calendar year)	
	2017	2018
Freelton	100%	96.74%
Greensville	100%	99.36%
Lynden	100%	100%
Woodward	Not conducted in 2017	96.32%
Fifty Road	100%	100%
Carlisle	100%	94.40%

Drinking Water Quality Management System (DWQMS) - Summary Report (Appendix B) to Report PW19024:

The submission of the DWQMS Summary Report satisfies requirements of the Provincial DWQMS Standard.

The purpose of the DWQMS Summary Report is to inform the Owner (Mayor and Council) of the performance and major milestones achieved in the City's DWQMS. Specifically, the Operating Authority (Hamilton Water Division) is required to inform Top Management (General Manager of Public Works and Director of Hamilton Water Division) and the Owner of the outcomes of the infrastructure, DWQMS audits and management reviews. The DWQMS Summary Report (Appendix B) exceeds these requirements and includes additional information relating to other milestones of the DWQMS.

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SUBJECT: 2018 Annual Drinking Water Report (PW19024) (City Wide) Page 3 of 6**Corrosion Control Program:**

The City of Hamilton conducted its Legislated Community Lead Sampling Program for the Woodward DWS between 2008 and 2009 as required by Schedule 15.1 of Ontario Regulation, 170/03. The results of the sampling program indicated that greater than 10 percent of tap water samples collected from residential and non-residential plumbing systems (“at the tap”) exceeded 10 micrograms per litre (µg/L) in all four sampling rounds and as such the MECP required the City of Hamilton to prepare and submit a Corrosion Control Plan (CCP) for the Woodward DWS. A CCP was developed and accepted by the MECP on June 7, 2011.

Council approved report 15-015 on November 25, 2015 that recommend a phosphate-based treatment approach for corrosion control. Construction of the Corrosion Control Building was completed in 2018. Industrial, commercial and institutional customers, as well as the general public, were notified of the upcoming changes to the drinking water chemistry. The program was fully implemented in November 2018 and the post-implementation sampling and monitoring plan has commenced.

Financial Plan:

The need to prepare a Water Infrastructure Financial Plan is, in part, a regulatory compliance issue specific to the water licensing requirements defined within the DWQMS and more specifically detailed under Regulation 453/07 - Financial Plans made under the Safe Drinking Water Act, 2002. The required Financial Plan for water systems must address a minimum six-year time-frame and be approved by council prior to submission to the Province of Ontario. The resulting plans must also be made freely available to the general public. Water Infrastructure Financial Plans for Hamilton have typically been developed to cover a ten-year period of time in order to reflect consistency with the current rate budget process. The first Financial Plan was created in 2010 and revised in 2014. The latest revision was approved by Council on July 12, 2018. This most current plan was also sent to the Ministry of Municipal Affairs and Housing on November 22, 2018.

Risk Assessment:

The DWQMS Standard requires that a Risk Assessment be conducted in its entirety every three years and reviewed on an annual basis, to verify the currency and validity of the information. An interim review of the Risk Assessment scope, criteria, data fields and update of Risk Assessment Outcomes was conducted in 2018.

Staff from across Hamilton Water collaborated on updating the existing information considering the following key questions:

- Are identified control measures still valid and if so, are they still in place?
- Have additional controls been implemented?
- How has equipment condition, raw water quality, operational controls, etc. revised the risk score?

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SUBJECT: 2018 Annual Drinking Water Report (PW19024) (City Wide) Page 4 of 6

- Are any modified “Risk Factors” now considered to be Critical Control Risks?

Similar to previous years, there were no significant risks identified through the 2018 process, which were not already captured through an existing Hamilton Water initiative or project.

Infrastructure Review:

Hamilton Water must ensure and verify, on an annual basis, the adequacy of water related infrastructure. In order to satisfy the requirements of the DWQMS Standard, the Operating Authority conducted a formal annual review of its vertical (wells, water treatment, storage and pumping) and horizontal (watermains) infrastructure. The scope of the review also considered the operation, maintenance and replacement of existing infrastructure assets as well as new infrastructure planned for the immediate and long-term future.

The outcomes and recommendations from the Infrastructure Review Meetings are documented in meeting minutes for the 2018 review. Attendees at the Infrastructure Review Coordination meeting utilized the outcomes from the meeting as input to capital planning and budget preparation. Hamilton Water discussed the 2018 Infrastructure Review at the Top Management Review meeting on September 13, 2018. The 2018 Infrastructure Review concluded that vertical and horizontal infrastructure is generally found to be available when needed. There is concern, however, about resources needed to perform preventative maintenance and moving forward with required station upgrades. It was acknowledged that life-cycle replacement funds were being used for emergency or short-term work. This results in a budget shortfall for long-term replacement and maintenance activities. There is work ongoing to confirm that current and projected spending allocations are adequate for drinking water.

Audit Program:

The DWQMS accreditation process requires both 3rd Party Accreditation Audits and annual internal audits by the Operating Authority.

In 2018, our external auditor, QMI-SAI Global conducted an off-site audit and an on-site re-accreditation audit. There were no non-conformances or opportunities for improvement found.

The results of the annual DWQMS Internal Audit conducted in October/November 2018 demonstrated that the City of Hamilton’s DWQMS is a mature system and that opportunities to improve the DWQMS continue to be identified to ensure that the system is relevant and appropriate for HW. The HW DWQMS contains the required procedures and records to illustrate the establishment and continual improvement of the management system.

The highest number of findings were related to Element 5 – Document and Records Control. This coincides closely with the findings by the external auditor, SAI-Global, for audits that they have conducted on other municipalities in Ontario.

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SUBJECT: 2018 Annual Drinking Water Report (PW19024) (City Wide) Page 5 of 6

Our high-risk findings that remain open from previous audits were related to:

- Element 15 – Infrastructure Maintenance, Rehabilitation and Renewal
- Element 17 – Measurement and Recording Equipment Calibration and Maintenance

These findings are closely connected to compliance requirements.

The findings identified in this audit have been assigned for further investigation and corrective/preventive actions. In conclusion, with the timely completion of the corrective actions issued as a result of this audit, the overall conformance to V2.0 of the DWQMS Standard and the City of Hamilton's DWQMS is suitable, the audit process is adequate, and the implementation and maintenance effective.

Management Review:

The DWQMS Standard requires that Top Management participate in a management review of the DWQMS at least once per year. The Management Review is a formal presentation of compliance, operational, water quality, communication and infrastructure data.

In 2018, the DWQMS Top Management Review (TMR) was held on September 13th. Attendees included Top Management (General Manager of Public Works and Director of Hamilton Water), Directors, Section Managers, Overall Responsible Operators (OROs) for treatment and distribution, the System Management Representative and staff from the Compliance Support Group.

Overall, Top Management, Directors and Section Managers concluded that the DWQMS is suitable, adequate and effective.

Standard of Care Training:

Standard of Care requirements for Owners and Managers of municipal DWSs came into effect as of January 1, 2013. Standard of Care is a statutory due diligence requirement identified in Section 19 of the Safe Drinking Water Act. All Owners (Mayor and Council) previously received Standard of Care training.

Standard of Care training is scheduled for the new members of Council in February and March 2019.

Update and Going Forward:

The outcomes from the Management Review and internal and external DWQMS audits concluded that the DWQMS is adequate, suitable and effective and conforms to the requirements of the DWQMS Standard. Corrective action plans from audits and action items from the Management Review will be implemented to ensure continual improvement of the DWQMS.

2018 Drinking Water Reports (Appendices C to H) to Report PW19024:

As per the *Safe Drinking Water Act, Ontario Regulation, 170/03, Section 11*, the Owner of a DWS shall ensure that an annual report is prepared and made available to the public

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SUBJECT: 2018 Annual Drinking Water Report (PW19024) (City Wide) Page 6 of 6

no later than February 28th of each year. The 2018 reports have been prepared in accordance with the requirements as defined in Section 11, for each of the City of Hamilton's DWSs. The reports are available on the City of Hamilton website and upon request.

APPENDICES AND SCHEDULES ATTACHED

Appendix A: 2018 Summary Report for Municipalities
Appendix B: 2018 DWQMS Summary Report
Appendix C: 2018 Drinking Water Report - Woodward
Appendix D: 2018 Drinking Water Report - Fifty Road
Appendix E: 2018 Drinking Water Report - Carlisle
Appendix F: 2018 Drinking Water Report - Freelton
Appendix G: 2018 Drinking Water Report - Greensville
Appendix H: 2018 Drinking Water Report - Lynden

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CITY OF HAMILTON'S
DRINKING WATER SYSTEMS (DWS) COMPLIANCE
SUMMARY REPORT FOR MUNICIPALITIES



2018

Safe Drinking Water Act, Ontario Regulation, 170/03,
Schedule 22

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1 - INTRODUCTION

This summary report for municipalities has been prepared in accordance with the Safe Drinking Water Act, Ontario Regulation, 170/03, Schedule 22. The City of Hamilton is the Owner of the following five Drinking Water Systems (DWS):

Licence Number	Drinking Water System
005-101	Hamilton DWS
005-102	Freelton DWS
005-103	Greensville DWS
005-104	Carlisle DWS
005-105	Lynden DWS

For each of the City of Hamilton's five DWSs, the following information is provided for the 2018 reporting period:

- A summary of quantities and flow rates of the water supplied
- Monthly average and maximum daily flows (in comparison to approved flow rates)

There were no Provincial Officer's Orders issued. All confirmed Adverse Water Quality Incidents were reported to the Ontario Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre (SAC) and Public Health Services (PHS) and are provided in the report. All water taking quantities and flow rates were within approved rated capacities and provincial water taking limits. The MECP 2017 and 2018 inspection ratings are as follows.

MECP Inspection Rating by Calendar Year

Drinking Water System	2017 Inspection Rating	2018 Inspection Rating
Carlisle	100%	94.40%
Freelton	100%	96.74%
Greensville	100%	99.36%
Lynden	100%	100%
Hamilton DWS - Woodward	Not conducted in 2017	96.32%
Hamilton DWS - Fifty Road	100%	100%



2 - HAMILTON DWS, WOODWARD SUBSYSTEM



2.1 Hamilton Drinking Water System, Woodward Subsystem Description

The Woodward Treatment Facility supplies a significant portion of Hamilton's population with drinking water including Stoney Creek, Dundas, Ancaster, Waterdown and Glanbrook. The population served is estimated at 535,000. In addition, the treatment system provides treated water to parts of Haldimand County (Caledonia, York and Cayuga) and parts of Halton Region. The water source for the community within the Woodward Subsystem is Lake Ontario.



2.2 Adverse Water Quality Incidents (AWQI) - Hamilton Drinking Water System, Woodward Subsystem

The following AWQIs were reported to the MECP, SAC and PHS.

Notification Date (m-d-y)	Location of Adverse	Adverse Water Quality Incident	Resolution
03-09-2018	Woodward WTP	Operational Adverse Equipment Malfunction. There was a hot water leak above #13 Filter at Water Plant. There was one drip of hot water every 15-20 seconds dripping in the middle of #13 Filter. The hot water contains a conditioning agent comprised mostly of sodium hydroxide.	<p>→ On March 10th, the hot water line for the South/East Quadrant was isolated, Filter #13 was taken out of service and backwashed.</p> <p>Treated samples were taken for Schedule 23 Metals and VOCs testing. All results were within historical values. On March 12th the hot water line above Filter #13 was repaired and observed to have no more leaks. The filter was backwashed and returned to service.</p>
05-26-2018	Fire Station, 363 Isaac Brock Dr.	Total Coliforms = 1 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	<p>→ Resampled adverse location, one upstream and one downstream hydrant. All results passed. The adverse was not confirmed.</p>
07-06-2018	Delbrook Court	Duty to report other observations. There was a watermain in need of emergency repair at the intersection of Royal Ave. and Stroud. In order to facilitate the repair, the City of Hamilton installed a temporary overland water line and put it into service before samples were taken and tested.	<p>→ Precautionary Boil Water Advisory was issued on July 6th. Two sets of samples were taken 24 hours apart. All results passed. Precautionary Boil Water Advisory was lifted on July 9th.</p> <p>On August 5th, two sets of samples were taken 24 hours apart from the repaired watermain. All results passed. The overland water line was removed on August 8th and the repaired watermain was put back in service.</p>

08-15-2018	Hydrant FL03H025	Free Chlorine = 0.02 mg/L Combined Chlorine = 0.15 mg/L (Regulatory requirement is minimum combined chlorine of 0.25 mg/L or free chlorine of 0.05 mg/L)	→ Watermain was flushed to restore chlorine. Flushing restored the combined chlorine to 1.18 mg/L.
08-30-2018	Lee Smith Booster Station – Ancaster	Total Coliforms = 4 CFU/100 mL (Regulatory requirement is 0 CFU/100mL)	→ <ul style="list-style-type: none"> • August 30th, resample and test - resulted in confirmed AWQI at Lee Smith Booster Station. • September 1st, resample and test - resulted in adverse at upstream hydrant. • September 2nd, resample and test. Two sets of samples were taken 24 hours apart. All results passed. • Reservoir was cleaned on September 12th, disinfected in the morning of September 14th utilizing Method 2 of the AWWA Standard. It was refilled to overflow and isolated. • September 15th, two sets of samples were taken 24 hours apart. All results passed.
10-03-2018	Central Fire Station, 35-43 John St. N.	Total Coliforms = 2 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location, one upstream and one downstream hydrant. All results passed. The adverse was not confirmed.
10-24-2018	Fire Station 24, 252 Parkside Dr.	Total Coliforms = 2 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location, one upstream and one downstream hydrant. All results passed. The adverse was not confirmed.



2.3 MECP Hamilton Drinking Water System, Woodward Subsystem Inspection Findings and Self-Declared Non-Compliances

A summary of findings that were either issued during the MECP inspection or self-declared during the 2018 calendar year (Inspection date: January 18, 2018):

#	Finding Type	Finding	Status
1	Non-Compliance	<p>Failure to ensure that all continuous analysers were calibrated in accordance with the manufacturer's instructions or as per Licence and Permit requirements (Filter Turbidity Meters).</p> <p>Action(s) Required: The City shall ensure that continuous monitoring equipment is checked and calibrated in accordance with Schedule 6, section 6-5 (1) 8. Also include procedures for all analyzer verification checks, frequency and triggers for the analyzer adjustment and full calibration, including documentation records by operators and instrumentation, to demonstrate and ensure optimum accuracy of analyzers and margins of error as per Schedule 6, section 6-5(1)10 for chlorine and turbidity.</p>	→ Actions complete
2	Recommendation	Review, confirm and update chlorine contact (CT) time calculations. SCADA Process Control Narratives (PCN), Process Logic Control (PLC) alarm settings and testing protocols to be updated accordingly.	→ Actions complete
3	Recommendation	Provide update on the Unidirectional Flushing Project and system ATP testing program.	→ Actions complete
4	Recommendation	Review backwash programming and related Standard Operating Procedure.	→ Actions complete
5	Recommendation	Review maintenance records to demonstrate sedimentation tank clean outs and any other significant maintenance.	→ Actions complete
6	Recommendation	Review the need for NTU testing above 100 NTU while maintaining accuracy in readings as needed (i.e. probe #7997-200).	→ Actions complete

7	Recommendation	Continue to review all water storage facilities within the City to confirm the presence and condition of vent and overflow screens and also review station check schedules and documentation to ensure system integrity.	→ Actions on-going
8	Recommendation	Review sampling locations for THMs and HAA to ensure samples are collected at the appropriate locations.	→ Actions on-going
9	Recommendation	Review sampling protocols with all operators as per Schedule 17-6 section 2. ii of O. Reg. 170.	→ Actions complete
10	Recommendation	Provide the progress updates of the Corrosion Control Plan Schedule on a quarterly basis (until the system went live).	→ Actions complete



2.4 Water Production Reports - Summary

The following provides a summary of daily flow rates and instantaneous peak flow rates in comparison to the capacity of the water works as identified in the Permit to Take Water. This information is tabulated in the accompanying tables.



FIGURE 2-1: WOODWARD TREATMENT PLANT - 2018 MONTHLY PRODUCTION (SUMMARY)

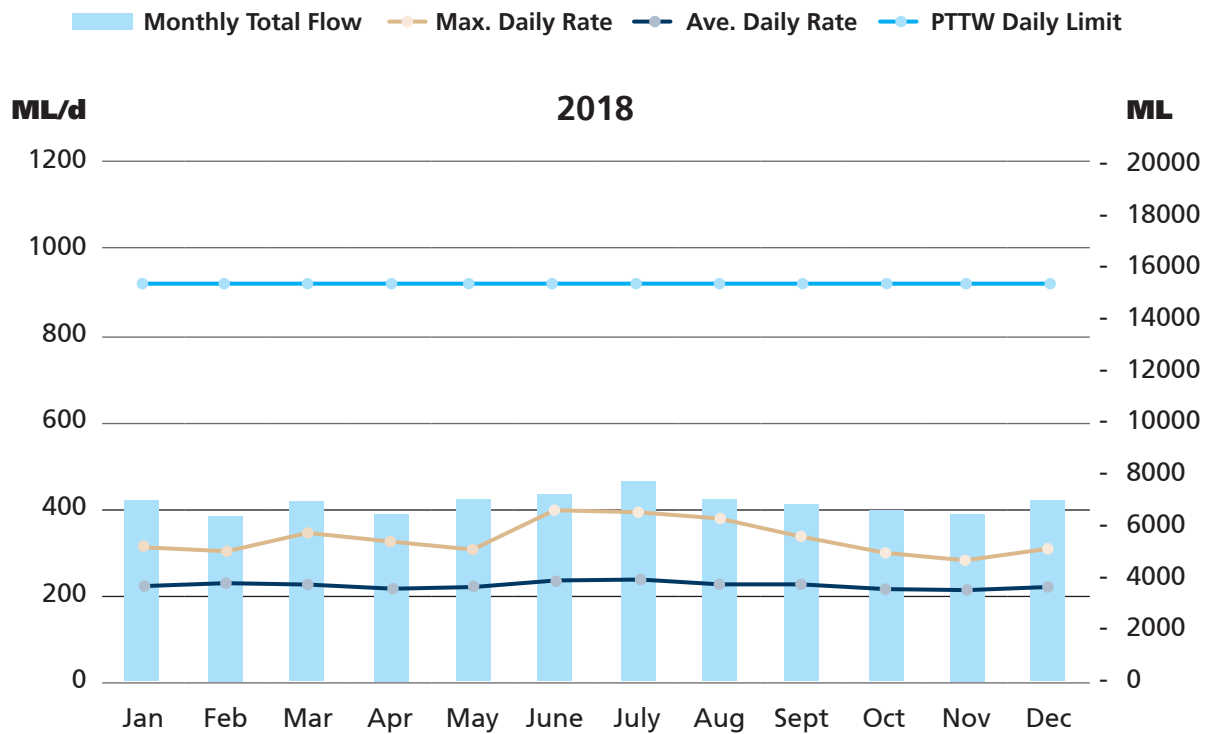


TABLE 2-1: WOODWARD TREATMENT PLANT - 2018 MONTHLY PRODUCTION (SUMMARY)

WOODWARD	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total	ML	7,051	6,457	7,102	6,551	7,132	7,430	7,896	7,277	6,949	6,651	6,573	7,127
Average	ML/d	227	231	229	218	230	248	255	235	232	215	219	230
Maximum	ML/d	314	306	345	327	313	400	397	377	334	298	290	316
PTTW	ML/d	909	909	909	909	909	909	909	909	909	909	909	909



3 - HAMILTON DWS, FIFTY ROAD SUBSYSTEM

3.1 Hamilton Drinking Water System, Fifty Road Subsystem Description

The treated water supply for this area comes from the Town of Grimsby Water Distribution System and serves a population of approximately 200 people. Water is provided from Grimsby west along Highway 8, then south on Fifty Road to Concession Road and to an underground, 1,100m³ storage reservoir operated by the City of Hamilton. The reservoir supplies water to residences on Reservoir Park Road.

3.2 Adverse Water Quality Incidents (AWQI) - Hamilton Drinking Water System, Fifty Road Subsystem

The following AWQIs were reported to the MECP, SAC and PHS.

Notification Date (m-d-y)	Location of Adverse	Adverse Water Quality Incident	Resolution
10-02-2018	Fifty Road Sampling Station A	Total Coliforms = 1 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location, one upstream and downstream hydrant. All results passed. The adverse was not confirmed

3.3 MECP Hamilton Drinking Water System, Fifty Road Subsystem Inspection Findings and Self-Declared Non-Compliances

A summary of findings that were either issued during the MECP inspection or self-declared during the 2018 calendar year (Inspection date: May 24, 2018):

#	Finding Type	Finding	Status
1	Recommendation	Add Concession Road to the flushing program in order to demonstrate maintained chlorine residuals in the system.	→ Action complete
2	Recommendation	Review and update the Drinking Water Works Permit to include additional chemical pumps and booster pumps.	→ Action pending next Drinking Water Works Permit Schedule C consolidation
3	Recommendation	Review standard operating procedures (SOPs) and operating practices to ensure that the "Residual Chlorine Analyzers Technical Bulletin" is adhered to and documents can be provided to demonstrate work completed. Action required: Submit a revised SOP and Operations and Maintenance plan to the undersigned inspector by July 31, 2018.	→ Actions complete

3.4 Water Production Reports - Summary

The Fifty Road DWS receives treated water from the Town of Grimsby Water Distribution System. Therefore a water production summary is not available.

4 - CARLISLE DWS

4.1 Carlisle Drinking Water System Description

The Carlisle water supply system consists of four wells, one elevated water storage tank, treatment, sampling and analysis, which services a population of approximately 1,800 people. The water source for the community of Carlisle is ground water.

4.2 Adverse Water Quality Incidents (AWQI) - Carlisle DWS

There were no AWQIs in 2018.

4.3 MECP Carlisle Drinking Water System (DWS) Inspection Findings and Self-Declared Non-Compliances

A summary of findings that were either issued during the MECP inspection or self-declared during the 2018 calendar year (Inspection date: May 24, 2018):

#	Finding Type	Finding	Status
1	Self-declared Non-Compliance (2064) also included as a Non-Compliance in the Inspection Report	Failure to make logs or other record keeping mechanisms available for at least five (5) years. Accidental disposal of operator log books June 6, 2018. Note – This non-compliance was originally noted in the Greenville inspection. Please refer to Greenville NC for further details.	→ Actions complete
2	Non-Compliance	Failure to ensure that all continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions and Schedule E of the Municipal Drinking Water Licence (Ultraviolet (UV) analyzers). Action(s) Required: UV units are required to be maintained as per manufacturer recommendations and Schedule E of the Licence which requires "on a yearly basis, the owner shall inspect, clean and check functionality of UV sensors, lamps and associated equipment. Replacement of UV sensors and lamps will be as required or if intensity falls below the set limits." Records did not demonstrate work was completed annually as required. At all times, ensure that monthly and annual maintenance is conducted as required. Submit to the undersigned provincial officer by January 31, 2019 a new work order tracking process to ensure compliance.	→ Actions complete
3	Self-declared Non-Compliance (2136) also included as a Non-Compliance in the Inspection Report	Failure to ensure all operators possessed the required certification (two (2) operators working with expired licences). Note – This non-compliance was originally noted in the Freelton inspection. Please refer to Freelton NC for further details.	→ Actions complete

4	Recommendation	<p>List the minimum intensity required to meet 40 mj/cm², in the Real Time SCADA Data Assessment procedure (PW-WW-PO-P-011-001) to show the methodology/buffer of the alarm set points.</p> <p>Note – This recommendation was originally noted in the Greenville inspection. Please refer to Greenville for further details.</p>	<p>→ Actions complete, however, follow-up is required.</p>
5	Recommendation	<p>Review records to clearly identify analyzer make, model, location, calibration frequency required by manufacture and frequency of calibration adopted by the City.</p>	<p>→ Actions pending</p>



4.4 Water Production Reports - Summary

The following provides a summary of daily flow rates and instantaneous peak flow rates in comparison to the capacity of the water works as identified in the Permit to Take Water. This information is tabulated in the accompanying tables.

FIGURE 4-1: CARLISLE WELLS (FDC01 & FDC02) - 2018 MONTHLY PRODUCTION (SUMMARY)

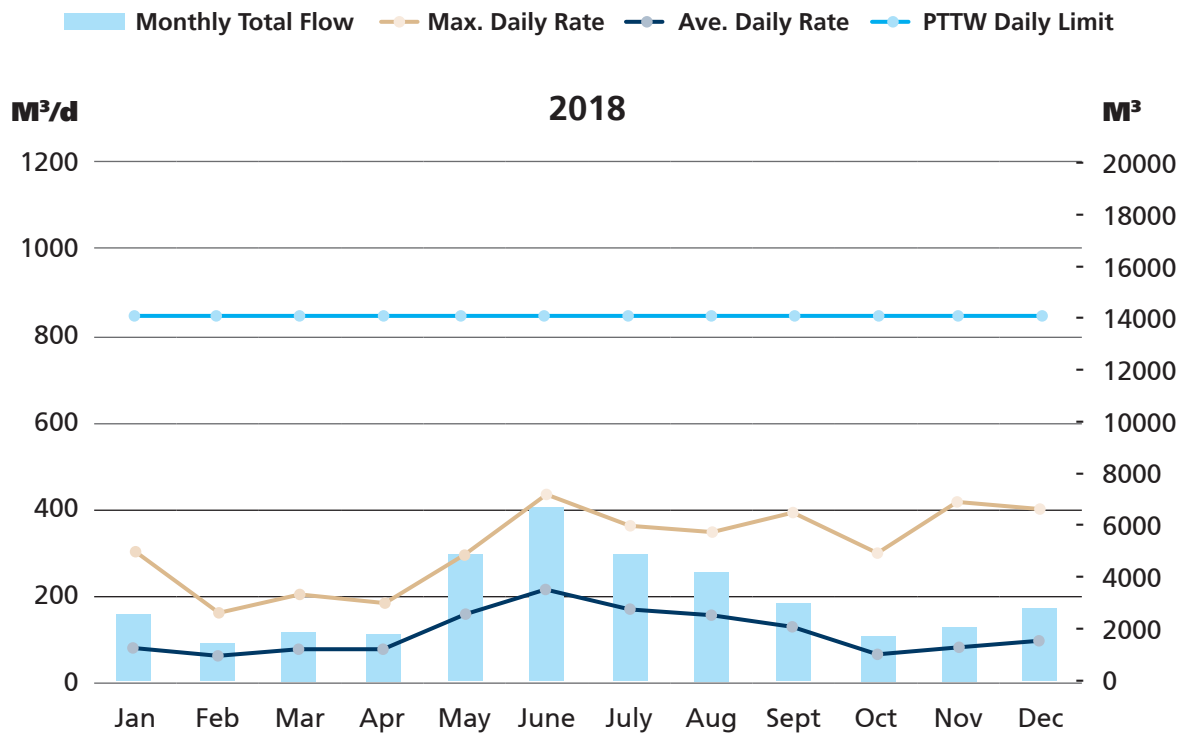


TABLE 4-1: CARLISLE WELLS (FDC01 & FDC02) - 2018 MONTHLY PRODUCTION (SUMMARY)

FDC01 & 02	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total	m ³	2,676	1,547	2,303	2,258	5,024	6,721	5,074	4,244	3,042	1,884	2,214	2,807
Average	m ³ /d	86	55	74	75	162	224	164	137	101	61	74	91
Maximum	m ³ /d	301	160	204	185	305	439	363	344	401	315	421	407
PTTW	m ³ /d	851	851	851	851	851	851	851	851	851	851	851	851

FIGURE 4-2: CARLISLE WELL (FDC03R) - 2018 MONTHLY PRODUCTION (SUMMARY)

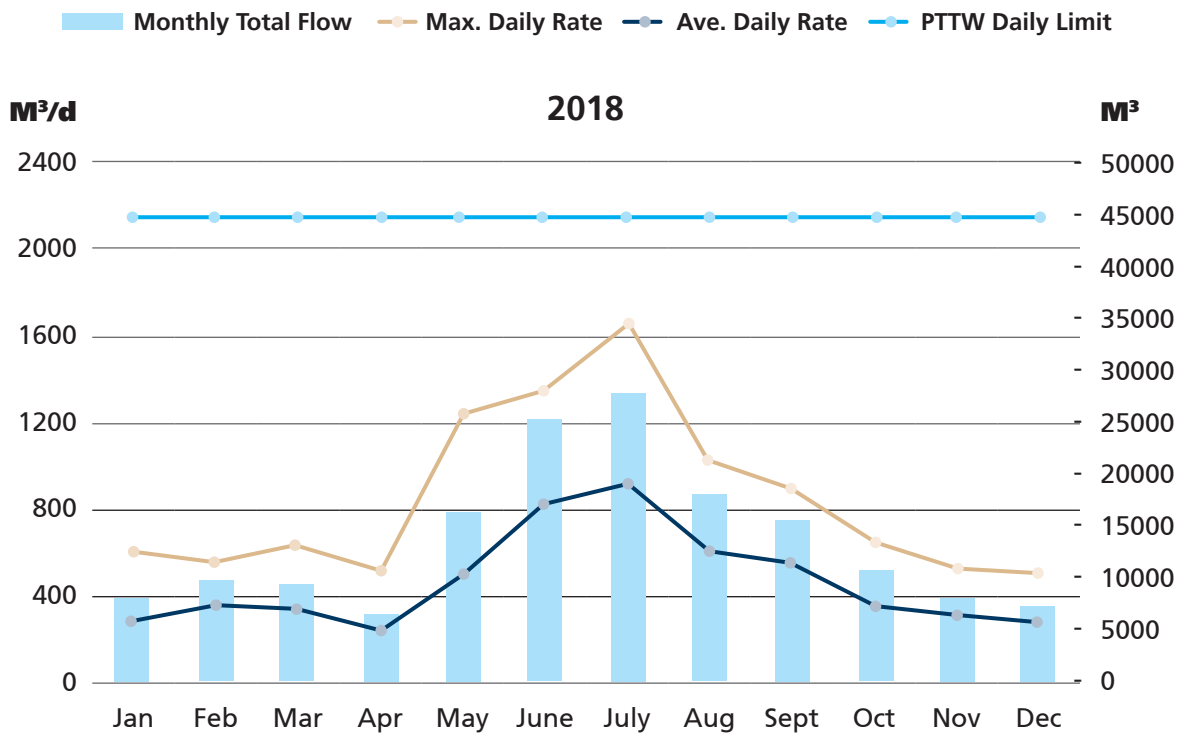


TABLE 4-2: CARLISLE WELL (FDC03R) - 2018 MONTHLY PRODUCTION (SUMMARY)

FDC03R	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total	m ³	8,103	10,110	10,011	6,847	16,379	25,268	28,470	18,851	15,715	10,485	8,191	7,408
Average	m ³ /d	261	361	323	228	528	842	918	608	524	338	273	239
Maximum	m ³ /d	630	565	671	516	1,255	1,333	1,642	1,032	898	683	515	495
PTTW	m ³ /d	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160

FIGURE 4-3: CARLISLE WELL (FDC05) - 2018 MONTHLY PRODUCTION (SUMMARY)

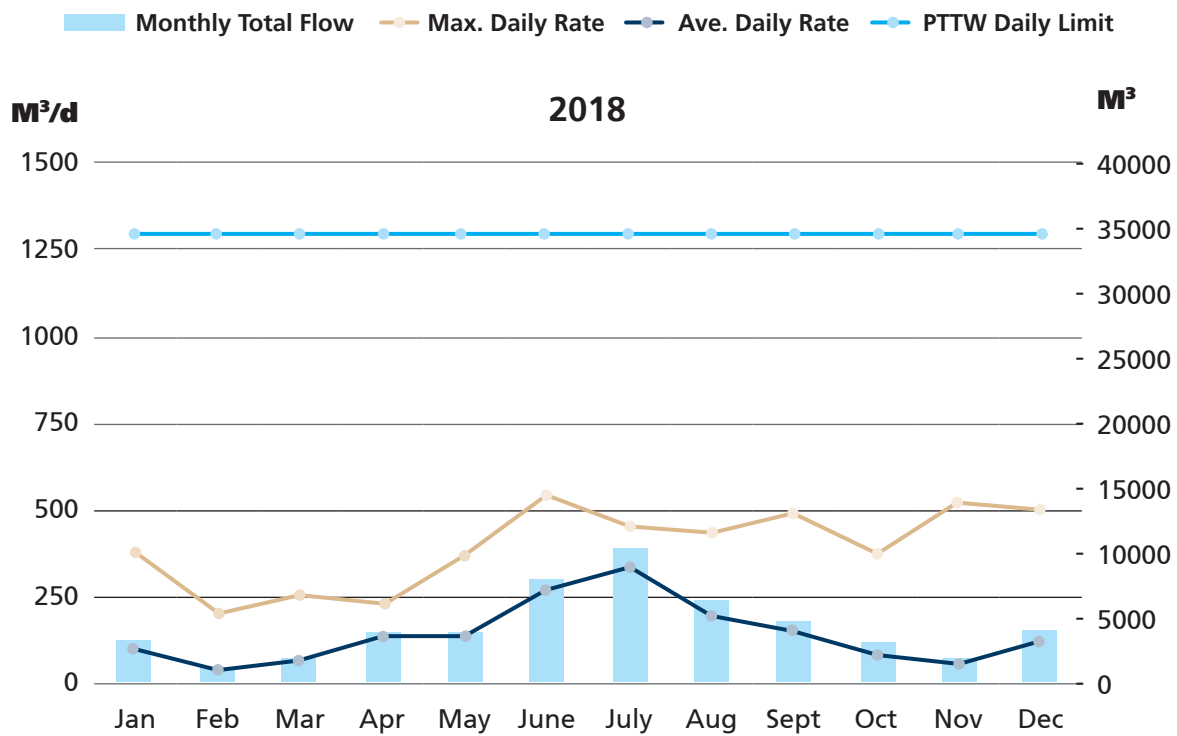


TABLE 4-3: CARLISLE WELL (FDC05) - 2018 MONTHLY PRODUCTION (SUMMARY)

FDC05	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total	m ³	3,217	1,065	1,868	4,171	4,224	8,025	11,115	6,146	4,523	3,211	2,339	4,161
Average	m ³ /d	104	38	60	139	136	268	359	198	151	104	78	134
Maximum	m ³ /d	453	456	333	503	651	769	740	492	609	447	335	478
PTTW	m ³ /d	1,296	1,296	1,296	1,296	1,296	1,296	1,296	1,296	1,296	1,296	1,296	1,296

5 - FREELTON DWS

5.1 Freelton Drinking Water System Description

The Freelton water supply system consists of two wells, one elevated water storage tank, treatment, sampling and analysis which services a population of approximately 790 people. The water source for the community of Freelton is ground water.

5.2 Adverse Water Quality Incidents (AWQI) - Freelton DWS

There were no AWQIs in 2018.

5.3 MECP Freelton Drinking Water System (DWS) Inspection Findings and Self-Declared Non-Compliances

A summary of findings that were either issued during the MECP inspection or self-declared during the 2018 calendar year (Inspection date: October 25, 2018):

#	Finding Type	Finding	Status
1	Self-declared Non-Compliance (2064) also included as a Non-Compliance in the Inspection Report	Failure to make logs or other record keeping mechanisms available for at least five (5) years. Accidental disposal of operator log books June 6, 2018. Note – This non-compliance was originally noted in the Greenville inspection. Please refer to Greenville NC for further details.	→ Action complete
2	Self-declared Non-Compliance (2136) also included as a Non-Compliance in the Inspection Report	Failure to ensure all operators possessed the required certification (two (2) operators working with expired licences). Action(s) Required: Reviewing training, documentation requirements and communication protocols and comply with all applicable requirements under the Safe Drinking Water Act and regulations. Note – This non-compliance was repeated in the subsequent inspection for Carlisle drinking water system.	→ Actions complete

5.4 Water Production Reports - Summary

The following provides a summary of daily flow rates and instantaneous peak flow rates in comparison to the capacity of the water works as identified in the Permit to Take Water. This information is tabulated in the accompanying tables.

FIGURE 5-1: FREELTON WELL (FDF01) - 2018 MONTHLY PRODUCTION (SUMMARY)

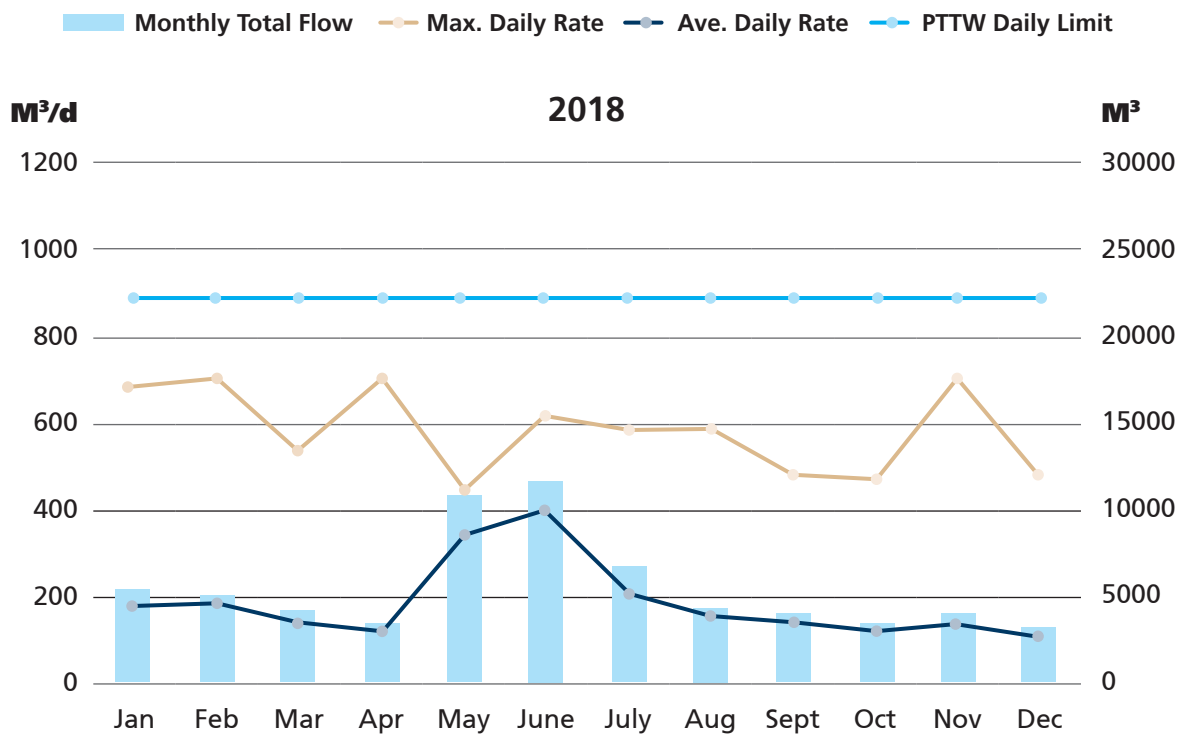


TABLE 5-1: FREELTON WELL (FDF01) - 2018 MONTHLY PRODUCTION (SUMMARY)

FDC01 & 02	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total	m ³	5,468	5,100	4,318	3,740	11,226	11,863	6,449	4,226	3,958	3,534	3,985	3,161
Average	m ³ /d	176	182	139	125	362	395	208	136	132	114	133	102
Maximum	m ³ /d	677	691	540	693	456	623	586	585	475	466	692	484
PTTW	m ³ /d	878	878	878	878	878	878	878	878	878	878	878	878

FIGURE 5-2: FREELTON WELL (FDF03) - 2018 MONTHLY PRODUCTION (SUMMARY)

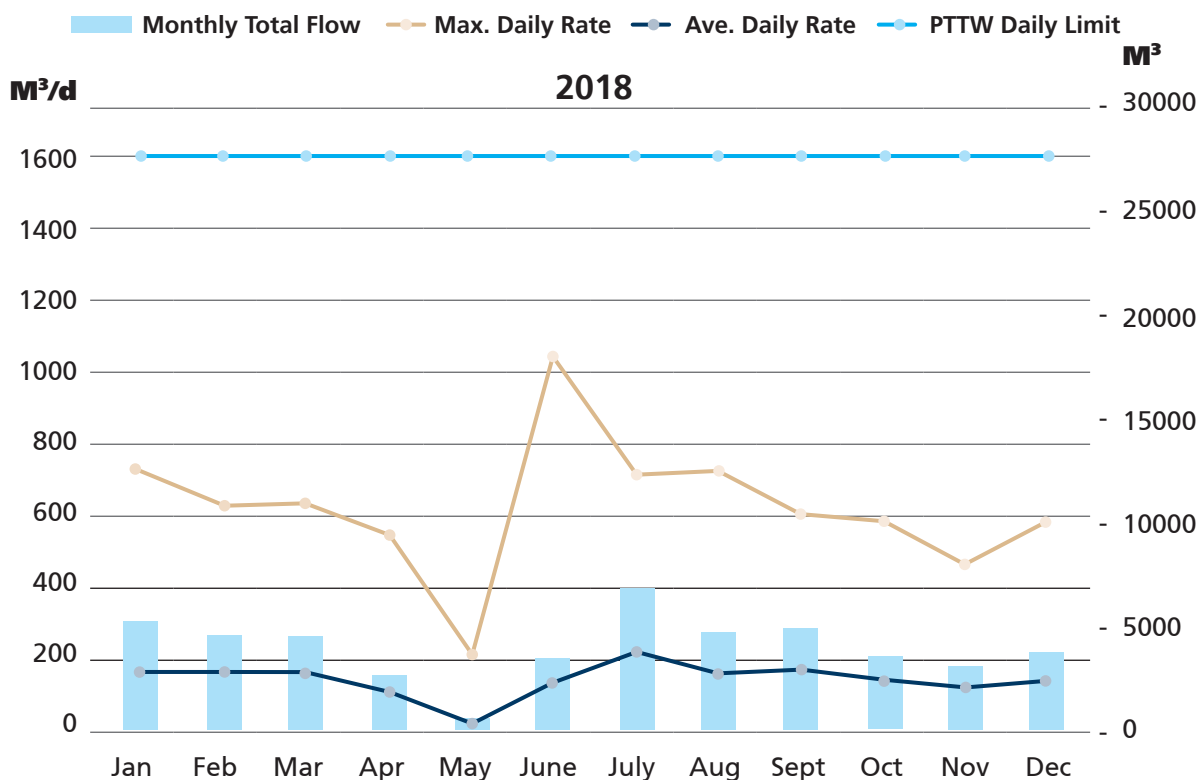


TABLE 5-2: FREELTON WELL (FDF03) - 2018 MONTHLY PRODUCTION (SUMMARY)

FDC01 & 02	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total	m ³	5,476	4,825	4,814	2,632	637	3,665	7,050	4,856	5,178	3,785	3,071	3,818
Average	m ³ /d	177	172	155	88	21	122	227	157	173	122	102	123
Maximum	m ³ /d	723	628	630	533	201	1,049	713	722	608	587	470	579
PTTW	m ³ /d	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607

6 - GREENSVILLE DWS

6.1 Greenville Drinking Water System Description

The Greenville water supply system consists of one well, one well station, treatment, sampling and analysis which services a population of approximately 100 people. The water source for the community of Greenville is ground water.

6.2 Adverse Water Quality Incidents (AWQI) - Greenville DWS

There were no AWQIs in 2018.

6.3 MECP Greenville Drinking Water System (DWS) Inspection Findings and Self-Declared Non-Compliances

A summary of findings that were either issued during the MECP inspection or self-declared during the 2018 calendar year (Inspection date: September 19, 2018):

#	Finding Type	Finding	Status
1	Self-declared Non-Compliance (2064) also included as a Non-Compliance in the Inspection Report	Failure to make logs or other record keeping mechanisms available for at least five (5) years. Accidental disposal of operator log books June 6, 2018. Action(s) Required: 1. Ensure log books are accessible for at least five years, as per O. Reg. 128, section 27(6). Note – This non-compliance was repeated in subsequent inspections for Lynden, Freelton, and Carlisle drinking water systems.	→ Actions complete
2	Recommendation	Implement a program of regular watermain flushing and/or scouring.	→ A flushing strategy was implemented in 2018.
3	Recommendation	As part of the recommended regular flushing program, also conduct regular chlorine residual tests of samples collected from dead ends or extremities of the distribution system in addition to the current sampling stations.	→ A flushing strategy was implemented in 2018.
4	Recommendation	Review records to clearly identify analyzer make, model, location, calibration frequency required by manufacture and frequency of calibration adopted by the City.	→ Actions pending.
5	Recommendation	List the minimum intensity required to meet 40 mj/cm ² , in the Real Time SCADA Data Assessment procedure (PW-WW-PO-P-011-001) to show the methodology/buffer of the alarm set points.	→ Actions complete, however, follow-up is required.

6.4 Water Production Reports - Summary

The following provides a summary of daily flow rates and instantaneous peak flow rates in comparison to the capacity of the water works as identified in the Permit to Take Water. This information is tabulated in the accompanying tables.

FIGURE 6-1: GREENSVILLE WELL (FDG01) - 2018 MONTHLY PRODUCTION (SUMMARY)

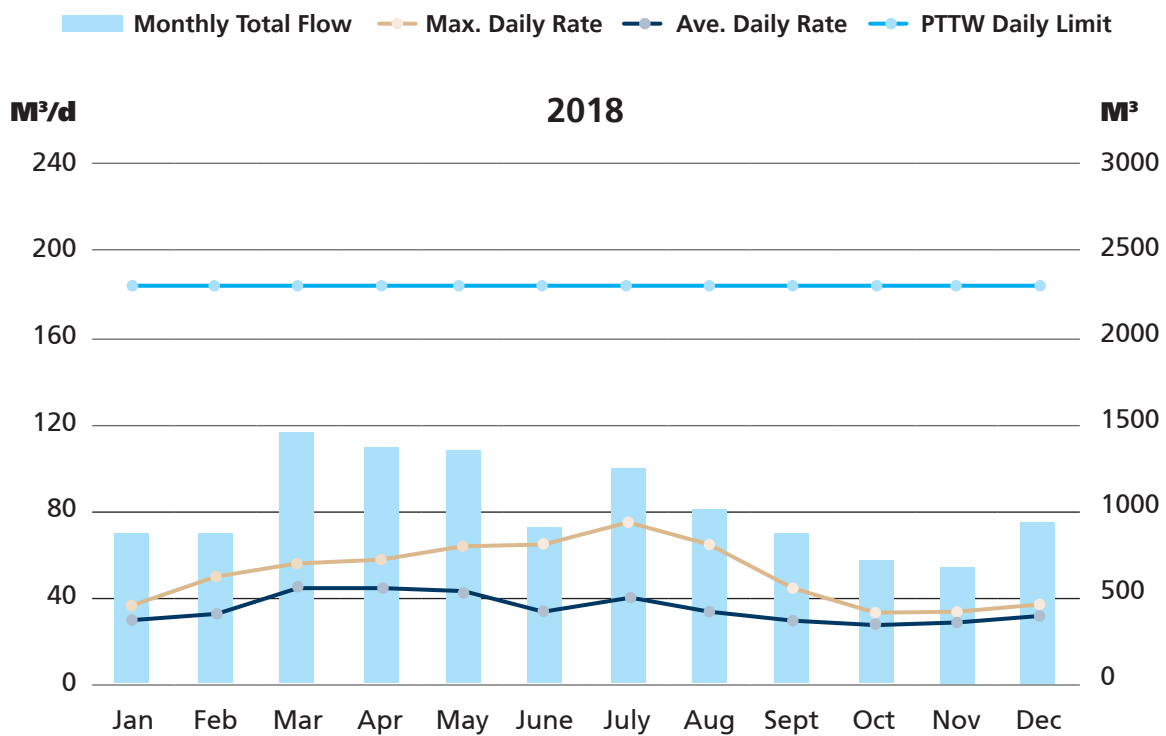


TABLE 6-1: GREENSVILLE WELL (FDG01) - 2018 MONTHLY PRODUCTION (SUMMARY)

WOODWARD	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total	m ³	862	856	1,453	1,373	1,360	939	1,236	1,005	855	691	666	917
Average	m ³ /d	28	31	47	46	44	31	40	32	28	22	22	30
Maximum	m ³ /d	34	45	55	54	63	62	74	61	43	26	25	37
PTTW	m ³ /d	197	197	197	197	197	197	197	197	197	197	197	197



7 - LYNDEN DWS



7.1 Lynden Drinking Water System Description

The Lynden ground water supply system consists of one well, one well station, treatment, sampling and analysis which services a population of approximately 380 people. The water source for the community of Lynden is ground water.

7.2 Adverse Water Quality Incidents (AWQI) - Lynden DWS

The following AWQIs were reported to the MECP, SAC and PHS.

Notification Date (m-d-y)	Location of Adverse	Adverse Water Quality Incident	Resolution
09-27-2018	Lynden Sampling Station D	Total Coliforms = 1 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location, one upstream and downstream location. All results passed. The adverse was not confirmed.

7.3 MECP Lynden Drinking Water System (DWS) Inspection Findings and Self-Declared Non-Compliances

A summary of findings that were either issued during the MECP inspection or self-declared during the 2018 calendar year (Inspection date: September 19, 2018):

#	Finding Type	Finding	Status
1	Self-declared Non-Compliance (2064) also included as a Non-Compliance in the Inspection Report	Failure to make logs or other record keeping mechanisms available for at least five (5) years. Accidental disposal of operator log books June 6, 2018. Note – This non-compliance was originally noted in the Greenville inspection. Please refer to Greenville NC for further details.	→ Actions complete

7.4 Water Production Reports - Summary

The following provides a summary of daily flow rates and instantaneous peak flow rates in comparison to the capacity of the water works as identified in the Permit to Take Water. This information is tabulated in the accompanying tables.

FIGURE 7-1: LYNDEN WELL (FDL01) - 2018 MONTHLY PRODUCTION (SUMMARY)

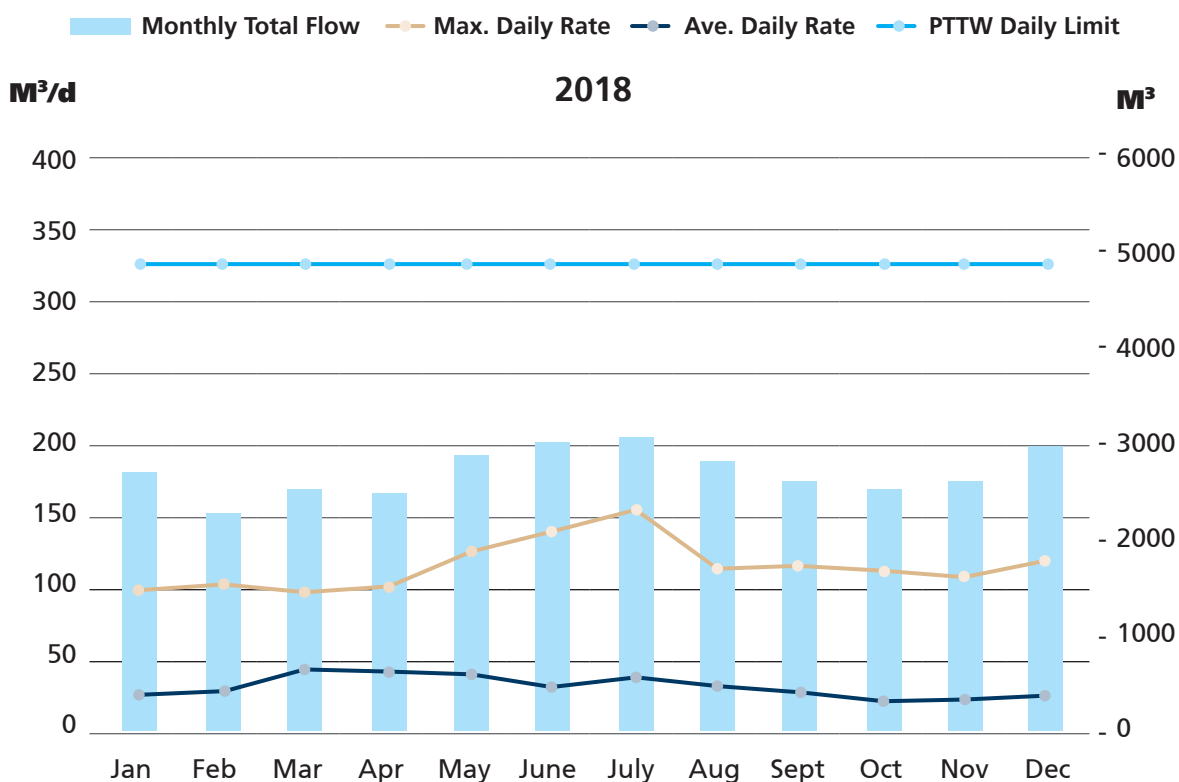


TABLE 7-1: LYNDEN WELL (FDL01) - 2018 MONTHLY PRODUCTION (SUMMARY)

FDC01 & 02	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total	m ³	2,678	2,336	2,522	2,477	2,907	3,022	3,074	2,851	2,622	2,545	2,702	2,971
Average	m ³ /d	86	83	81	83	94	101	99	92	87	82	90	96
Maximum	m ³ /d	98	106	96	100	123	136	155	116	119	113	110	122
PTTW	m ³ /d	327	327	327	327	327	327	327	327	327	327	327	327



CITY OF HAMILTON'S DRINKING WATER SYSTEMS
DWQMS SUMMARY REPORT



2018

Safe Drinking Water Act

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1 - INTRODUCTION

1.1 Purpose

This Drinking Water Quality Management System (DWQMS) Summary Report is being submitted to the Owner, (Mayor and Council) on behalf of Top Management (General Manager, Public Works and Director of Hamilton Water) of the City's five drinking water systems (DWS), as shown below.

Licence Number	Drinking Water System
005-101	Hamilton DWS
005-102	Freelton DWS
005-103	Greenville DWS
005-104	Carlisle DWS
005-105	Lynden DWS

The purpose of this DWQMS Summary Report is to keep the Owner of the City's DWS informed about the ongoing performance of the DWQMS, including major milestones achieved in 2018. This report also assists the Owner in meeting their Standard of Care responsibilities under the Safe Drinking Water Act (SDWA).

This DWQMS Summary Report is a key communication tool from Top Management to the Owner as referenced in Element 12 Communications of the DWQMS Standard. This Report also meets the communication requirements of Element 14 Review and Provision of Infrastructure and Element 20 Management Review of the DWQMS Standard as identified in Sections 3 and 5 of this report, respectively.

1.2 Scope

The DWQMS Standard requires that the Operating Authority report on certain aspects of the DWQMS to the Owner, specifically the outcomes of Element 14 Review and Provision of Infrastructure and Element 20 Management Review. This report fulfills the communication requirements of these elements and exceeds the Standard's requirements by providing information on external and internal DWQMS Audits, Risk Assessment and other major milestones of the DWQMS for 2018.

1.3 Overview of Key Milestones

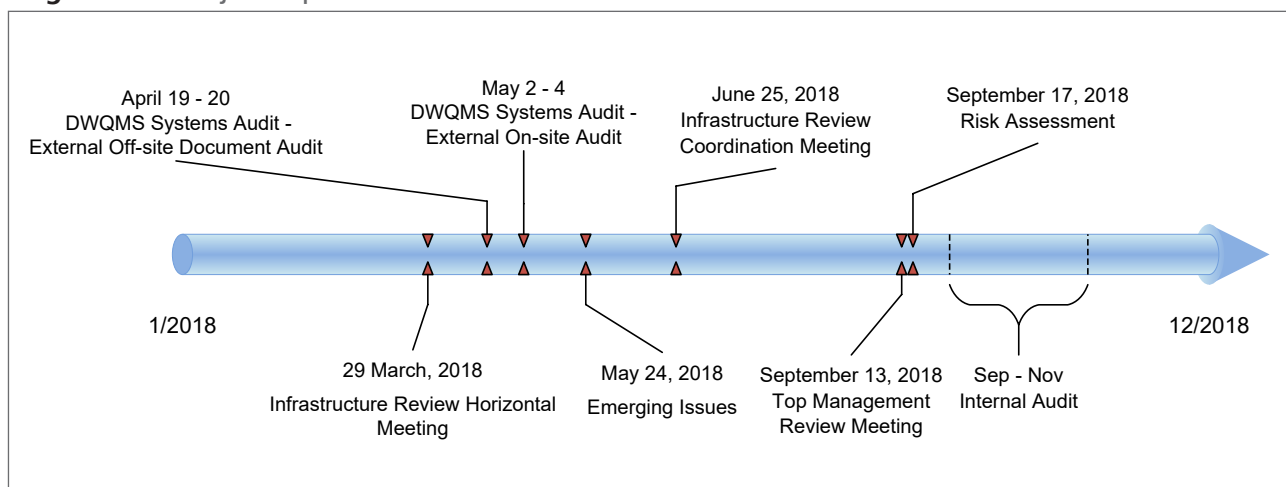
DWQMS milestones related to the accreditation of Hamilton Water, the City's Operating Authority are described below:

- November 2008 – DWQMS Operational Plan endorsed by Owners,
- April 2009 – Operating Authority achieves Partial Scope; Entire DWQMS accreditation,
- June 2009 – Operating Authority receives Municipal Drinking Water Licences and Drinking Water Works Permits for all five City DWSs,
- February 2011 – On-site Verification Audit by

- Canadian General Standards Board (CGSB),
- July 2011 – Operating Authority achieves Full Scope; Entire DWQMS accreditation,
- 2012 – Identified QMI - SAI Global as the new Accreditation Body,
- 2012 – Standard of Care Training for Mayor and Council,
- May 2013 – External Systems Audit (off-site document review),
- June 2013 – Operating Authority receives reaccreditation,
- May 2014 – External Systems Audit (off-site document review),
- June 2014 – Received renewed Municipal Drinking Water System Licences for each of the City's five DWSs,
- First quarter 2015 – re-endorsement of the DWQMS Operational Plan by Owners,
- March (off-site document review) and April (on-site audit) 2015 – re-accreditation of the DWQMS by external registrar, SAI-Global,
- May 2016 – External Systems Audit (off-site document review),
- May 2016 – Standard of Care Training for Acting General Manager and new Councillor,
- May 2017 – External Systems Audit (off-site document review).
- April (off-site document review) and May (on-site audit) 2018 – re-accreditation of the DWQMS by external registrar, SAI-Global

Figure 1-1 illustrates key DWQMS milestones which occurred in 2018:

Figure 1-1: Project Pipeline - 2018



1.4 DWQMS Operational Summary

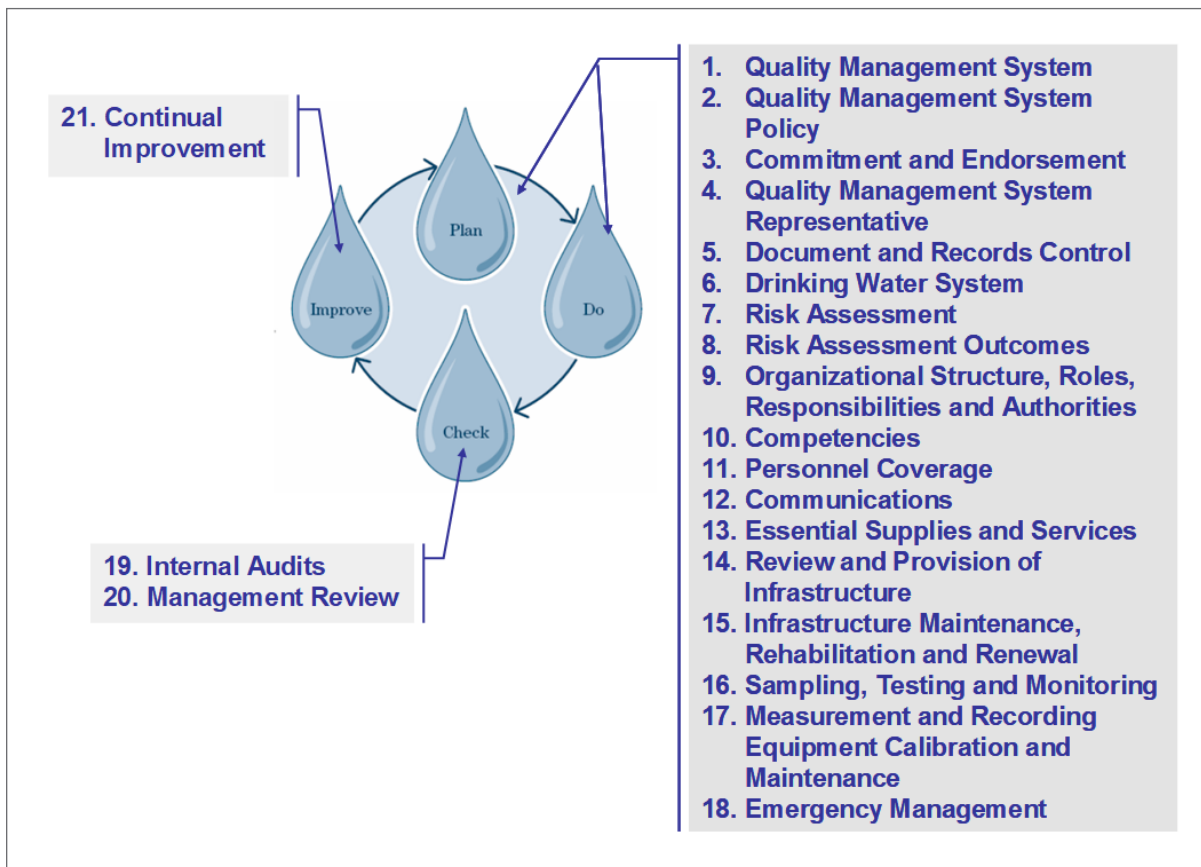
Figure 1-2 illustrates the Plan, Do, Check and Act elements of the DWQMS Standard. In 2018, the Ministry of the Environment and Climate Change revised the Standard and issued V 2.0.

The following sections of this report include an overview of milestones related to the following

elements of the DWQMS:

- Section 2 - Element 8 Risk Assessment Outcomes
- Section 3 - Element 14 Review and Provision of Infrastructure
- Section 4 - Element 19 Internal Audits
- Section 5 - Element 20 Management Review

Figure 1-2: DWQMS Standard Elements



DWS Licences & Permits Approvals

In 2018, Licence renewal applications were submitted for each of our Drinking Water Systems. They will each be renewed in 2019. In addition, there were 14 approvals for extensions to the distribution system; 4 approvals for like for like infrastructure replacements (e.g. pumps); and 1 approval for a new 1200mm diameter trunk watermain in part of the Red Hill Area.



2 RISK ASSESSMENT

2.1 Overview

The DWQMS Standard requires that a Risk Assessment be conducted in its entirety every three years and reviewed on an annual basis, to verify the currency and validity of the information. An interim review of the Risk Assessment scope, criteria, data fields and update of Risk Assessment Outcomes was conducted in 2018.

Staff from across Hamilton Water collaborated on updating the existing information considering the following key questions:

- Are identified control measures still valid and if so, are they still in place?
- Have additional controls been implemented?
- How has equipment condition, raw water quality, operational controls etc. changed?
- Are any modified “Risk Factors” now considered to be Critical Control Risks?

Similar to previous years, there were no significant risks identified through the 2018 process, which were not already captured through an existing Hamilton Water initiative or project.

2.2 Key Updates

As part of the Risk Assessment, process changes, including capital upgrades in the DWSs, are considered and the associated risk scores (i.e. likelihood of occurrence) are updated as needed. The following includes a list of materials that were considered in the 2018 Risk Assessment:

- Capital Delivery - Water Projects Recently completed and upcoming
- 2018 DWQMS Infrastructure Review outcomes
- Critical Control Point Summary Chart PW-WW-R-032-009 (Outcomes updated from previous DWQMS Risk Assessment)
- DWQMS Risk Assessment - Water Distribution Report PW-WW-R-032-012 (Outcomes updated from previous DWQMS RA)
- Review of Adverse Water Quality Incident Notifications
- BCOS Database Quality Non-conformance Module (audits and inspections)

- 2018 Emerging Issues Meeting outcomes
- Critical Control Point Summary - Woodward DWS PW-WW-L-032-005
- DWQMS Risk Assessment - Water Treatment Plant Report PW-WW-R-032-010 (Outcomes updated from previous DWQMS Risk Assessment)
- Critical Control Point Summary - Wells & Fifty Road DWS PW-WW-L-032-005
- DWQMS Risk Assessment - Wells Systems Report PW-WW-R-032-011 (Outcomes updated from previous DWQMS RA)
- Items from recent DWQMS Top Management Review Meeting
- Review and consideration of the MECP’s “Potential Hazardous Events for Municipal Residential Drinking Water Systems”

In 2019, a scoped review of the Risk Assessment will be completed. Staff will continue to work to better integrate the DWQMS Risk Assessment with existing Hamilton Water budget processes in an effort to streamline where possible.



3 REVIEW AND PROVISION OF INFRASTRUCTURE

3.1 Purpose

The Operating Authority must ensure and verify, on an annual basis, the adequacy of water infrastructure. In order to satisfy the requirements of the DWQMS Standard, the Operating Authority conducted a formal review of its vertical (water treatment, storage and pumping) and horizontal (watermains) infrastructure. The scope of the review also considered the operation, maintenance and replacement of existing infrastructure assets as well as new infrastructure planned for the immediate and long-term future. A Coordination Meeting was held with the Management Team of Hamilton Water

to discuss the outcomes of both the horizontal and vertical infrastructure reviews. This DWQMS Summary Report (2018) includes a brief summary of the results of the DWQMS Infrastructure Review.

3.2 Process

Teams were assembled from across relevant sections of Hamilton Water, Engineering Services and Planning and Economic Development to conduct the review of water infrastructure. Meetings were held in March 2018 to discuss vertical and horizontal infrastructure and a coordination meeting was held in June 2018. The teams collected and examined input data related to various asset management, maintenance and capital programs. A summary of the type of “indicator” data examined is provided below:

Infrastructure Type	Input Data
Horizontal Infrastructure – Maintenance	<ul style="list-style-type: none"> → Watermain Repairs Hydrant and Valve Inspections Valve and Meter Replacement Substandard Service Replacement Preventative Maintenance Emergency Repairs Customer Complaints
Horizontal Infrastructure - Large Capital	<ul style="list-style-type: none"> → Replaced, Rehabilitated and New Watermains Condition Assessments Capital Upgrades Master Plan Schedule Corrosion Control Program and Corrosion Control Building Asset Management – Critical Watermain Age Profiles and Inspections
Vertical Infrastructure – Maintenance	<ul style="list-style-type: none"> → Preventative Maintenance Program Status Breakdowns and Emergency Repairs Capital Upgrades - Coordination and Scheduling Life Cycle Best Practices Critical Projects
Vertical Infrastructure – Large Capital	<ul style="list-style-type: none"> → Condition Assessments Master Plan Update Source Water Protection Projects, Well Studies and Investigations Water Capital Projects Lists

3.3 Overview of Results

The outcomes and recommendations from the Infrastructure Review Meetings are documented in meeting minutes for the 2018 review. Attendees at the Infrastructure Review Coordination meeting utilized the outcomes from the meeting as input to capital planning and budget preparation. Hamilton Water discussed the 2018 Infrastructure Review at the Top Management Review meeting on September 13, 2018.

The 2018 Infrastructure Review concluded that vertical and horizontal infrastructure is generally found to be available when needed. There is concern however about resources needed to perform preventative maintenance and move forward with required station upgrades. It was acknowledged that life-cycle replacement funds were being used for emergency or short-term work. This results in a budget shortfall for long-term replacement and maintenance activities. There is work ongoing to confirm that current and projected spending allocations are adequate for drinking water.



4 DWQMS AUDITS

The DWQMS accreditation process requires both 3rd party accreditation audits and annual internal audits by the Operating Authority. The cycle of external audits includes an on-site verification audit every 3 years and systems audit or documentation review annually.

4.1 External DWQMS Audits

Hamilton Water utilizes the services of QMI-SAI Global as the accreditation body for the DWQMS. In 2018, QMI-SAI Global conducted an off-site audit and an on-site re-accreditation audit. There were no non-conformances or opportunities for improvement found.

4.2 Internal DWQMS Audit

The Operating Authority must conduct internal audits to evaluate the conformity of the DWQMS with the requirements of the DWQMS Standard and its procedures, at least annually.

The results of the annual DWQMS Internal Audit conducted in October/November 2018 demonstrate that the City of Hamilton's DWQMS is a mature system and that opportunities to improve the DWQMS continue to be identified to ensure that the system is relevant and appropriate for HW. The HW DWQMS contains the required procedures and records to illustrate the establishment and continual improvement of the management system.

The highest number of findings were related to Element 5 – Document and Records Control. This coincides closely with the findings by the external auditor, SAI-Global, for audits that they have conducted on other municipalities in Ontario.

Our high risk findings that remain open from previous audits, were related to:

- Element 15 – Infrastructure Maintenance, Rehabilitation and Renewal
- Element 17 – Measurement and Recording Equipment Calibration and Maintenance

These findings are closely connected to compliance requirements.

The findings identified in this audit will be assigned for further investigation and corrective/preventive actions.

In conclusion, with the timely completion of the corrective actions issued as a result of this audit, the overall conformance to V2.0 of the DWQMS Standard and the City of Hamilton's DWQMS is suitable, the audit process is adequate, and the implementation and maintenance effective.

2019 DWQMS Audit Plan

The Compliance Support Group of the Compliance & Regulations Section will be developing an Audit Plan for the 2019 DWQMS internal audits. The Audit Plan will be reviewed and approved by the Hamilton Water Senior Management Team prior to implementation.



5 MANAGEMENT REVIEW

The PLAN component of Element 20 Management Review of the DWQMS Standard requires a documented procedure to describe how the Operating Authority reviews the suitability, adequacy and effectiveness of the DWQMS. The 'CHECK' component of the element requires that Top Management participate in a management review at least once per year to review the DWQMS and consider recommendations for continual improvement. Required outputs of the meeting are:

- Consideration of the results of the management review and identifying deficiencies and action items

to address deficiencies,

- Provide a record of decisions and actions items including responsibilities and timelines,
- Report the results of the management review to the Owner.

In 2018, the DWQMS Top Management Review (TMR) was held on September 13th. Attendees included Top Management (General Manager of Public Works and Director of Hamilton Water), Directors, Section Managers, Overall Responsible Operators (OROs) for treatment and distribution, the System Management Representative and staff from the Compliance Support Group.

Table 5-1: Management Review Action Items

No.	Summary of Action Items	Status
1	A meeting is to be scheduled to discuss setting the rate. A risk assessment to be held following the submission of the Blue Plan Report.	Pending
2	Hamilton Water to continue to provide information to the residents of Lynden regarding the new well.	Pending
3	Include a record of continual improvement training at the 2019 Top Management Meeting.	Pending

Overall, Top Management, Directors and Section Managers concluded that the DWQMS is suitable, adequate and effective.

Financial Plan

The need to prepare a Water Infrastructure Financial Plan is, in part, a regulatory compliance issue specific to the water licensing requirements defined within the DWQMS and more specifically detailed under Regulation 453/07 - Financial Plans made under the Safe Drinking Water Act, 2002. The required Financial Plan for water systems must address a minimum six-year time-frame and be approved

by council prior to submission to the Province of Ontario. The resulting plans must also be made freely available to the general public. Water Infrastructure Financial Plans for Hamilton have typically been developed to cover a ten-year period of time in order to reflect consistency with the current rate budget process.

The first Financial Plan was created in 2010 and revised in 2014. The latest revision was approved by Council on July 12, 2018. This most current plan was sent to the Ministry of Municipal Affairs and Housing on November 22, 2018.

6 CONCLUSIONS

The outcomes from the internal DWQMS audit and the Management Review concluded that the DWQMS is adequate, suitable and effective and conforms to the requirements of the DWQMS Standard. Corrective action plans from the audit and action items from the Management Review will be implemented to ensure continual improvement of the DWQMS.

7 NEXT STEPS – TIMELINE

The management system requires ongoing commitment by staff and management. Maintenance and improvement of the system continues to be a high priority of the Operating Authority. Major next steps related to the maintenance of the DWQMS in 2019 include the following:

Month of 2019	Scheduled DWQMS Milestones
January to July	→ Investigate and correct internal audit findings from DWQMS Internal Audits
February/March	→ Annual O.Reg. 170 Schedule 22 Report and DWQMS Summary Report to Council
Throughout 2019	→ DWQMS Internal Audits
March	→ Hamilton Water - SMT Meeting #1
April	→ DWQMS Risk Assessment Meetings
April/May	→ DWQMS 3rd Party Surveillance off-site Documentation Audit
May	→ Infrastructure Review Meetings
June	→ Hamilton Water - SMT Meeting # 2
September	→ DWQMS Top Management Review
December	→ Hamilton Water - SMT Meeting # 3



CITY OF HAMILTON
WOODWARD DRINKING WATER SUBSYSTEM (DWSS)
WATER QUALITY ANNUAL REPORT

2018

Ontario Regulation 170/03 Section 11

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Drinking Water System Number	Drinking Water System Name	Drinking Water System Owner	Drinking Water System Category	Period Being Reported
220003118	Woodward Subsystem of Hamilton Drinking Water System	City of Hamilton	Large Municipal Residential	January 1, 2018 to December 31, 2018

Complete if your Category is "Large Municipal Residential" or "Small Municipal Residential"

Does your Drinking Water System serve more than 10,000 people? YES NO

Is your annual report available to the public at no charge on a website on the Internet? www.hamilton.ca/waterquality YES NO

Location where Summary Report required under Ontario Regulation 170/03 Schedule 22 will be available for inspection:

700 Woodward
Administration Building,
Compliance Support Group

Complete for all other Categories

Number of Designated Facilities served: N/A

Did you provide a copy of your annual report to all Designated Facilities you serve? N/A

Number of Interested Authorities you report to: N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? N/A





List all Drinking Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Caledonia/Cayuga/York Water Distribution System	260004566
North Aldershot Water Distribution System	260086762
Snake Road Water Distribution System	260086775
Bridgeview Community Water Distribution System	260068419



Did you provide a copy of your annual report to all Drinking Water System owners that are connected to you and to whom you provide all of its drinking water?

YES NO NOT APPLICABLE



Indicate how you notified system users that your annual report is available, and is free of charge:

System users are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.

HAMILTON DWS, WOODWARD SUBSYSTEM



The Woodward Treatment Facility supplies a significant portion of Hamilton's population with drinking water including Stoney Creek, Dundas, Ancaster, Waterdown and Glanbrook. The population served is estimated at 535,000. In addition, the treatment system provides treated water to parts of Haldimand County (Caledonia, York and Cayuga) and parts of Halton Region.



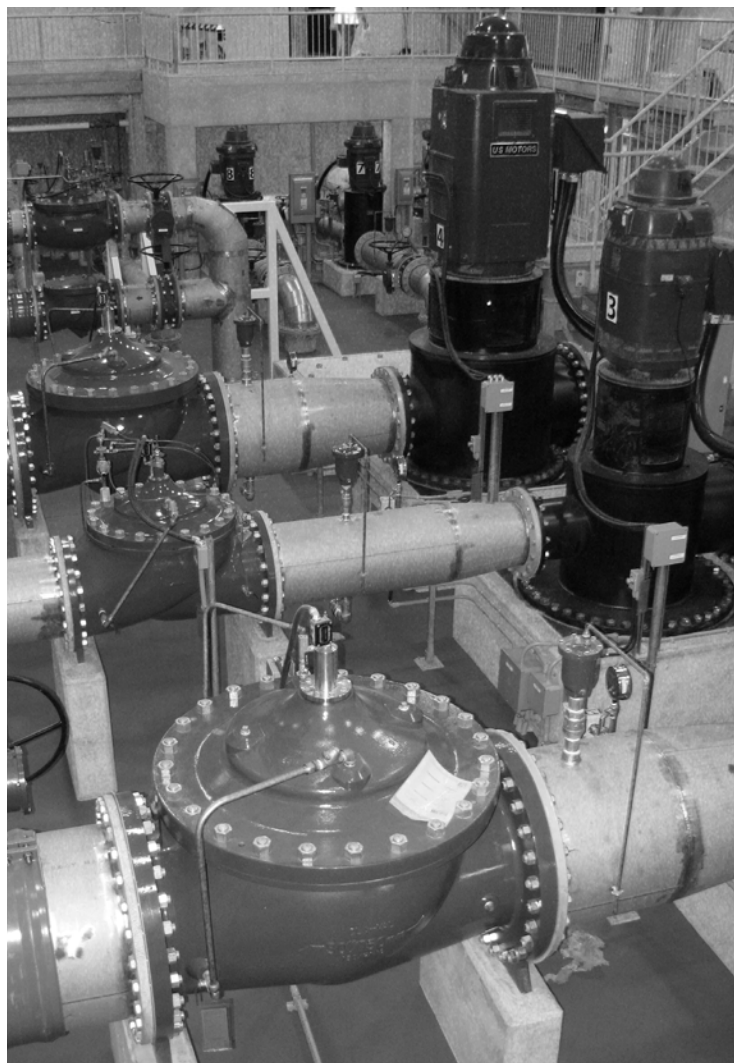
The Woodward Treatment Facility has three raw water intake pipes (1.22m, 1.52m and 2.44m diameter) of which two intake pipes (2.44m and 1.52m diameter) are currently in use. The raw water is drawn from Lake Ontario at distances of 640m, 915m and 945m to begin the treatment process.

Treatment Process:

- Pre-chlorination of raw water. Chlorine for disinfection can be added at three places: raw water intake, the pretreatment stage, and after the filters.
- Screening
- Water clarification by coagulation and sedimentation. Polyaluminum chloride is added to coagulate suspended solids that settle down in sedimentation tanks.
- Filtration. The settled water is filtered using dual media filters of Sand/Granular Activated Carbon (GAC). GAC is used to reduce the presence of taste/odour causing compounds such as Geosmin/MIB in the raw water.
- Chlorine, ammonia, fluoride and phosphoric acid are added before the treated water is sent to the distribution system. Ammonia is added to convert chlorine to mono-chloramine to help maintain stable chlorine residuals in the distribution system. Fluoride is added to the drinking water to promote dental health and phosphoric acid is added to help reduce lead corrosion.
- High lift pumps push the water from the Woodward Treatment Facility to the distribution system

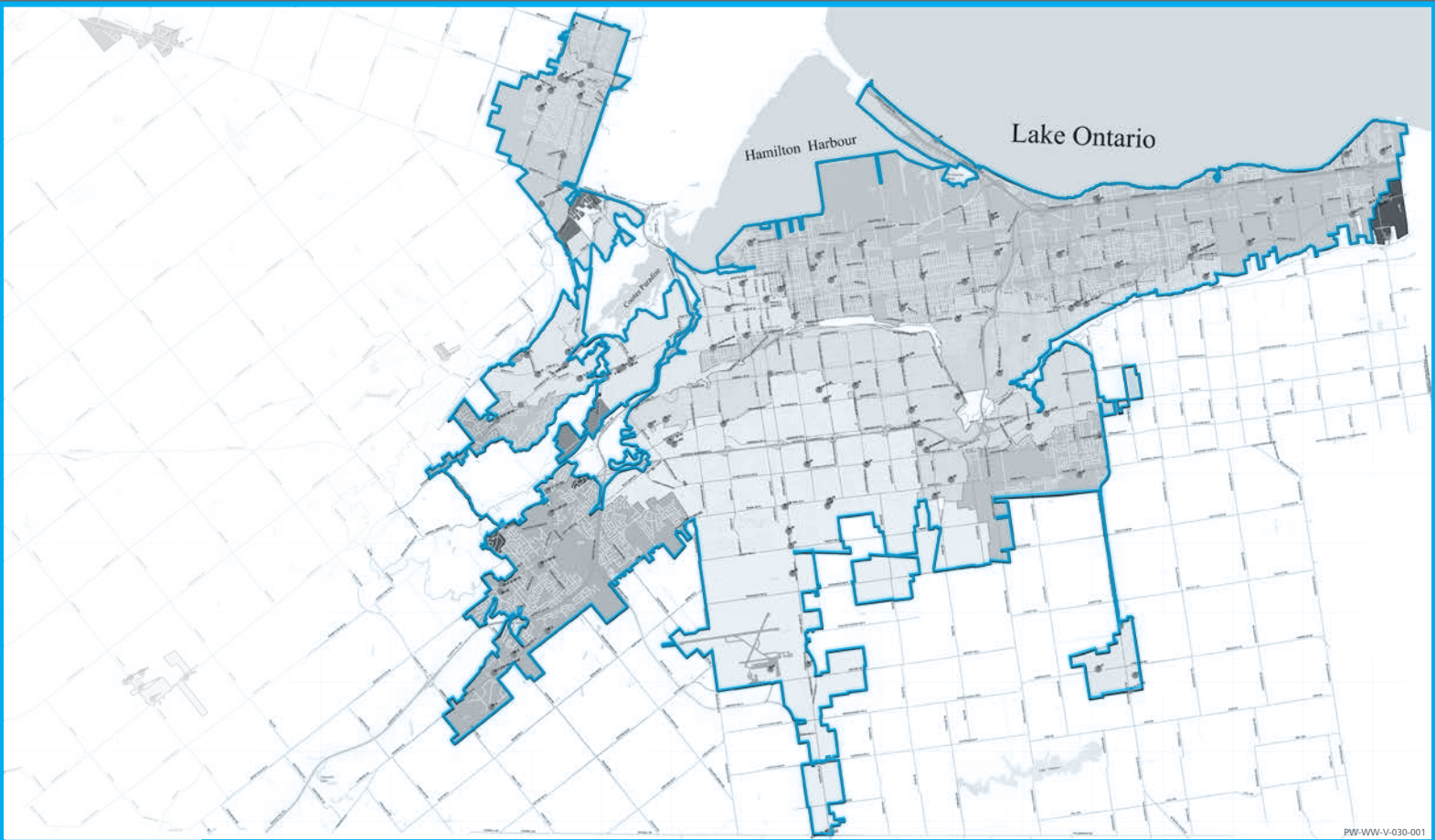
Distribution:

The water distribution system is comprised of 22 pumping stations; 12 reservoirs, 4 elevated storage tanks, one standpipe and over 2,000kms of watermains.



Sampling & Analysis:

Continuous monitoring equipment such as chlorine analyzers, turbidity meters and fluoride analyzers, ensure the maintenance of high quality water. Raw water is sampled and analyzed weekly; treated water is sampled and analyzed twice per day; distribution water is sampled and analyzed 5 days per week. In addition, chlorine residual in the distribution system is analyzed daily.

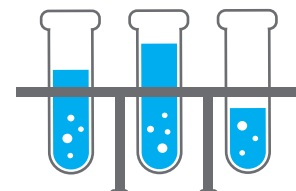


WOODWARD DRINKING WATER SUBSYSTEM



List all water treatment chemicals used over this reporting period:

- Polyaluminum Chloride
- Liquid Chlorine
- Aqueous Ammonia
- Hydrofluorosilicic Acid
- Phosphoric Acid

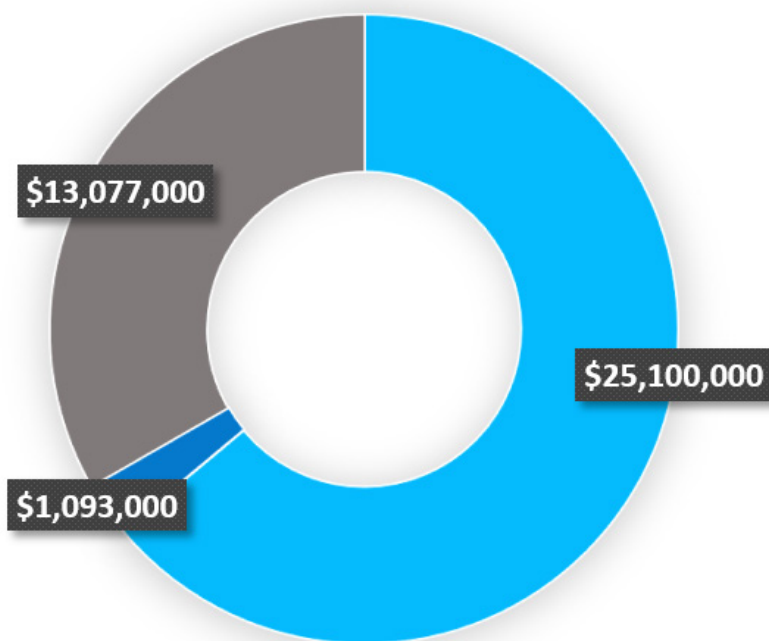


Were any significant expenses incurred to:

Install required equipment	YES	NO
Repair required equipment	YES	NO
Replace required equipment	YES	NO

Please provide a brief description and a breakdown of monetary expenses incurred in 2018.

In 2018, the following expenses were incurred to complete repairs, maintenance and upgrades to the Drinking Water Systems within the City of Hamilton.



- Total DWS - Distribution Repair, Rehabilitation and Replacement (Repairs to watermains, valves and service lines. Rehabilitation to 5.3kms of watermains. 5.2kms of watermain replacement)
- Total DWS - Maintenance and Repairs (Maintenance, repair and replacement of equipment related to raw water collection, sedimentation, flocculation, filtration, UV and chemical disinfection, electrical substations, well sites, water towers, reservoirs and pumping stations.
- Total DWS - Water Capital Upgrade Projects

2018 HAMILTON DRINKING WATER SYSTEM WOODWARD SUBSYSTEM EXPENSE HIGHLIGHTS

Repairs to Watermains, Valves and Service Lines \$14,500,000 (City total)

Corrosion Control Capital Project \$5,200,000

New Waterdown Water Tower Capital Project \$1,400,000

Pump Station Upgrade Capital Projects \$1,242,000

Water Control Valves Upgrade Capital Project \$1,600,000

Water Treatment Plant Upgrades Capital Project \$1,090,000

Security of Water Pump Station Facilities Capital Project \$795,000

Woodward Water Treatment Plant Maintenance and Repairs to: Traveling Screen #1, Traveling Screen #3 (2018 tear out only), Electrical Substation Maintenance, Qualified Chlorine Contractor, Surge Building PRV Maintenance, Fluoride Analyzer Maintenance, Low Lift Sample Pumps, Chlorine Car Loading Station Maintenance, Water Plant Valve Actuators. \$620,500

Woodward Drinking Water Subsystem Outstation Maintenance and Repairs to: HD005 Pump #1 Overhaul, HD005 Electrical Maintenance, Greenhill 4B/5A Electrical Repairs and Maintenance, HD007 Pump Overhaul, HD12A Pump Overhaul, HD018 Chlorine Analyzer Maintenance, HD024 Chlorine Analyzer Maintenance. \$374,800

Reservoir Upgrade Capital Projects \$364,000

Check Valve Replacement Projects \$180,500

Anti-stagnation Valve Project \$90,000

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre.

Notification Date (m-d-y)	Location of Adverse	Adverse Water Quality Incident	Resolution
03-09-2018	Woodward WTP	Operational Adverse Equipment Malfunction. There was a hot water leak above #13 Filter at Water Plant. There was one drip of hot water every 15-20 seconds dripping in the middle of #13 Filter. The hot water contains a conditioning agent comprised mostly of sodium hydroxide.	→ On March 10th, the hot water line for the South/East Quadrant was isolated, Filter #13 was taken out of service and backwashed. Treated samples were taken for Schedule 23 Metals and VOCs testing. All results were consistent with historical values. On March 12th the hot water line above Filter #13 was repaired and observed to have no more leaks. The filter was backwashed and returned to service.
05-26-2018	Fire Station, 363 Isaac Brock Dr.	Total Coliforms = 1 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location, one upstream and one downstream hydrant. All results passed. The adverse was not confirmed.
07-06-2018	Delbrook Court	Duty to report other observations. There was a watermain in need of emergency repair at the intersection of Royal Ave. and Stroud. In order to facilitate the repair, the City of Hamilton installed a temporary overland water line and put it into service before samples were taken and tested.	→ Precautionary Boil Water Advisory was issued on July 6th. Two sets of samples were taken 24 hours apart. All results passed. Precautionary Boil Water Advisory was lifted on July 9th. On August 5th, two sets of samples were taken 24 hours apart from the repaired watermain. All results passed. The overland water line was removed on August 8th and the repaired watermain was put back in service.
08-15-2018	Hydrant FL03H025	Free Chlorine = 0.02 mg/L Combined Chlorine = 0.15 mg/L (Regulatory requirement is minimum combined chlorine of 0.25 mg/L or free chlorine of 0.05 mg/L)	→ Watermain was flushed to restore chlorine. Flushing restored the combined chlorine to 1.18 mg/L.

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08-30-2018	Lee Smith Booster Station – Ancaster	Total Coliforms = 4 CFU/100 mL (Regulatory requirement is 0 CFU/100mL)	<ul style="list-style-type: none"> → • August 30th, resample and test - resulted in confirmed AWQI at Lee Smith Booster Station. • September 1st, resample and test - resulted in adverse at upstream hydrant. • September 2nd, resample and test. Two sets of samples were taken 24 hours apart. All results passed. • Reservoir was cleaned on September 12th, disinfected in the morning of September 14th utilizing Method 2 of the AWWA Standard. It was refilled to overflow and isolated. • September 15th, two sets of samples were taken 24 hours apart. All results passed.
10-03-2018	Central Fire Station, 35-43 John St. N.	Total Coliforms = 2 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location, one upstream and one downstream hydrant. All results passed. The adverse was not confirmed.
10-24-2018	Fire Station 24, 252 Parkside Dr.	Total Coliforms = 2 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location, one upstream and one downstream hydrant. All results passed. The adverse was not confirmed.

Microbiological testing done under Schedule 10, 11, 12 and 17, 18 of Regulation 170/03, during this reporting period.

SAMPLE TYPE	NUMBER OF SAMPLES	RANGE OF E.COLI RESULTS (MIN #) to (MAX #) CFU/100ML	RANGE OF TOTAL COLIFORM RESULTS (MIN #) to (MAX #) CFU/100ML	NUMBER OF HPC SAMPLES	RANGE OF HPC RESULTS (MIN #) to (MAX #) CFU/1ML
RAW	52	0 to 50	0 to 870	N/A	N/A
TREATED	611	0	0	379	0 to 21
DISTRIBUTION	1,876	0	0 to 45	1,223	0 to 98

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

NOTE: For continuous monitors use 8760 as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) to (MAX #)	UNIT OF MEASURE
TURBIDITY - TREATED- FILTER 1	8,760	0.019 to 0.180	NTU
TURBIDITY - TREATED- FILTER 2	8,760	0.020 to 0.137	NTU
TURBIDITY - TREATED- FILTER 3	8,760	0.019 to 0.162	NTU
TURBIDITY - TREATED- FILTER 4	8,760	0.020 to 0.258	NTU
TURBIDITY - TREATED- FILTER 5	8,760	0.016 to 0.160	NTU
TURBIDITY - TREATED- FILTER 6	8,760	0.019 to 0.180	NTU
TURBIDITY - TREATED- FILTER 7	n/a	O/S	NTU
TURBIDITY - TREATED- FILTER 8	8,760	0.016 to 0.208	NTU
TURBIDITY - TREATED- FILTER 9	8,760	0.018 to 0.123	NTU
TURBIDITY - TREATED- FILTER 10	8,760	0.020 to 0.170	NTU
TURBIDITY - TREATED- FILTER 11	8,760	0.016 to 0.198	NTU
TURBIDITY - TREATED- FILTER 12	8,760	0.018 to 0.279	NTU
TURBIDITY - TREATED- FILTER 13	8,760	0.020 to 0.182	NTU
TURBIDITY - TREATED- FILTER 14	8,760	0.019 to 0.139	NTU
TURBIDITY - TREATED- FILTER 15	8,760	0.017 to 0.138	NTU
TURBIDITY - TREATED- FILTER 16	8,760	0.015 to 0.277	NTU
TURBIDITY - TREATED- FILTER 17	8,760	0.016 to 0.224	NTU
TURBIDITY - TREATED- FILTER 18	8,760	0.019 to 0.195	NTU
TURBIDITY - TREATED- FILTER 19	8,760	0.019 to 0.198	NTU
TURBIDITY - TREATED- FILTER 20	8,760	0.026 to 0.136	NTU
TURBIDITY - TREATED- FILTER 21	8,760	0.019 to 0.279	NTU
TURBIDITY - TREATED- FILTER 22	8,760	0.019 to 0.101	NTU
TURBIDITY - TREATED- FILTER 23	8,760	0.022 to 0.285	NTU
TURBIDITY - TREATED- FILTER 24	8,760	0.017 to 0.147	NTU
COMBINED CHLORINE - TREATED	8,760	1.17 to 2.84	mg/L
FREE CHLORINE - DISTRIBUTION	1,980	<0.02 to 0.30	mg/L
COMBINED CHLORINE - DISTRIBUTION	1,980	0.62 to 2.77	mg/L
FLUORIDE – TREATED (IF THE DWS PROVIDES FLUORIDATION)	8,760	0.40 to 0.90	mg/L

O/S - OUT OF SERVICE

Summary of additional testing and sampling carried out in accordance with the requirement of a licence, approval, order or other legal instrument.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
TREATED – MICROCYSTIN	2018-06-05 to 2018-11-06	<0.15	ug/L
RAW - MICROCYSTIN	2018-01-09 to 2018-12-11	<0.15 to 0.16	ug/L
TREATED - CHLORIDE	2018-11-13	31.5	mg/L
TREATED - SULPHATE	2018-11-13	24.7	mg/L
TREATED - O-PHOSPHATE AS PO4	2018-11-05 to 2018-12-31	<0.15 to 3.80	mg/L
TREATED – COLOUR (APPARENT)	2018-10-16	<2	CU
TREATED – COLOUR (TRUE)	2018-10-16	<2	CU
TREATED - ALKALINITY	2018-10-16	85	mg/L
TREATED - IRON	2018-10-16	<0.003	mg/L
TREATED – COPPER	2018-10-16	0.0002	mg/L
TREATED – TOTAL DISSOLVED SOLIDS	2018-10-16	178	mg/L
PLUMBING – COPPER	2018-12-17 to 2018-12-21	0.0020 to 0.0510	mg/L
DISTRIBUTION - IRON	2018-12-11 to 2018-12-12	<0.003 to 0.056	mg/L
DISTRIBUTION - O-PHOSPHATE AS PO4	2018-11-05 to 2018-12-27	<0.15 to 2.55	mg/L
DISTRIBUTION - FIELD TEMPERATURE	2018-11-05 to 2018-12-27	7.1 to 17.3	°C
DISTRIBUTION - FIELD TURBIDITY	2018-11-05 to 2018-12-27	0.06 to 1.10	NTU

PARAMETER	NUMBER OF GRAB SAMPLES	RESULT VALUE	UNIT OF MEASURE
TEMPERATURE – RAW	8,760	-0.97 to 23.08	°C
PH – TREATED	1,296	6.78 to 7.53	pH
ORTHOPHOSPHATE – TREATED	1,296	0.03 to 6.36	mg/L

Summary of Inorganic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
ANTIMONY	2018-05-22 to 2018-10-16	0.0001 to 0.0002	mg/L	0
ARSENIC	2018-05-22 to 2018-10-16	0.0006 to 0.0007	mg/L	0

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**Summary of Inorganic parameters required by Regulation 170/03 and tested during this reporting period.
(continued)...**

BARIUM	2018-05-22 to 2018-10-16	0.0206 to 0.0233	mg/L	0
BORON	2018-05-22 to 2018-10-16	0.019 to 0.024	mg/L	0
CADMIUM	2018-05-22 to 2018-10-16	<0.0001	mg/L	0
CHROMIUM	2018-05-22 to 2018-10-16	<0.0001	mg/L	0
FLUORIDE	2018-05-22 to 2018-10-16	0.58 to 0.59	mg/L	0
MERCURY	2018-05-22 to 2018-10-16	<0.00005	mg/L	0
NITRATE AS N	2018-01-23 to 2018-10-16	0.20 to 0.42	mg/L	0
NITRITE AS N	2018-01-23 to 2018-10-16	<0.01	mg/L	0
SELENIUM	2018-05-22 to 2018-10-16	0.0001	mg/L	0
SODIUM	2018-05-22 to 2018-10-16	14.4 to 18.7	mg/L	1
URANIUM	2018-05-22	0.300	ug/L	0

Summary of lead testing under Schedule 15.1 during this reporting period.

LOCATION TYPE	NO. OF SAMPLES REQUIRED	NO. OF SAMPLES TAKEN	RANGE OF pH RESULTS (min #) to (max #) pH Units	RANGE OF ALKALINITY RESULTS (min #) to (max #) mg/L	RANGE OF LEAD RESULTS (min #) to (max #) mg/L	NO. OF LEAD AWQIs	NO. OF LEAD EXCEEDANCES
PLUMBING-NR	2	2	7.48	N/A	0.0004 to 0.0008	0	0
PLUMBING-R	38	38	7.41 to 7.65	N/A	0.0002 to 0.0128	0	0
DISTRIBUTION	2	2	7.48 to 7.51	87 to 89	0.0001 to 0.0002	0	0

NR - Non Residential
R- Residential



Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
TREATED				
1,1-DICHLOROETHYLENE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROENZENE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
1,4-DICHLOROENZENE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
BENZENE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
CARBON TETRACHLORIDE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
CHLOROENZENE	2018-05-22 to 2018-10-16	<0.3	ug/L	0
DICHLOROMETHANE	2018-05-22 to 2018-10-16	<0.5	ug/L	0
ETHYLBENZENE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
TETRACHLOROETHYLENE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
TOLUENE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
TRICHLOROETHYLENE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
VINYL CHLORIDE	2018-05-22 to 2018-10-16	<0.2	ug/L	0
XYLENE	2018-05-22 to 2018-10-16	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2018-05-22	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2018-05-22	<0.25	ug/L	0
2,4-D	2018-05-22	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2018-05-22	<0.15	ug/L	0
ALACHLOR	2018-05-22	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2018-05-22	0.06	ug/L	0
AZINPHOS-METHYL	2018-05-22	<0.05	ug/L	0
BENZO[A]PYRENE	2018-05-22	<0.004	ug/L	0
BROMOXYNIL	2018-05-22	<0.33	ug/L	0
CARBARYL	2018-05-22	<0.05	ug/L	0
CARBOFURAN	2018-05-22	<0.01	ug/L	0
CHLORPYRIFOS (DURSBAN)	2018-05-22	<0.02	ug/L	0
DIAZINON	2018-05-22	<0.02	ug/L	0
DICAMBA	2018-05-22	<0.20	ug/L	0
DICLOFOP-METHYL	2018-05-22	<0.40	ug/L	0
DIMETHOATE	2018-05-22	<0.03	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DIQUAT	2018-05-22	<1	ug/L	0
DIURON	2018-05-22	<0.03	ug/L	0
GLYPHOSATE	2018-05-22	<1	ug/L	0
MALATHION	2018-05-22	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2018-05-22	<0.00012	mg/L	0
METOLACHLOR	2018-05-22	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2018-05-22	<0.02	ug/L	0
PARAQUAT	2018-05-22	<1	ug/L	0
PCBs TOTAL	2018-05-22	<0.05	ug/L	0
PENTACHLOROPHENOL	2018-05-22	<0.15	ug/L	0
PHORATE	2018-05-22	<0.01	ug/L	0
PICLORAM	2018-05-22	<1	ug/L	0
PROMETRYNE	2018-05-22	<0.03	ug/L	0
SIMAZINE	2018-05-22	<0.01	ug/L	0
TERBUFOS	2018-05-22	<0.01	ug/L	0
TRIALATE	2018-05-22	<0.01	ug/L	0
TRIFLURALIN	2018-05-22	<0.02	ug/L	0

DISTRIBUTION

TOTAL TRIHALOMETHANES - DISTRIBUTION	Running annual average for the last four quarters.	25.2	ug/L	0
HALOACETIC ACIDS	2018-01-23 to 2018-10-15	<5.3	ug/L	N/A

* The Maximum Acceptable Concentration for Trihalomethanes in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03).

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)

DEFINITIONS:

AWQI: Adverse Water Quality Incident
mg/L: milligrams per litre
ug/L: micrograms per litre

CFU: Colony Forming Unit
mL: millilitre

HPC: Heterotrophic Plate Count
N/A: Not Applicable

CITY OF HAMILTON
FIFTY ROAD DRINKING WATER SUBSYSTEM (DWSS)
WATER QUALITY ANNUAL REPORT



2018

Ontario Regulation 170/03 Section 11

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Drinking Water System Number	Drinking Water System Name	Drinking Water System Owner	Drinking Water System Category	Period Being Reported
260069173	Fifty Road Subsystem of Hamilton Drinking Water System	City of Hamilton	Small Municipal Residential	January 1, 2018 to December 31, 2018

Complete if your Category is "Large Municipal Residential" or "Small Municipal Residential"

Does your Drinking Water System serve more than 10,000 people? YES NO

Is your annual report available to the public at no charge on a website on the Internet? www.hamilton.ca/waterquality YES NO

Location where Summary Report required under Ontario Regulation 170/03 Schedule 22 will be available for inspection: 700 Woodward Administration Building, Compliance Support Group

Complete for all other Categories

Number of Designated Facilities served: N/A

Did you provide a copy of your annual report to all Designated Facilities you serve? N/A

Number of Interested Authorities you report to: N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? N/A





List all Drinking Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
None other than Fifty Road Subsystem	260069173



Did you provide a copy of your annual report to all Drinking Water System owners that are connected to you and to whom you provide all of its drinking water?

YES NO **NOT APPLICABLE**



Indicate how you notified system users that your annual report is available, and is free of charge:

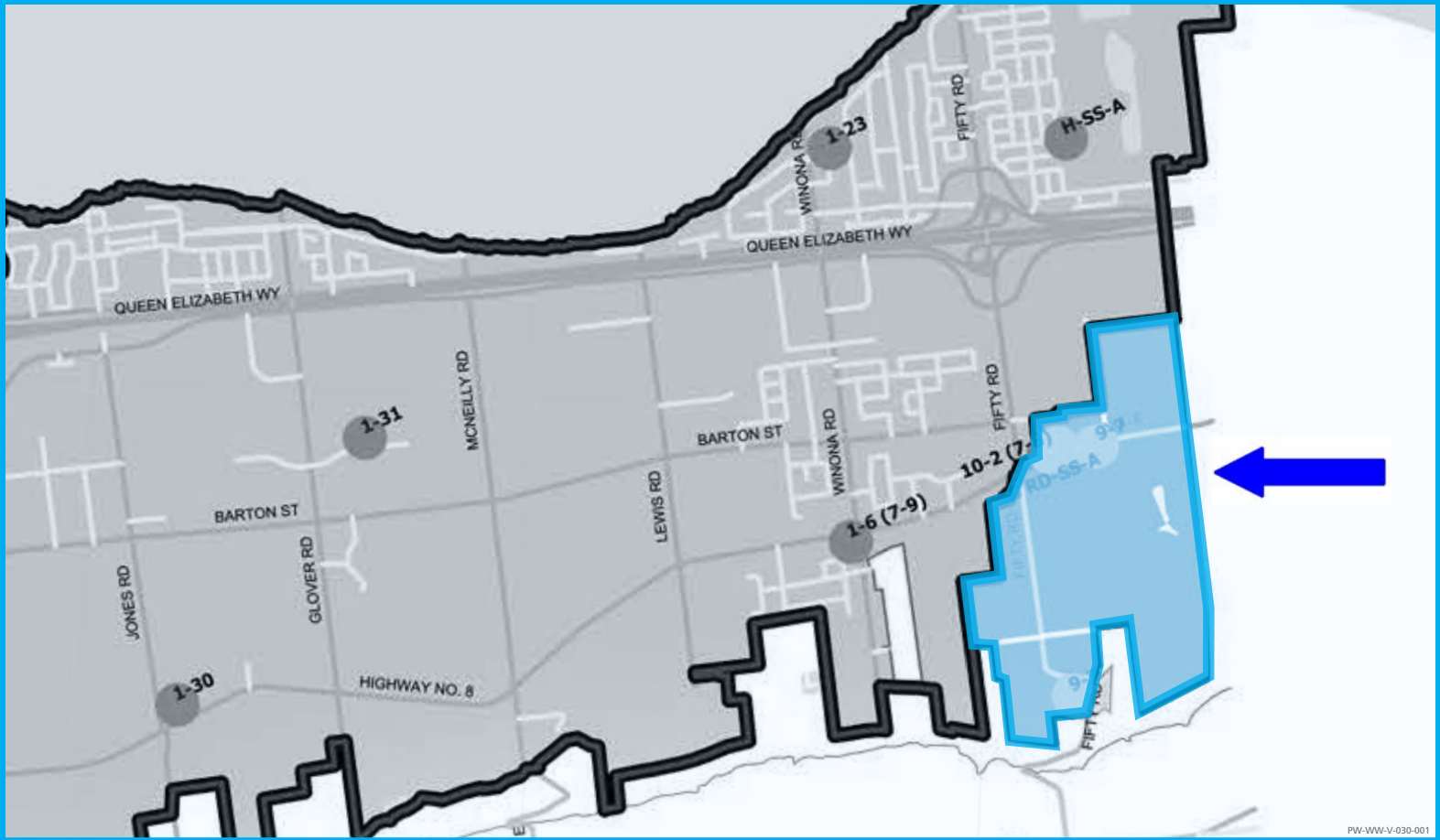
System users are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.



HAMILTON DWS, FIFTY ROAD SUBSYSTEM

The treated water supply for this area comes from the Town of Grimsby Water Distribution System and serves a population of approximately 200 people. Water is provided from Grimsby west along Highway 8, then south on Fifty Road to Concession Road and to an underground, 1,100m³ storage reservoir operated by the City of Hamilton. The reservoir supplies water to residences on Reservoir Park Road.

A pump, running continuously, maintains distribution water pressure. Water pumped in excess of water system demand is circulated back to the reservoir. Fluoridation is not carried out on the water supplied by the Town of Grimsby. The reservoir water chlorine residual is maintained by a rechlorination system at the reservoir. Distribution water is sampled and analyzed one day per week. Chlorine residual in the distribution system is analyzed twice per week.



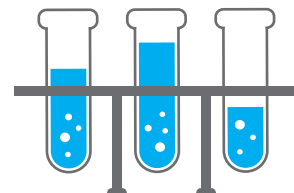
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FIFTY ROAD DRINKING WATER SUBSYSTEM



List all water treatment chemicals used over this reporting period:

→ Sodium Hypochlorite



Were any significant expenses incurred to:

Install required equipment	YES	<input type="text" value="NO"/>
Repair required equipment	YES	<input type="text" value="NO"/>
Replace required equipment	YES	<input type="text" value="NO"/>

2018 FIFTY ROAD DRINKING WATER SUBSYSTEM HIGHLIGHTS

There were no significant projects initiated in 2018.

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre.

Notification Date (m-d-y)	Location of Adverse	Adverse Water Quality Incident	Resolution
10-02-2018	Fifty Road Sampling Station A	Total Coliforms = 1 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location, one upstream and one downstream hydrant. All results passed. The adverse was not confirmed



Microbiological testing done under Schedule 10, 11, 12 and 17, 18 of Regulation 170/03, during this reporting period.

SAMPLE TYPE	NUMBER OF SAMPLES	RANGE OF E.COLI RESULTS (MIN #) to (MAX #)	RANGE OF TOTAL COLIFORM RESULTS (MIN #) to (MAX #)	NUMBER OF HPC SAMPLES	RANGE OF HPC RESULTS (MIN #) to (MAX #)
DISTRIBUTION	109	0	0 to 1	106	0 to 220

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

NOTE: For continuous monitors use 8760 as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) to (MAX #)	UNIT OF MEASURE
FREE CHLORINE - DISTRIBUTION	161	0.66 to 1.81	mg/L

Summary of additional testing and sampling carried out in accordance with the requirement of a licence, approval, order or other legal instrument.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

Summary of Inorganic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
N/A	-	-	-	-

Summary of lead testing under Schedule 15.1 during this reporting period.

LOCATION TYPE	NO. OF POINTS SAMPLED	NO. OF SAMPLES TAKEN	RANGE OF pH RESULTS (min #) to (max #) pH Units	RANGE OF ALKALINITY RESULTS (min #) to (max #) mg/L	RANGE OF LEAD RESULTS (min #) to (max #) mg/L	NO. OF LEAD AWQIs	NO. OF POINTS OF LEAD EXCEEDANCES
PLUMBING-NR	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PLUMBING-R	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISTRIBUTION	2	2	7.66 to 7.70	86 to 87	N/A	N/A	N/A

NR - Non Residential R - Residential

Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DISTRIBUTION				
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	33.1	ug/L	0
HALOACETIC ACIDS	2018-01-23 to 2018-10-15	30.3 to 52.1	ug/L	N/A

* The Maximum Acceptable Concentration for Trihalomethanes in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03).

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)

DEFINITIONS:

AWQI: Adverse Water Quality Incident
 mg/L: milligrams per litre
 ug/L: micrograms per litre

CFU: Colony Forming Unit
 mL: millilitre

HPC: Heterotrophic Plate Count
 N/A: Not Applicable



CITY OF HAMILTON
CARLISLE DRINKING WATER SYSTEM (DWS)
WATER QUALITY ANNUAL REPORT

2018

Ontario Regulation 170/03 Section 11

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Drinking Water System Number	Drinking Water System Name	Drinking Water System Owner	Drinking Water System Category	Period Being Reported
220004108	Carlisle Drinking Water System FDC01, FDC02, FDC03(R), FDC05	City of Hamilton	Large Municipal Residential	January 1, 2018 to December 31, 2018

Complete if your Category is "Large Municipal Residential" or "Small Municipal Residential"

Does your Drinking Water System serve more than 10,000 people? YES NO

Is your annual report available to the public at no charge on a website on the Internet? www.hamilton.ca/waterquality YES NO

Location where Summary Report required under Ontario Regulation 170/03 Schedule 22 will be available for inspection: 700 Woodward Administration Building, Compliance Support Group

Complete for all other Categories

Number of Designated Facilities served: N/A

Did you provide a copy of your annual report to all Designated Facilities you serve? N/A

Number of Interested Authorities you report to: N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? N/A





List all Drinking Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
None other than Carlisle System	220004108



Did you provide a copy of your annual report to all Drinking Water System owners that are connected to you and to whom you provide all of its drinking water?

YES NO **NOT APPLICABLE**



Indicate how you notified system users that your annual report is available, and is free of charge:

System users are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.



CARLISLE DWS

The Carlisle water supply system consists of four wells, one elevated water storage tank, treatment, sampling and analysis, which services a population of approximately 1,800 people. The water source for the community of Carlisle is ground water.

Water Wells:

- Carlisle Well FDC01 has a diameter of 157mm and a depth of approximately 40 metres.
- Carlisle Well FDC02 has a diameter of 300mm at a depth of 2.6 metres and a diameter of 250mm from 2.6 metres to 36 metres.
- Carlisle Well FDC03R has a diameter of 200mm and a depth of approximately 33.5 metres. It is a drilled ground water well under the influence of surface water (GUDI).
- Carlisle Well FDC05 has a diameter of 214mm and a depth of approximately 28 metres. It is a drilled ground water well under the influence of surface water (GUDI).

Treatment:

- Within a treatment well house, both wells, FDC01 and FDC02 are joined to a common header for flow metering and disinfection. Sodium hypochlorite (chlorine) within a chlorine contact chamber is used to ensure disinfection of the water.
- Within the well house, both FDC03R and FDC05 discharges have separate flow metering, filtration and UV light disinfection streams. The flows are combined for treatment by sodium hypochlorite (chlorine) within a chlorine contact chamber to ensure disinfection of the water prior to entering the distribution system.
- Fluoridation is not carried out at any of the Carlisle community wells.

Water Storage:

An elevated water storage tank is located at the same site as wells FDC01 and FDC02. The storage tank has an operating capacity of 1,400m³. It was designed for peak hour water demand equalization as well as fire and emergency storage.

Sampling & Analysis:

All wells are equipped with on-line chlorine residual and turbidity analyzers that continually monitor the treated water quality. Raw, treated and distribution water is sampled and analyzed weekly. In addition, chlorine residual in the distribution system is analyzed daily.



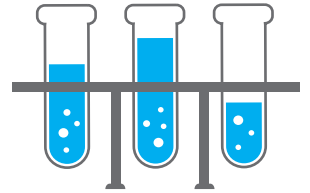
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CARLISLE DRINKING WATER SYSTEM



List all water treatment chemicals used over this reporting period:

→ Sodium Hypochlorite



Were any significant expenses incurred to:

Install required equipment	YES	<input checked="" type="checkbox"/> NO
Repair required equipment	<input checked="" type="checkbox"/> YES	NO
Replace required equipment	YES	<input checked="" type="checkbox"/> NO

2018 CARLISLE DRINKING WATER SYSTEM HIGHLIGHTS

UV System Maintenance \$42,000

Carlisle Conservation Committee (C3) continued water conservation efforts through 2018.
www.hamilton.ca/C3

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre.

Notification Date (m-d-y)	Location of Adverse	Adverse Water Quality Incident	Resolution
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We are pleased to announce that there were no Adverse Water Quality Incidents for the period of January to December 2018.



Microbiological testing done under Schedule 10, 11, 12 and 17, 18 of Regulation 170/03, during this reporting period.

SAMPLE TYPE	NUMBER OF SAMPLES	RANGE OF E.COLI RESULTS (MIN #) to (MAX #) CFU/100ML	RANGE OF TOTAL COLIFORM RESULTS (MIN #) to (MAX #) CFU/100ML	NUMBER OF HPC SAMPLES	RANGE OF HPC RESULTS (MIN #) to (MAX #) CFU/1ML
RAW - FDC01	52	0	0	NA	NA
RAW - FDC02	52	0	0	NA	NA
RAW - FDC03(R)	53	0	0	NA	NA
RAW - FDC05	53	0	0	NA	NA
TREATED - FDC01	52	0	0	52	0 to 1
TREATED - FDC02	52	0	0	52	0 to 1
TREATED - FDC03(R)	53	0	0	53	0 to 12
TREATED - FDC05	53	0	0	53	0 to 1
DISTRIBUTION	208	0	0	208	0 to 5

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

NOTE: For continuous monitors use 8760 as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) to (MAX #)	UNIT OF MEASURE
TURBIDITY - RAW - FDC01	52	0.05 to 0.33	NTU
TURBIDITY - RAW - FDC02	52	0.03 to 0.28	NTU
TURBIDITY - RAW - FDC03(R)	8,760	0.05 to 0.70	NTU
TURBIDITY - RAW - FDC05	8,760	0.03 to 0.94	NTU
FREE CHLORINE - TREATED - FDC01 AND FDC02	8,760	1.34 to 2.89	mg/L
FREE CHLORINE - TREATED - FDC03(R) AND FDC05	8,760	1.22 to 2.57	mg/L
FREE CHLORINE - DISTRIBUTION	365	1.03 to 2.27	mg/L

Summary of additional testing and sampling carried out in accordance with the requirement of a licence, approval, order or other legal instrument.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

Summary of Inorganic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC01 - TREATED				
ANTIMONY	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
ARSENIC	2018-05-15 to 2018-10-16	0.0001 to 0.0002	mg/L	0
BARIUM	2018-05-15 to 2018-10-16	0.0892 to 0.0906	mg/L	0
BORON	2018-05-15 to 2018-10-16	0.013 to 0.022	mg/L	0
CADMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
CHROMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
FLUORIDE	2018-05-15 to 2018-10-16	0.07	mg/L	0
MERCURY	2018-05-15 to 2018-10-16	<0.00005	mg/L	0
NITRATE AS N	2018-01-22 to 2018-10-16	1.55 to 2.66	mg/L	0
NITRITE AS N	2018-01-22 to 2018-10-16	<0.01	mg/L	0
SELENIUM	2018-05-15 to 2018-10-16	0.0002	mg/L	0
SODIUM	2018-05-15 to 2018-10-16	17.9 to 19.9	mg/L	0
URANIUM	2018-05-15 to 2018-10-16	0.414 to 0.428	ug/L	0
CARLISLE WELL FDC02 - TREATED				
ANTIMONY	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
ARSENIC	2018-05-15 to 2018-10-16	0.0001	mg/L	0
BARIUM	2018-05-15 to 2018-10-16	0.0925 to 0.0928	mg/L	0
BORON	2018-05-15 to 2018-10-16	0.014 to 0.017	mg/L	0
CADMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
CHROMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
FLUORIDE	2018-05-15 to 2018-10-16	0.06 to 0.07	mg/L	0
MERCURY	2018-05-15 to 2018-10-16	<0.00005	mg/L	0
NITRATE AS N	2018-01-22 to 2018-10-16	2.08 to 3.24	mg/L	0
NITRITE AS N	2018-01-22 to 2018-10-16	<0.01	mg/L	0
SELENIUM	2018-05-15 to 2018-10-16	0.0002	mg/L	0
SODIUM	2018-05-15 to 2018-10-16	28.1 to 29.7	mg/L	0
URANIUM	2018-05-15 to 2018-10-16	0.365 to 0.422	ug/L	0

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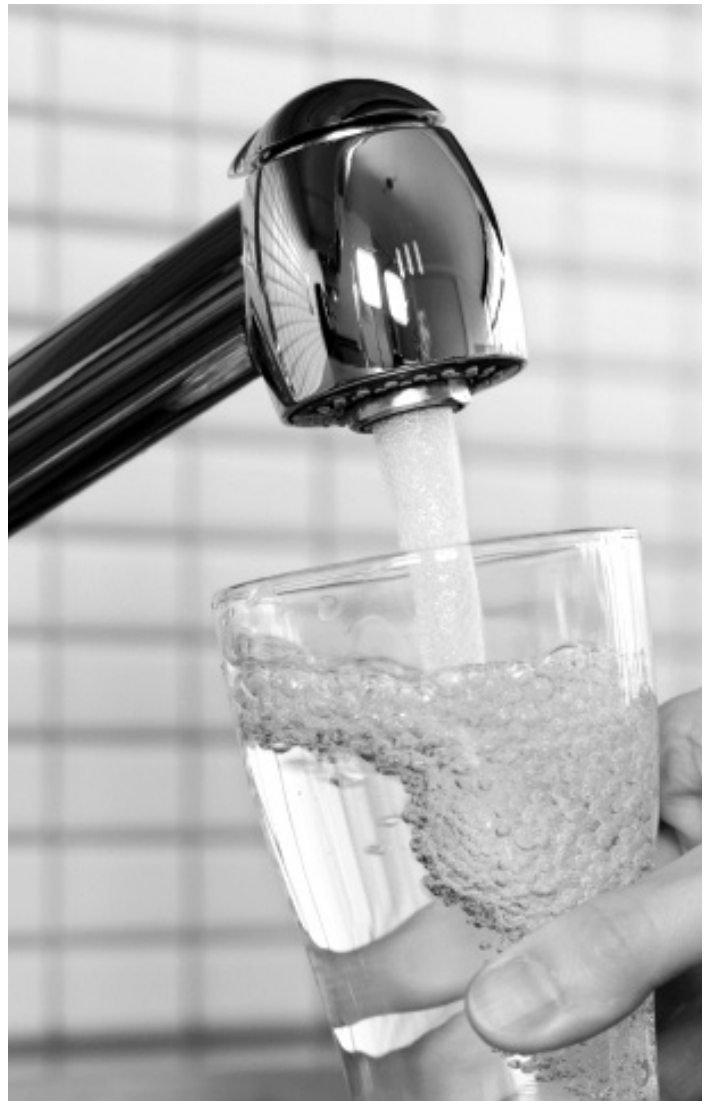
Summary of Inorganic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC03(R) - TREATED				
ANTIMONY	2018-05-15 to 2018-10-16	0.0002	mg/L	0
ARSENIC	2018-05-15 to 2018-10-16	0.0004	mg/L	0
BARIUM	2018-05-15 to 2018-10-16	0.0750 to 0.0794	mg/L	0
BORON	2018-05-15 to 2018-10-16	0.020 to 0.023	mg/L	0
CADMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
CHROMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
FLUORIDE	2018-05-15 to 2018-10-16	0.07	mg/L	0
MERCURY	2018-05-15 to 2018-10-16	<0.00005	mg/L	0
NITRATE AS N	2018-01-22 to 2018-10-16	0.18 to 0.34	mg/L	0
NITRITE AS N	2018-01-22 to 2018-10-16	<0.01	mg/L	0
SELENIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
SODIUM	2018-05-15 to 2018-10-16	46.1 to 48.8	mg/L	0
URANIUM	2018-05-15 to 2018-10-16	0.698 to 0.709	ug/L	0
CARLISLE WELL FDC05 - TREATED				
ANTIMONY	2018-05-15 to 2018-10-16	<0.0001 to 0.0001	mg/L	0
ARSENIC	2018-05-15 to 2018-10-16	0.0009 to 0.0014	mg/L	0
BARIUM	2018-05-15 to 2018-10-16	0.0784 to 0.0809	mg/L	0
BORON	2018-05-15 to 2018-10-16	0.020 to 0.023	mg/L	0
CADMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
CHROMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
FLUORIDE	2018-05-15 to 2018-10-16	0.07 to 0.08	mg/L	0
MERCURY	2018-05-15 to 2018-10-16	<0.00005	mg/L	0
NITRATE AS N	2018-01-22 to 2018-10-16	<0.01 to 0.24	mg/L	0
NITRITE AS N	2018-01-22 to 2018-10-16	<0.01	mg/L	0
SELENIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
SODIUM	2018-05-15 to 2018-10-16	51.2 to 55.7	mg/L	0
URANIUM	2018-05-15 to 2018-10-16	0.459 to 0.703	ug/L	0

Summary of lead testing under Schedule 15.1 during this reporting period.

LOCATION TYPE	NO. OF SAMPLES REQUIRED	NO. OF SAMPLES TAKEN	RANGE OF pH RESULTS (min #) to (max #) pH Units	RANGE OF ALKALINITY RESULTS (min #) to (max #) mg/L	RANGE OF LEAD RESULTS (min #) to (max #) mg/L	NO. OF LEAD AWQIs	NO. OF LEAD EXCEEDANCES
PLUMBING-NR	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PLUMBING-R	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISTRIBUTION	4	4	7.27 to 7.31	309 to 320	N/A	N/A	N/A

NR - Non Residential R - Residential



Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC01 - TREATED				
1,1-DICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
BENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CARBON TETRACHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CHLOROBENZENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0
DICHLOROMETHANE	2018-05-15 to 2018-10-16	<0.5	ug/L	0
ETHYLBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TETRACHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TOLUENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TRICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
VINYL CHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
XYLENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2018-05-15	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2018-05-15	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2018-05-15	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2018-05-15	<0.15	ug/L	0
ALACHLOR	2018-05-15	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2018-05-15	<0.01	ug/L	0
AZINPHOS-METHYL	2018-05-15	<0.05	ug/L	0
BENZO[A]PYRENE	2018-05-15	<0.004	ug/L	0
BROMOXYNIL	2018-05-15	<0.33	ug/L	0
CARBARYL	2018-05-15	<0.05	ug/L	0
CARBOFURAN	2018-05-15	<0.01	ug/L	0
CHLORPYRIFOS	2018-05-15	<0.02	ug/L	0
DIAZINON	2018-05-15	<0.02	ug/L	0
DICAMBA	2018-05-15	<0.20	ug/L	0
DICLOFOP-METHYL	2018-05-15	<0.40	ug/L	0
DIMETHOATE	2018-05-15	<0.03	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DIQUAT	2018-05-15	<1	ug/L	0
DIURON	2018-05-15	<0.03	ug/L	0
GLYPHOSATE	2018-05-15	<1	ug/L	0
MALATHION	2018-05-15	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2018-05-15	<0.00012	mg/L	0
METOLACHLOR	2018-05-15	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2018-05-15	<0.02	ug/L	0
PARAQUAT	2018-05-15	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2018-05-15	<0.05	ug/L	0
PENTACHLOROPHENOL	2018-05-15	<0.15	ug/L	0
PHORATE	2018-05-15	<0.01	ug/L	0
PICLORAM	2018-05-15	<1	ug/L	0
PROMETRYNE	2018-05-15	<0.03	ug/L	0
SIMAZINE	2018-05-15	<0.01	ug/L	0
TERBUFOS	2018-05-15	<0.01	ug/L	0
TRIALATE	2018-05-15	<0.01	ug/L	0
TRIFLURALIN	2018-05-15	<0.02	ug/L	0

CARLISLE WELL FDC02 - TREATED

1,1-DICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
BENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CARBON TETRACHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CHLOROBENZENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0
DICHLOROMETHANE	2018-05-15 to 2018-10-16	<0.5	ug/L	0
ETHYLBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TETRACHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TOLUENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TRICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
VINYL CHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
XYLENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2018-05-15	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2018-05-15	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2018-05-15	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2018-05-15	<0.15	ug/L	0
ALACHLOR	2018-05-15	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2018-05-15	<0.01	ug/L	0
AZINPHOS-METHYL	2018-05-15	<0.05	ug/L	0
BENZO[A]PYRENE	2018-05-15	<0.004	ug/L	0
BROMOXYNIL	2018-05-15	<0.33	ug/L	0
CARBARYL	2018-05-15	<0.05	ug/L	0
CARBOFURAN	2018-05-15	<0.01	ug/L	0
CHLORPYRIFOS	2018-05-15	<0.02	ug/L	0
DIAZINON	2018-05-15	<0.02	ug/L	0
DICAMBA	2018-05-15	<0.20	ug/L	0
DICLOFOP-METHYL	2018-05-15	<0.40	ug/L	0
DIMETHOATE	2018-05-15	<0.03	ug/L	0
DIQUAT	2018-05-15	<1	ug/L	0
DIURON	2018-05-15	<0.03	ug/L	0
GLYPHOSATE	2018-05-15	<1	ug/L	0
MALATHION	2018-05-15	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2018-05-15	<0.00012	mg/L	0
METOLACHLOR	2018-05-15	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2018-05-15	<0.02	ug/L	0
PARAQUAT	2018-05-15	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2018-05-15	<0.05	ug/L	0
PENTACHLOROPHENOL	2018-05-15	<0.15	ug/L	0
PHORATE	2018-05-15	<0.01	ug/L	0
PICLORAM	2018-05-15	<1	ug/L	0
PROMETRYNE	2018-05-15	<0.03	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
SIMAZINE	2018-05-15	<0.01	ug/L	0
TERBUFOS	2018-05-15	<0.01	ug/L	0
TRIALATE	2018-05-15	<0.01	ug/L	0
TRIFLURALIN	2018-05-15	<0.02	ug/L	0

CARLISLE WELL FDC03(R) - TREATED

1,1-DICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
BENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CARBON TETRACHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CHLOROBENZENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0
DICHLOROMETHANE	2018-05-15 to 2018-10-16	<0.5	ug/L	0
ETHYLBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TETRACHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TOLUENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TRICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
VINYL CHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
XYLENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2018-05-15	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2018-05-15	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2018-05-15	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2018-05-15	<0.15	ug/L	0
ALACHLOR	2018-05-15	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2018-05-15	<0.01	ug/L	0
AZINPHOS-METHYL	2018-05-15	<0.05	ug/L	0
BENZO[A]PYRENE	2018-05-15	<0.004	ug/L	0
BROMOXYNIL	2018-05-15	<0.33	ug/L	0
CARBARYL	2018-05-15	<0.05	ug/L	0
CARBOFURAN	2018-05-15	<0.01	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CHLORPYRIFOS	2018-05-15	<0.02	ug/L	0
DIAZINON	2018-05-15	<0.02	ug/L	0
DICAMBA	2018-05-15	<0.20	ug/L	0
DICLOFOP-METHYL	2018-05-15	<0.40	ug/L	0
DIMETHOATE	2018-05-15	<0.03	ug/L	0
DIQUAT	2018-05-15	<1	ug/L	0
DIURON	2018-05-15	<0.03	ug/L	0
GLYPHOSATE	2018-05-15	<1	ug/L	0
MALATHION	2018-05-15	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2018-05-15	<0.00012	mg/L	0
METOLACHLOR	2018-05-15	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2018-05-15	<0.02	ug/L	0
PARAQUAT	2018-05-15	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2018-05-15	<0.05	ug/L	0
PENTACHLOROPHENOL	2018-05-15	<0.15	ug/L	0
PHORATE	2018-05-15	<0.01	ug/L	0
PICLORAM	2018-05-15	<1	ug/L	0
PROMETRYNE	2018-05-15	<0.03	ug/L	0
SIMAZINE	2018-05-15	<0.01	ug/L	0
TERBUFOS	2018-05-15	<0.01	ug/L	0
TRIALATE	2018-05-15	<0.01	ug/L	0
TRIFLURALIN	2018-05-15	<0.02	ug/L	0

CARLISLE WELL FDC05 - TREATED

1,1-DICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,4-DICHLOROETHANE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
BENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CARBON TETRACHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DICHLOROMETHANE	2018-05-15 to 2018-10-16	<0.5	ug/L	0
ETHYLBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TETRACHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TOLUENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TRICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
VINYL CHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
XYLENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2018-05-15	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2018-05-15	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2018-05-15	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2018-05-15	<0.15	ug/L	0
ALACHLOR	2018-05-15	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2018-05-15	<0.01	ug/L	0
AZINPHOS-METHYL	2018-05-15	<0.05	ug/L	0
BENZO[A]PYRENE	2018-05-15	<0.004	ug/L	0
BROMOXYNIL	2018-05-15	<0.33	ug/L	0
CARBARYL	2018-05-15	<0.05	ug/L	0
CARBOFURAN	2018-05-15	<0.01	ug/L	0
CHLORPYRIFOS	2018-05-15	<0.02	ug/L	0
DIAZINON	2018-05-15	<0.02	ug/L	0
DICAMBA	2018-05-15	<0.20	ug/L	0
DICLOFOP-METHYL	2018-05-15	<0.40	ug/L	0
DIMETHOATE	2018-05-15	<0.03	ug/L	0
DIQUAT	2018-05-15	<1	ug/L	0
DIURON	2018-05-15	<0.03	ug/L	0
GLYPHOSATE	2018-05-15	<1	ug/L	0
MALATHION	2018-05-15	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2018-05-15	<0.00012	mg/L	0
METOLACHLOR	2018-05-15	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2018-05-15	<0.02	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
PARAQUAT	2018-05-15	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2018-05-15	<0.05	ug/L	0
PENTACHLOROPHENOL	2018-05-15	<0.15	ug/L	0
PHORATE	2018-05-15	<0.01	ug/L	0
PICLORAM	2018-05-15	<1	ug/L	0
PROMETRYNE	2018-05-15	<0.03	ug/L	0
SIMAZINE	2018-05-15	<0.01	ug/L	0
TERBUFOS	2018-05-15	<0.01	ug/L	0
TRIALATE	2018-05-15	<0.01	ug/L	0
TRIFLURALIN	2018-05-15	<0.02	ug/L	0

DISTRIBUTION

TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	13.0	ug/L	0
HALOACETIC ACIDS	2018-01-22 to 2018-10-16	<5.3	ug/L	N/A

* The Maximum Acceptable Concentration for Trihalomethanes in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03).

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)

DEFINITIONS:

AWQI: Adverse Water Quality Incident
mg/L: milligrams per litre
ug/L: micrograms per litre

CFU: Colony Forming Unit
mL: millilitre

HPC: Heterotrophic Plate Count
N/A: Not Applicable



CITY OF HAMILTON
FREELTON DRINKING WATER SYSTEM (DWS)
WATER QUALITY ANNUAL REPORT

2018

Ontario Regulation 170/03 Section 11

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Drinking Water System Number	Drinking Water System Name	Drinking Water System Owner	Drinking Water System Category	Period Being Reported
220004117	Freelton Drinking Water System FDF01, FDF03	City of Hamilton	Large Municipal Residential	January 1, 2018 to December 31, 2018

Complete if your Category is "Large Municipal Residential" or "Small Municipal Residential"

Does your Drinking Water System serve more than 10,000 people? YES NO

Is your annual report available to the public at no charge on a website on the Internet? www.hamilton.ca/waterquality YES NO

Location where Summary Report required under Ontario Regulation 170/03 Schedule 22 will be available for inspection: 700 Woodward Administration Building, Compliance Support Group

Complete for all other Categories

Number of Designated Facilities served: N/A

Did you provide a copy of your annual report to all Designated Facilities you serve? N/A

Number of Interested Authorities you report to: N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? N/A





List all Drinking Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
None other than Freulton System	220004117



Did you provide a copy of your annual report to all Drinking Water System owners that are connected to you and to whom you provide all of its drinking water?

YES NO **NOT APPLICABLE**



Indicate how you notified system users that your annual report is available, and is free of charge:

System users are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.



FREELTON DWS



The Freelton water supply system consists of two wells, one elevated water storage tank, treatment, sampling and analysis which services a population of approximately 790 people. The water source for the community of Freelton is ground water.

Water Wells:

- Freelton Well FDF01 is a 250mm diameter, approximately 21-metre-deep drilled ground water well.
- Freelton Well FDF03 is a 300mm diameter, approximately 50-metre-deep drilled ground water well.

Treatment:

- Sodium hypochlorite (chlorine) is used for disinfection within a chlorine contact chamber to ensure disinfection of the water prior to entering the distribution system.
- Fluoridation is not carried out at any of the Freelton community wells.

Water Storage:

An elevated water storage tank with an operating capacity of 2,840m³ is available for peak hour water demand equalization as well as fire and emergency storage.

Sampling & Analysis:

All wells are equipped with on-line chlorine residual analyzers and turbidity analyzers that continually monitor the treated water quality. Raw, treated and distribution water is sampled and analyzed weekly. In addition, chlorine residual in the distribution system is analyzed daily.



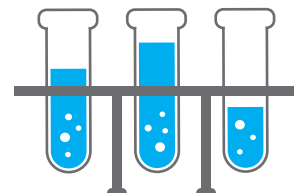
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FREELTON DRINKING WATER SYSTEM



List all water treatment chemicals used over this reporting period:

→ Sodium Hypochlorite



Were any significant expenses incurred to:

Install required equipment	YES	<input checked="" type="checkbox"/> NO
Repair required equipment	<input checked="" type="checkbox"/> YES	NO
Replace required equipment	<input checked="" type="checkbox"/> YES	NO

2018 FREELTON DRINKING WATER SYSTEM HIGHLIGHTS

Freelton Water Tower Upgrades \$1,580,000

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre.

Notification Date (m-d-y)	Location of Adverse	Adverse Water Quality Incident	Resolution
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We are pleased to announce that there were no Adverse Water Quality Incidents for the period of January to December 2018.



Microbiological testing done under Schedule 10, 11, 12 and 17, 18 of Regulation 170/03, during this reporting period.

SAMPLE TYPE	NUMBER OF SAMPLES	RANGE OF E.COLI RESULTS (MIN #)-(MAX #) CFU/100ML	RANGE OF TOTAL COLIFORM RESULTS (MIN #)-(MAX #) CFU/100ML	NUMBER OF HPC SAMPLES	RANGE OF HPC RESULTS (MIN #)-(MAX #) CFU/1ML
RAW - FDF01	53	0	0	N/A	N/A
RAW - FDF03	52	0	0	N/A	N/A
TREATED - FDF01	53	0	0	53	0 to 3
TREATED - FDF03	52	0	0	52	0 to 1
DISTRIBUTION	200	0	0	200	0 to 3

N/A — Not Applicable

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

NOTE: For continuous monitors use 8760 as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #)-(MAX #)	UNIT OF MEASURE
TURBIDITY - RAW - FDF01	53	0.07 to 0.28	NTU
TURBIDITY - RAW - FDF03	52	0.07 to 0.75	NTU
FREE CHLORINE - TREATED - FDF01	8,760	1.25 to 2.81	mg/L
FREE CHLORINE - TREATED - FDF03	8,760	1.20 to 2.59	mg/L
FREE CHLORINE - DISTRIBUTION	365	1.09 to 2.33	mg/L

Summary of additional testing and sampling carried out in accordance with the requirement of a licence, approval, order or other legal instrument.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

Summary of Inorganic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
FREELTON WELL FDF01 - TREATED				
ANTIMONY	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
ARSENIC	2018-05-15 to 2018-10-16	<0.0001 to 0.0001	mg/L	0
BARIUM	2018-05-15 to 2018-10-16	0.0655 to 0.0690	mg/L	0
BORON	2018-05-15 to 2018-10-16	0.018 to 0.022	mg/L	0
CADMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
CHROMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
FLUORIDE	2018-05-15 to 2018-10-16	0.08 to 0.09	mg/L	0
MERCURY	2018-05-15 to 2018-10-16	<0.00005	mg/L	0
NITRATE AS N	2018-01-22 to 2018-10-16	1.50 to 2.11	mg/L	0
NITRITE AS N	2018-01-22 to 2018-10-16	<0.01	mg/L	0
SELENIUM	2018-05-15 to 2018-10-16	0.0002 to 0.0003	mg/L	0
SODIUM	2018-05-15 to 2018-10-16	50.2 to 53.3	mg/L	0
URANIUM	2018-05-15 to 2018-10-16	0.275 to 0.278	ug/L	0
FREELTON WELL FDF03 - TREATED				
ANTIMONY	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
ARSENIC	2018-05-15 to 2018-10-16	0.0003 to 0.0008	mg/L	0
BARIUM	2018-05-15 to 2018-10-16	0.0679 to 0.0689	mg/L	0
BORON	2018-05-15 to 2018-10-16	0.014 to 0.017	mg/L	0
CADMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
CHROMIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
FLUORIDE	2018-05-15 to 2018-10-16	0.14 to 0.18	mg/L	0
MERCURY	2018-05-15 to 2018-10-16	<0.00005	mg/L	0
NITRATE AS N	2018-01-22 to 2018-10-16	<0.01 to 0.65	mg/L	0
NITRITE AS N	2018-01-22 to 2018-10-16	<0.01	mg/L	0
SELENIUM	2018-05-15 to 2018-10-16	<0.0001	mg/L	0
SODIUM	2018-05-15 to 2018-10-16	34.7 to 36.5	mg/L	0
URANIUM	2018-05-15 to 2018-10-16	0.268 to 0.275	ug/L	0

Summary of lead testing under Schedule 15.1 during this reporting period.

LOCATION TYPE	NO. OF SAMPLES REQUIRED	NO. OF SAMPLES TAKEN	RANGE OF pH RESULTS (min #) – (max #) pH Units	RANGE OF ALKALINITY RESULTS (min #) – (max #) mg/L	RANGE OF LEAD RESULTS (min #) – (max #) mg/L	NO. OF LEAD AWQIs	NO. OF LEAD EXCEEDANCES
PLUMBING-NR	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PLUMBING-R	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISTRIBUTION	4	4	7.56 to 7.87	276 to 295	N/A	N/A	N/A

NR - Non Residential R - Residential



Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
FREELTON WELL FDF01 - TREATED				
1,1-DICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
BENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CARBON TETRACHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CHLOROBENZENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0
DICHLOROMETHANE	2018-05-15 to 2018-10-16	<0.5	ug/L	0
ETHYLBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TETRACHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TOLUENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TRICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
VINYL CHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
XYLENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2018-05-15	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2018-05-15	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2018-05-15	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2018-05-15	<0.15	ug/L	0
ALACHLOR	2018-05-15	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2018-05-15	<0.01	ug/L	0
AZINPHOS-METHYL	2018-05-15	<0.05	ug/L	0
BENZO[A]PYRENE	2018-05-15	<0.004	ug/L	0
BROMOXYNIL	2018-05-15	<0.33	ug/L	0
CARBARYL	2018-05-15	<0.05	ug/L	0
CARBOFURAN	2018-05-15	<0.01	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CHLORPYRIFOS	2018-05-15	<0.02	ug/L	0
DIAZINON	2018-05-15	<0.02	ug/L	0
DICAMBA	2018-05-15	<0.20	ug/L	0
DICLOFOP-METHYL	2018-05-15	<0.40	ug/L	0
DIMETHOATE	2018-05-15	<0.03	ug/L	0
DIQUAT	2018-05-15	<1	ug/L	0
DIURON	2018-05-15	<0.03	ug/L	0
GLYPHOSATE	2018-05-15	<1	ug/L	0
MALATHION	2018-05-15	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2018-05-15	<0.00012	mg/L	0
METOLACHLOR	2018-05-15	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2018-05-15	<0.02	ug/L	0
PARAQUAT	2018-05-15	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2018-05-15	<0.05	ug/L	0
PENTACHLOROPHENOL	2018-05-15	<0.15	ug/L	0
PHORATE	2018-05-15	<0.01	ug/L	0
PICLORAM	2018-05-15	<1	ug/L	0
PROMETRYNE	2018-05-15	<0.03	ug/L	0
SIMAZINE	2018-05-15	<0.01	ug/L	0
TERBUFOS	2018-05-15	<0.01	ug/L	0
TRIALATE	2018-05-15	<0.01	ug/L	0
TRIFLURALIN	2018-05-15	<0.02	ug/L	0

FREELTON WELL FDF03 - TREATED

1,1-DICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
1,4-DICHLOROETHANE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
BENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CARBON TETRACHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
CHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DICHLOROMETHANE	2018-05-15 to 2018-10-16	<0.5	ug/L	0
ETHYLBENZENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TETRACHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TOLUENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
TRICHLOROETHYLENE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
VINYL CHLORIDE	2018-05-15 to 2018-10-16	<0.2	ug/L	0
XYLENE	2018-05-15 to 2018-10-16	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2018-05-15	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2018-05-15	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2018-05-15	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2018-05-15	<0.15	ug/L	0
ALACHLOR	2018-05-15	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2018-05-15	<0.01	ug/L	0
AZINPHOS-METHYL	2018-05-15	<0.05	ug/L	0
BENZO[A]PYRENE	2018-05-15	<0.004	ug/L	0
BROMOXYNIL	2018-05-15	<0.33	ug/L	0
CARBARYL	2018-05-15	<0.05	ug/L	0
CARBOFURAN	2018-05-15	<0.01	ug/L	0
CHLORPYRIFOS	2018-05-15	<0.02	ug/L	0
DIAZINON	2018-05-15	<0.02	ug/L	0
DICAMBA	2018-05-15	<0.20	ug/L	0
DICLOFOP-METHYL	2018-05-15	<0.40	ug/L	0
DIMETHOATE	2018-05-15	<0.03	ug/L	0
DIQUAT	2018-05-15	<1	ug/L	0
DIURON	2018-05-15	<0.03	ug/L	0
GLYPHOSATE	2018-05-15	<1	ug/L	0
MALATHION	2018-05-15	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2018-05-15	<0.00012	mg/L	0
METOLACHLOR	2018-05-15	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2018-05-15	<0.02	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
PARAQUAT	2018-05-15	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2018-05-15	<0.05	ug/L	0
PENTACHLOROPHENOL	2018-05-15	<0.15	ug/L	0
PHORATE	2018-05-15	<0.01	ug/L	0
PICLORAM	2018-05-15	<1	ug/L	0
PROMETRYNE	2018-05-15	<0.03	ug/L	0
SIMAZINE	2018-05-15	<0.01	ug/L	0
TERBUFOS	2018-05-15	<0.01	ug/L	0
TRIALATE	2018-05-15	<0.01	ug/L	0
TRIFLURALIN	2018-05-15	<0.02	ug/L	0

DISTRIBUTION

TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters	11.1	ug/L	0
HALOACETIC ACIDS	2018-01-22 to 2018-10-16	<5.3	ug/L	N/A

* The Maximum Acceptable Concentration for Trihalomethanes in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03).

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)

DEFINITIONS:

AWQI: Adverse Water Quality Incident
mg/L: milligrams per litre
ug/L: micrograms per litre

CFU: Colony Forming Unit
mL: millilitre

HPC: Heterotrophic Plate Count
N/A: Not Applicable



CITY OF HAMILTON
GREENSVILLE DRINKING WATER SYSTEM (DWS)
WATER QUALITY ANNUAL REPORT

2018

Ontario Regulation 170/03 Section 11

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Drinking Water System Number	Drinking Water System Name	Drinking Water System Owner	Drinking Water System Category	Period Being Reported
220004126	Greenville Drinking Water System FDG01	City of Hamilton	Small Municipal Residential	January 1, 2018 to December 31, 2018

Complete if your Category is "Large Municipal Residential" or "Small Municipal Residential"

Does your Drinking Water System serve more than 10,000 people? YES NO

Is your annual report available to the public at no charge on a website on the Internet? www.hamilton.ca/waterquality YES NO

Location where Summary Report required under Ontario Regulation 170/03 Schedule 22 will be available for inspection: 700 Woodward Administration Building, Compliance Support Group

Complete for all other Categories

Number of Designated Facilities served: N/A

Did you provide a copy of your annual report to all Designated Facilities you serve? N/A

Number of Interested Authorities you report to: N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? N/A





List all Drinking Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
None other than Greensville System	220004126



Did you provide a copy of your annual report to all Drinking Water System owners that are connected to you and to whom you provide all of its drinking water?

YES NO **NOT APPLICABLE**



Indicate how you notified system users that your annual report is available, and is free of charge:

System users are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.



GREENSVILLE DWS



The Greenville water supply system consists of one well, one well station, treatment, sampling and analysis which services a population of approximately 100 people.

Water Well:

Greenville Well FDG01 is a 150mm diameter, approximately 12-metre-deep drilled ground water well under the influence of surface water (GUDI).

Treatment:

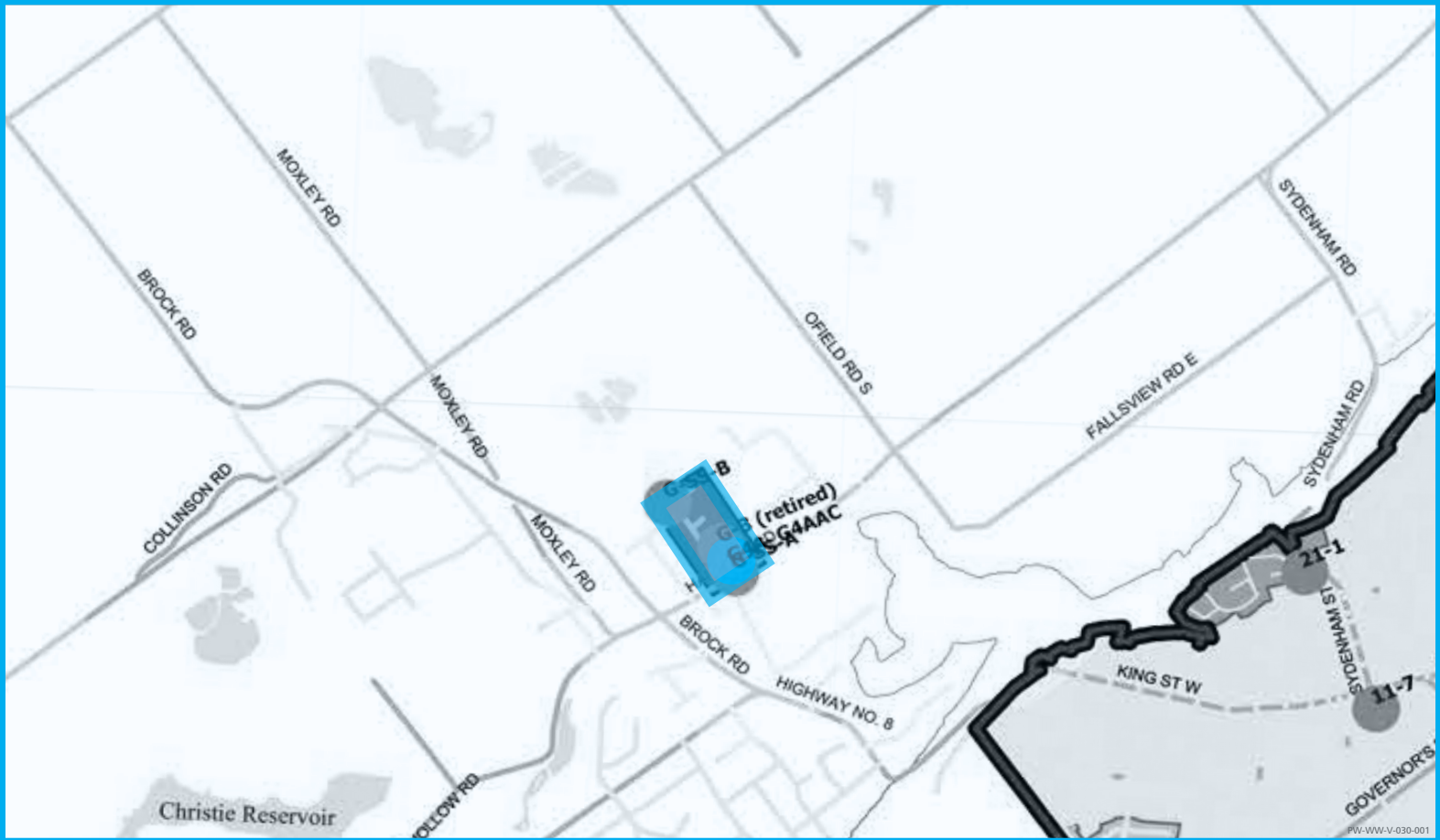
Water passes through 2 stage cartridge filters, is disinfected using UV light and sodium hypochlorite (chlorine) prior to entering the distribution system. Fluoridation is not carried out at the Greenville community well.

Well Station:

Within the Well Station, water treatment takes place, well water level, discharge pressure and flow are monitored. Hydropneumatic pressure tanks are used to control system pressures.

Sampling & Analysis:

The well is equipped with on-line chlorine residual and turbidity analyzers that continually monitor the treated water quality at the well station. A chlorine contact chamber is used to ensure disinfection of the water. Raw, treated and distribution water is sampled and analyzed weekly. In addition, chlorine residual in the distribution system is analyzed daily.

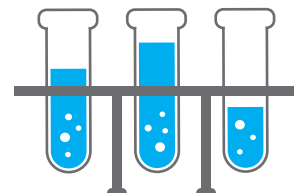


GREENSVILLE DRINKING WATER SYSTEM



List all water treatment chemicals used over this reporting period:

→ Sodium Hypochlorite



Were any significant expenses incurred to:

Install required equipment	YES	<input type="checkbox"/> NO
Repair required equipment	YES	<input type="checkbox"/> NO
Replace required equipment	<input checked="" type="checkbox"/> YES	NO

2018 GREENSVILLE DRINKING WATER SYSTEM HIGHLIGHTS

Chlorine Feed Pump Replacements and Accumulator Tank Replacements (3) \$25,000

An Environmental Assessment was initiated for a development of a new Greenville Communal Well.

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre.

Notification Date (m-d-y)	Location of Adverse	Adverse Water Quality Incident	Resolution
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We are pleased to announce that there were no Adverse Water Quality Incidents for the period of January to December 2018.



Microbiological testing done under Schedule 10, 11, 12 and 17, 18 of Regulation 170/03, during this reporting period.

SAMPLE TYPE	NUMBER OF SAMPLES	RANGE OF E.COLI RESULTS (MIN #) to (MAX #) CFU/100ML	RANGE OF TOTAL COLIFORM RESULTS (MIN #) to (MAX #) CFU/100ML	NUMBER OF HPC SAMPLES	RANGE OF HPC RESULTS (MIN #) to (MAX #) CFU/1ML
RAW	52	0 to 1	0 to 1	N/A	N/A
TREATED	52	0	0	52	0 to 2
DISTRIBUTION	104	0	0	104	0 to 2

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

NOTE: For continuous monitors use 8760 as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) to (MAX #)	UNIT OF MEASURE
TURBIDITY - TREATED	8,760	0.02 to 0.91	NTU
FREE CHLORINE - TREATED	8,760	1.66 to 2.48	mg/L
FREE CHLORINE - DISTRIBUTION	364	0.92 to 2.62	mg/L

Summary of additional testing and sampling carried out in accordance with the requirement of a licence, approval, order or other legal instrument.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-



Summary of Inorganic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
GREENSVILLE WELL TREATED				
ANTIMONY	2018-05-16 to 2018-10-17	<0.0001	mg/L	0
ARSENIC	2018-05-16 to 2018-10-17	<0.0001	mg/L	0
BARIUM	2018-05-16 to 2018-10-17	0.132 to 0.135	mg/L	0
BORON	2018-05-16 to 2018-10-17	0.031 to 0.032	mg/L	0
CADMIUM	2018-05-16 to 2018-10-17	<0.0001	mg/L	0
CHROMIUM	2018-05-16 to 2018-10-17	<0.0001 to 0.0001	mg/L	0
FLUORIDE	2018-05-16 to 2018-10-17	0.11 to 0.12	mg/L	0
MERCURY	2018-05-16 to 2018-10-17	<0.00005	mg/L	0
NITRATE AS N	2018-01-03 to 2018-12-05	5.54 to 6.39	mg/L	0
NITRITE AS N	2018-01-03 to 2018-12-05	<0.01	mg/L	0
SELENIUM	2018-05-16 to 2018-10-17	0.0002	mg/L	0
SODIUM	2018-05-16 to 2018-10-17	119	mg/L	0
URANIUM	2018-05-16 to 2018-10-17	0.593 to 0.655	ug/L	0

Summary of lead testing under Schedule 15.1 during this reporting period.

LOCATION TYPE	NO. OF POINTS SAMPLED	NO. OF SAMPLES TAKEN	RANGE OF pH RESULTS (min #) to (max #) pH Units	RANGE OF ALKALINITY RESULTS (min #) to (max #) mg/L	RANGE OF LEAD RESULTS (min #) to (max #) mg/L	NO. OF LEAD AWQIs	NO. OF POINTS OF LEAD EXCEEDANCES
PLUMBING-NR	NA	N/A	N/A	N/A	N/A	N/A	N/A
PLUMBING-R	NA	N/A	N/A	N/A	N/A	N/A	N/A
DISTRIBUTION	2	2	7.28 to 7.31	324 to 349	N/A	N/A	N/A

NR - Non Residential R - Residential

Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
GREENSVILLE WELL TREATED				
1,1-DICHLOROETHYLENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
BENZENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
CARBON TETRACHLORIDE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
CHLOROBENZENE	2018-05-16 to 2018-10-17	<0.3	ug/L	0
DICHLOROMETHANE	2018-05-16 to 2018-10-17	<0.5	ug/L	0
ETHYLBENZENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
TETRACHLOROETHYLENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
TOLUENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
TRICHLOROETHYLENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
VINYL CHLORIDE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
XYLENE	2018-05-16 to 2018-10-17	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2018-05-16	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2018-05-16	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2018-05-16	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2018-05-16	<0.15	ug/L	0
ALACHLOR	2018-05-16	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2018-05-16	<0.01	ug/L	0
AZINPHOS-METHYL	2018-05-16	<0.05	ug/L	0
BENZO[A]PYRENE	2018-05-16	<0.004	ug/L	0
BROMOXYNIL	2018-05-16	<0.33	ug/L	0
CARBARYL	2018-05-16	<0.05	ug/L	0
CARBOFURAN	2018-05-16	<0.01	ug/L	0
CHLORPYRIFOS	2018-05-16	<0.02	ug/L	0
DIAZINON	2018-05-16	<0.02	ug/L	0
DICAMBA	2018-05-16	<0.20	ug/L	0
DICLOFOP-METHYL	2018-05-16	<0.40	ug/L	0

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Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DIMETHOATE	2018-05-16	<0.03	ug/L	0
DIQUAT	2018-05-16	<1	ug/L	0
DIURON	2018-05-16	<0.03	ug/L	0
GLYPHOSATE	2018-05-16	<1	ug/L	0
MALATHION	2018-05-16	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2018-05-16	<0.00012	mg/L	0
METOLACHLOR	2018-05-16	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2018-05-16	<0.02	ug/L	0
PARAQUAT	2018-05-16	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2018-05-16	<0.05	ug/L	0
PENTACHLOROPHENOL	2018-05-16	<0.15	ug/L	0
PHORATE	2018-05-16	<0.01	ug/L	0
PICLORAM	2018-05-16	<1	ug/L	0
PROMETRYNE	2018-05-16	<0.03	ug/L	0
SIMAZINE	2018-05-16	<0.01	ug/L	0
TERBUFOS	2018-05-16	<0.01	ug/L	0
TRIALATE	2018-05-16	<0.01	ug/L	0
TRIFLURALIN	2018-05-16	<0.02	ug/L	0

DISTRIBUTION

TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	15.8	ug/L	0
HALOACETIC ACIDS	2018-01-22 to 2018-10-17	<5.3	ug/L	N/A

* The Maximum Acceptable Concentration for Trihalomethanes in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03).

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
NITRATE	2018-01-03	5.97	mg/L
NITRATE	2018-01-22	6.15	mg/L
NITRATE	2018-02-07	6.39	mg/L
NITRATE	2018-03-07	5.91	mg/L
NITRATE	2018-04-04	6.18	mg/L
NITRATE	2018-05-02	5.70	mg/L
NITRATE	2018-05-16	6.03	mg/L
NITRATE	2018-06-06	5.73	mg/L
NITRATE	2018-07-04	5.54	mg/L
NITRATE	2018-08-01	5.70	mg/L
NITRATE	2018-08-08	5.61	mg/L
NITRATE	2018-09-05	5.93	mg/L
NITRATE	2018-10-03	5.80	mg/L
NITRATE	2018-10-17	5.83	mg/L
NITRATE	2018-11-07	5.91	mg/L
NITRATE	2018-12-05	5.69	mg/L

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)

DEFINITIONS:

AWQI: Adverse Water Quality Incident
 mg/L: milligrams per litre
 ug/L: micrograms per litre

CFU: Colony Forming Unit
 mL: millilitre

HPC: Heterotrophic Plate Count
 N/A: Not Applicable



CITY OF HAMILTON
LYNDEN DRINKING WATER SYSTEM (DWS)
WATER QUALITY ANNUAL REPORT



2018

Ontario Regulation 170/03 Section 11

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Drinking Water System Number	Drinking Water System Name	Drinking Water System Owner	Drinking Water System Category	Period Being Reported
250001830	Lynden Drinking Water System FDL01	City of Hamilton	Large Municipal Residential	January 1, 2018 to December 31, 2018

Complete if your Category is "Large Municipal Residential" or "Small Municipal Residential"

Does your Drinking Water System serve more than 10,000 people? YES NO

Is your annual report available to the public at no charge on a website on the Internet? www.hamilton.ca/waterquality YES NO

Location where Summary Report required under Ontario Regulation 170/03 Schedule 22 will be available for inspection: 700 Woodward Administration Building, Compliance Support Group

Complete for all other Categories

Number of Designated Facilities served: N/A

Did you provide a copy of your annual report to all Designated Facilities you serve? N/A

Number of Interested Authorities you report to: N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? N/A





List all Drinking Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
None other than Lynden System	250001830



Did you provide a copy of your annual report to all Drinking Water System owners that are connected to you and to whom you provide all of its drinking water?

YES NO **NOT APPLICABLE**



Indicate how you notified system users that your annual report is available, and is free of charge:

System users are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.



LYNDEN DWS



The Lynden ground water supply system consists of one well, one well station, treatment, sampling and analysis which services a population of approximately 380 people.

Water Well:

Lynden Well FDL01 is a 200 mm diameter, approximately 54-meter-deep drilled ground water well.

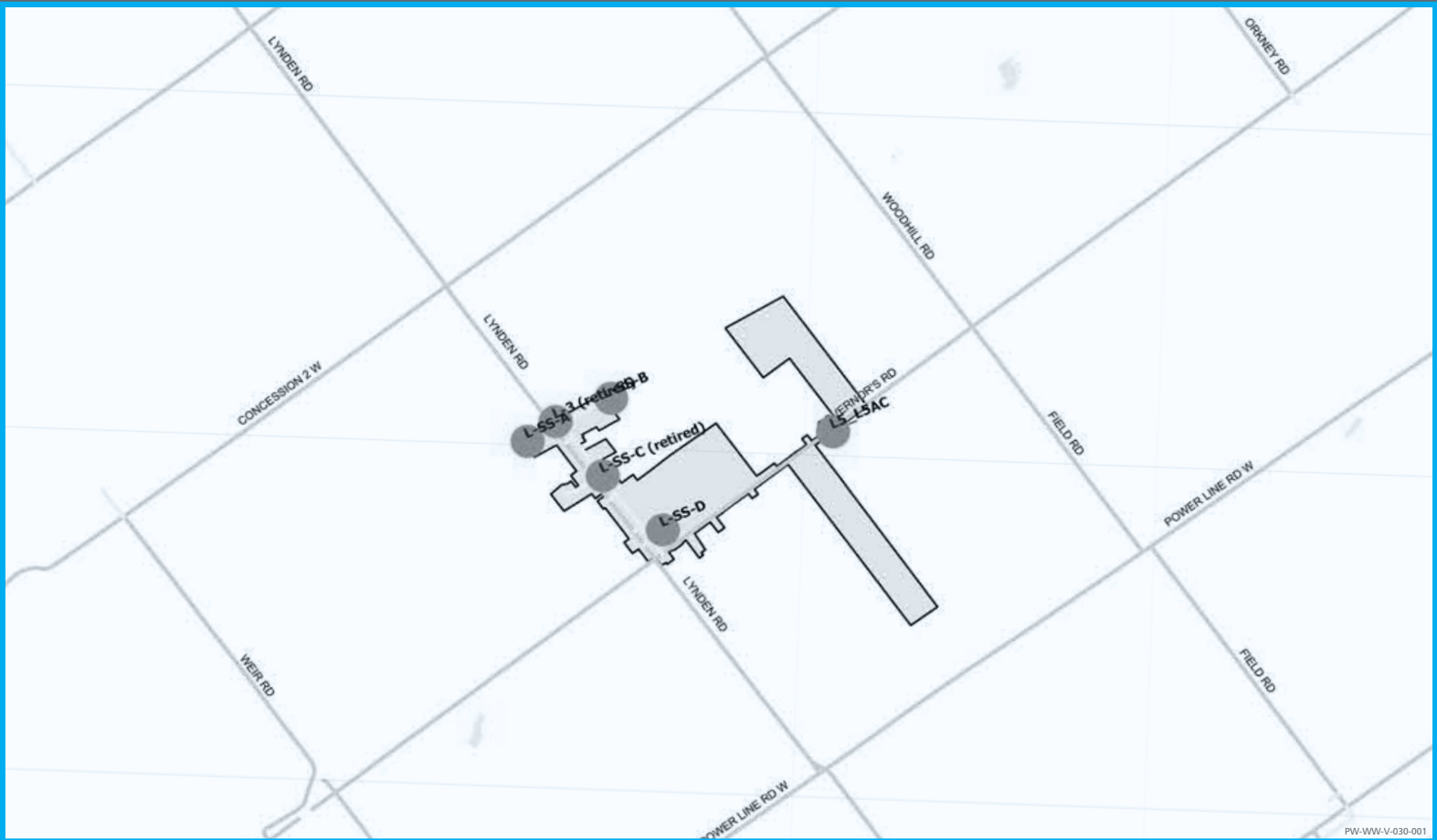
Treatment:

Water enters a dual cell reservoir in which compressed air is diffused into the first cell to reduce the levels of hydrogen sulfide in the water before chlorine (sodium hypochlorite) disinfection is carried out in the second cell. A secondary chlorine injection point is provided after primary disinfection to boost chlorine residual levels, when necessary, before the treated water goes to the distribution system.

Fluoridation is not carried out at the Lynden communal well system.

Sampling & Analysis:

Continuous chlorine residual analyzers and a turbidity analyzer are provided to monitor water quality at the well station. Raw, treated and distribution water is sampled and analyzed weekly. In addition, chlorine residual in the distribution system is analyzed daily.



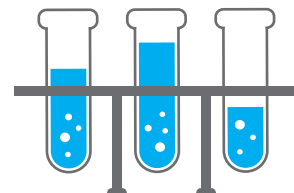
PW-WW-V-030-001

LYNDEN DRINKING WATER SYSTEM



List all water treatment chemicals used over this reporting period:

→ Sodium Hypochlorite



Were any significant expenses incurred to:

Install required equipment	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Repair required equipment	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Replace required equipment	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO

2018 LYNDEN DRINKING WATER SYSTEM HIGHLIGHTS

Lynden New Well and Treatment Building detailed design \$362,000

Chlorine Analyzer Maintenance \$17,000

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre.

Notification Date (m-d-y)	Location of Adverse	Adverse Water Quality Incident	Resolution
09-27-2018	Lynden Sampling Station D	Total Coliforms = 1 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location, one upstream and one downstream location. All results passed. The adverse was not confirmed.

Microbiological testing done under Schedule 10, 11, 12 and 17, 18 of Regulation 170/03, during this reporting period.

SAMPLE TYPE	NUMBER OF SAMPLES	RANGE OF E.COLI RESULTS (MIN #) to (MAX #) CFU/100ML	RANGE OF TOTAL COLIFORM RESULTS (MIN #) to (MAX #) CFU/100ML	NUMBER OF HPC SAMPLES	RANGE OF HPC RESULTS (MIN #) to (MAX #) CFU/1ML
RAW	52	0	0	N/A	N/A
TREATED	54	0	0	53	0 to 57
DISTRIBUTION	158	0	0 to 1	156	0 to 46

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

NOTE: For continuous monitors use 8760 as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) to (MAX #)	UNIT OF MEASURE
TURBIDITY - TREATED	52	0.07 to 0.33	NTU
FREE CHLORINE - TREATED	8,760	1.27 to 2.78	mg/L
FREE CHLORINE - DISTRIBUTION	365	0.43 to 2.42	mg/L

Summary of additional testing and sampling carried out in accordance with the requirement of a licence, approval, order or other legal instrument.

PARAMETER	NO. OF SAMPLES	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
LEAD - TREATED	25	2018-01-03 to 2018-12-20	<0.0010 to 0.0002	mg/L
LEAD - DISTRIBUTION	75	2018-01-03 to 2018-12-20	<0.0010 to 0.0010	mg/L



Summary of Inorganic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
LYNDEN WELL TREATED				
ANTIMONY	2018-05-16 to 2018-10-17	<0.0001	mg/L	0
ARSENIC	2018-05-16 to 2018-10-17	0.0001	mg/L	0
BARIUM	2018-01-22 to 2018-10-17	0.580 to 0.592	mg/L	0
BORON	2018-05-16 to 2018-10-17	0.428 to 0.460	mg/L	0
CADMIUM	2018-05-16 to 2018-10-17	<0.0001	mg/L	0
CHROMIUM	2018-05-16 to 2018-10-17	<0.0001	mg/L	0
FLUORIDE	2018-05-16 to 2018-10-17	0.65 to 0.68	mg/L	0
MERCURY	2018-05-16 to 2018-10-17	<0.00005	mg/L	0
NITRATE AS N	2018-01-22 to 2018-10-17	0.02 to 0.03	mg/L	0
NITRITE AS N	2018-01-22 to 2018-10-17	<0.01	mg/L	0
SELENIUM	2018-05-16 to 2018-10-17	<0.0001	mg/L	0
SODIUM	2018-05-16 to 2018-10-17	58.8 to 60.8	mg/L	0
URANIUM	2018-05-16 to 2018-10-17	<0.002 to 0.003	ug/L	0

Summary of lead testing under Schedule 15.1 during this reporting period.

LOCATION TYPE	NO. OF POINTS SAMPLED	NO. OF SAMPLES TAKEN	RANGE OF pH RESULTS (min #) to (max #) pH Units	RANGE OF ALKALINITY RESULTS (min #) to (max #) mg/L	RANGE OF LEAD RESULTS (min #) to (max #) mg/L	NO. OF LEAD AWQIs	NO. OF POINTS OF LEAD EXCEEDANCES
PLUMBING-NR	2	2	8.88	N/A	<0.0010	0	0
PLUMBING-R	10	10	8.76 to 8.90	N/A	<0.0010	0	0
DISTRIBUTION	2	2	8.76 to 8.92	95 to 96	<0.0010	0	0

NR - Non Residential R - Residential

Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
LYNDEN WELL TREATED				
1,1-DICHLOROETHYLENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
1,2-DICHLOROETHANE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
BENZENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
CARBON TETRACHLORIDE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
CHLOROBENZENE	2018-05-16 to 2018-10-17	<0.3	ug/L	0
DICHLOROMETHANE	2018-10-17	<0.5	ug/L	0
ETHYLBENZENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
TETRACHLOROETHYLENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
TOLUENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
TRICHLOROETHYLENE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
VINYL CHLORIDE	2018-05-16 to 2018-10-17	<0.2	ug/L	0
XYLENE	2018-05-16 to 2018-10-17	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2018-05-16	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2018-05-16	<0.25	ug/L	0
2,4-D	2018-05-16	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2018-05-16	<0.15	ug/L	0
ALACHLOR	2018-05-16	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2018-05-16	<0.01	ug/L	0
AZINPHOS-METHYL	2018-05-16	<0.05	ug/L	0
BENZO[A]PYRENE	2018-05-16	<0.004	ug/L	0
BROMOXYNIL	2018-05-16	<0.33	ug/L	0
CARBARYL	2018-05-16	<0.05	ug/L	0
CARBOFURAN	2018-05-16	<0.01	ug/L	0
CHLORPYRIFOS (DURSBAN)	2018-05-16	<0.02	ug/L	0
DIAZINON	2018-05-16	<0.02	ug/L	0
DICAMBA	2018-05-16	<0.20	ug/L	0
DICLOFOP-METHYL	2018-05-16	<0.40	ug/L	0

...continued on next page

Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DIMETHOATE	2018-05-16	<0.03	ug/L	0
DIQUAT	2018-05-16	<1	ug/L	0
DIURON	2018-05-16	<0.03	ug/L	0
GLYPHOSATE	2018-05-16	<1	ug/L	0
MALATHION	2018-05-16	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2018-05-16	<0.00012	mg/L	0
METOLACHLOR	2018-05-16	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2018-05-16	<0.02	ug/L	0
PARAQUAT	2018-05-16	<1	ug/L	0
PCBSTOTAL	2018-05-16	<0.05	ug/L	0
PENTACHLOROPHENOL	2018-05-16	<0.15	ug/L	0
PHORATE	2018-05-16	<0.01	ug/L	0
PICLORAM	2018-05-16	<1	ug/L	0
PROMETRYNE	2018-05-16	<0.03	ug/L	0
SIMAZINE	2018-05-16	<0.01	ug/L	0
TERBUFOS	2018-05-16	<0.01	ug/L	0
TRIALATE	2018-05-16	<0.01	ug/L	0
TRIFLURALIN	2018-05-16	<0.02	ug/L	0

DISTRIBUTION

TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	69.5	ug/L	0
HALOACETIC ACIDS	2018-01-22 to 2018-10-17	<5.3 to 7.3	ug/L	N/A

* The Maximum Acceptable Concentration for Trihalomethanes in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03).

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
TOTAL TRIHALOMETHANES	2018-05-16	58	ug/L
TOTAL TRIHALOMETHANES	2018-08-01	108	ug/L
TOTAL TRIHALOMETHANES	2018-10-17	72	ug/L
BARIUM	2018-01-22	0.580	mg/L
BARIUM	2018-10-17	0.586	mg/L
BARIUM	2018-05-16	0.588	mg/L
BARIUM	2018-08-01	0.592	mg/L

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)

DEFINITIONS:

AWQI: Adverse Water Quality Incident
 mg/L: milligrams per litre
 ug/L: micrograms per litre

CFU: Colony Forming Unit
 mL: millilitre

HPC: Heterotrophic Plate Count
 N/A: Not Applicable





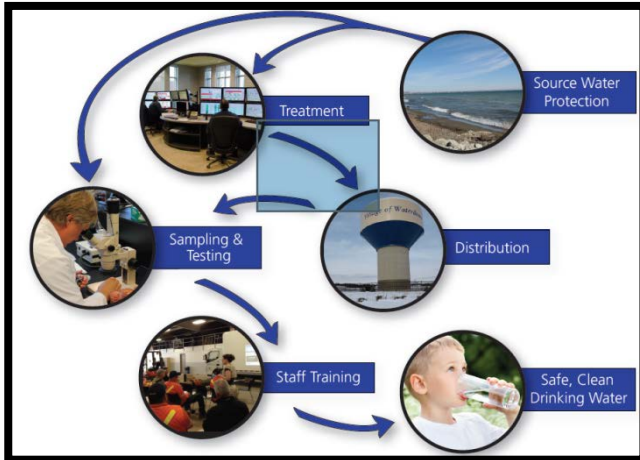
Hamilton

2018 WATER QUALITY REPORT

March 18, 2019

Presented by: Cari Vanderperk,
Manager Compliance & Regulations

2018 Annual Drinking Water Report



Regulatory Requirements

2018 Report Highlights

2018 Opportunities & Challenges

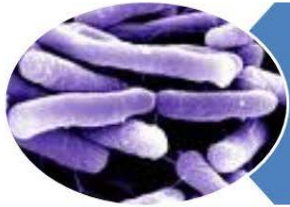


REGULATORY REQUIREMENTS



Incident:

- E. coli contamination – May 2000
- Agricultural (farm) runoff into adjacent well



Health Impacts:

- 7 deaths related to E. coli contamination
- 2,500 reported illnesses (over 40% of population)

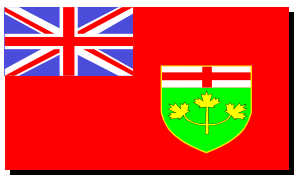


Failures:

- Improper operating practices
- Falsified records
- *Management was unaware*

Justice O'Connor's 121 Inquiry recommendations focus on:

- Drinking water protection from source to tap
- Multi-barrier approach
- Drinking water standards
- Monitoring & testing
- Provincial, Owner and Operator roles
- Quality Management System
- Dedicated enforcement
- Competency of operators and staff



REGULATORY REQUIREMENTS

- Accessibility for Ontarians with Disabilities Act
- Building Code
- Clean Water Act
- Dangerous Goods Transportation Act
- Emergency Management and Civil Protection Act
- Endangered Species Act
- Environmental Assessment Act
- Environmental Bill of Rights
- Environmental Protection Act
- Fire Protection & Prevention Act
- Freedom of Information and Protection of Privacy Act
- Freedom of Information and Protection of Privacy Act
- Green Energy Act
- Highway Traffic Act
- Human Rights Code
- Nutrient Management Act
- Occupational Health and Safety Act
- Ontario Water Resources Act
- Pesticides Act
- Safe Drinking Water Act
- Technical Standards and Safety Act
- Toxics Reduction Act
- Workplace Safety and Insurance Act

Owner:

- Municipally operated systems
 - Mayor and Council
- Shall exercise the level of care, diligence and skill in respect of a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation; and



Operating Authority:

- Staff within the HW Division responsible for the operation, maintenance and provision of support services to the City's DWSs

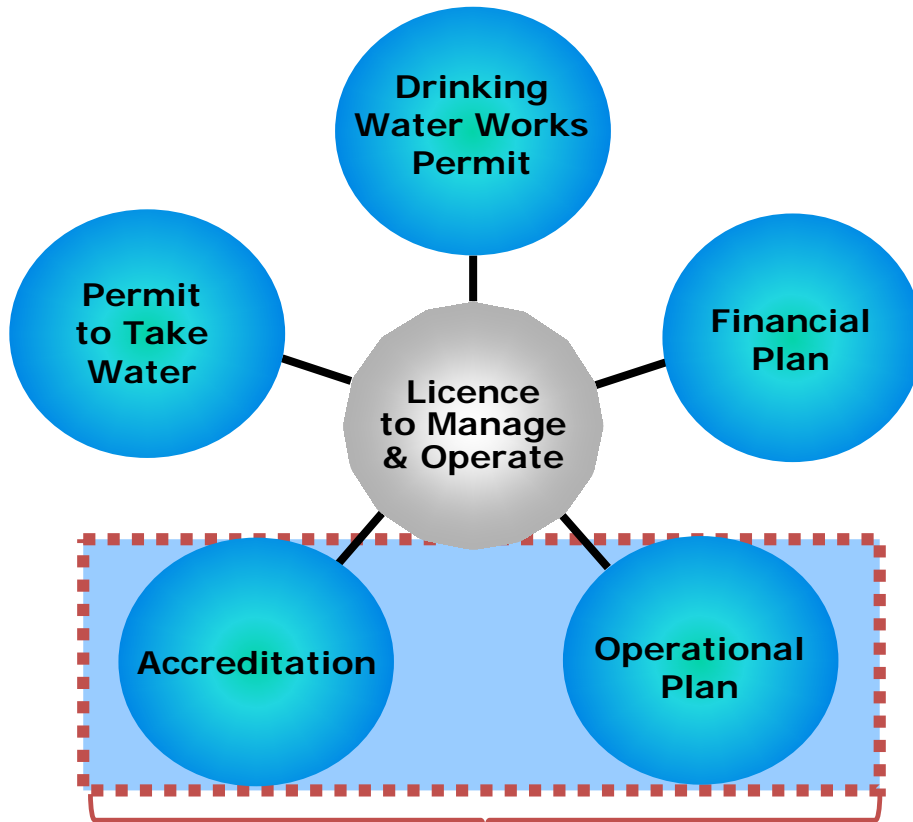
Top Management:

- GM Public Works & Director Hamilton Water

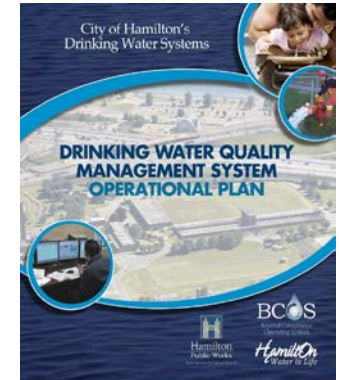
Systems Management Representative (SMR)

- Regulatory required position to represent the Owner
- Ensures compliance and administers DWQMS

REGULATORY REQUIREMENTS

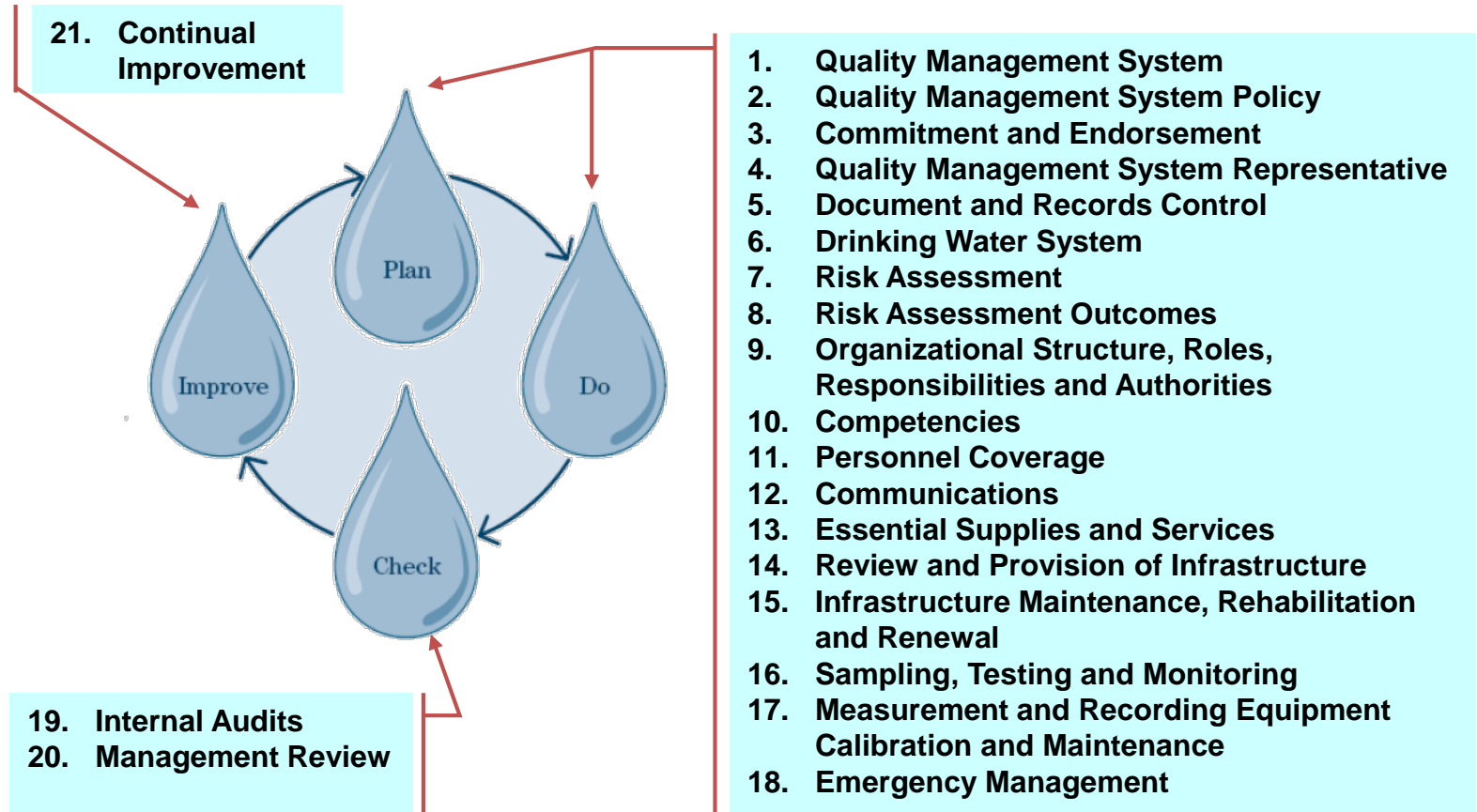


Drinking Water Quality Management Standard (DWQMS)



REGULATORY REQUIREMENTS

DWQMS Standard Elements



There are 21 Elements that form the basis of the DWQMS

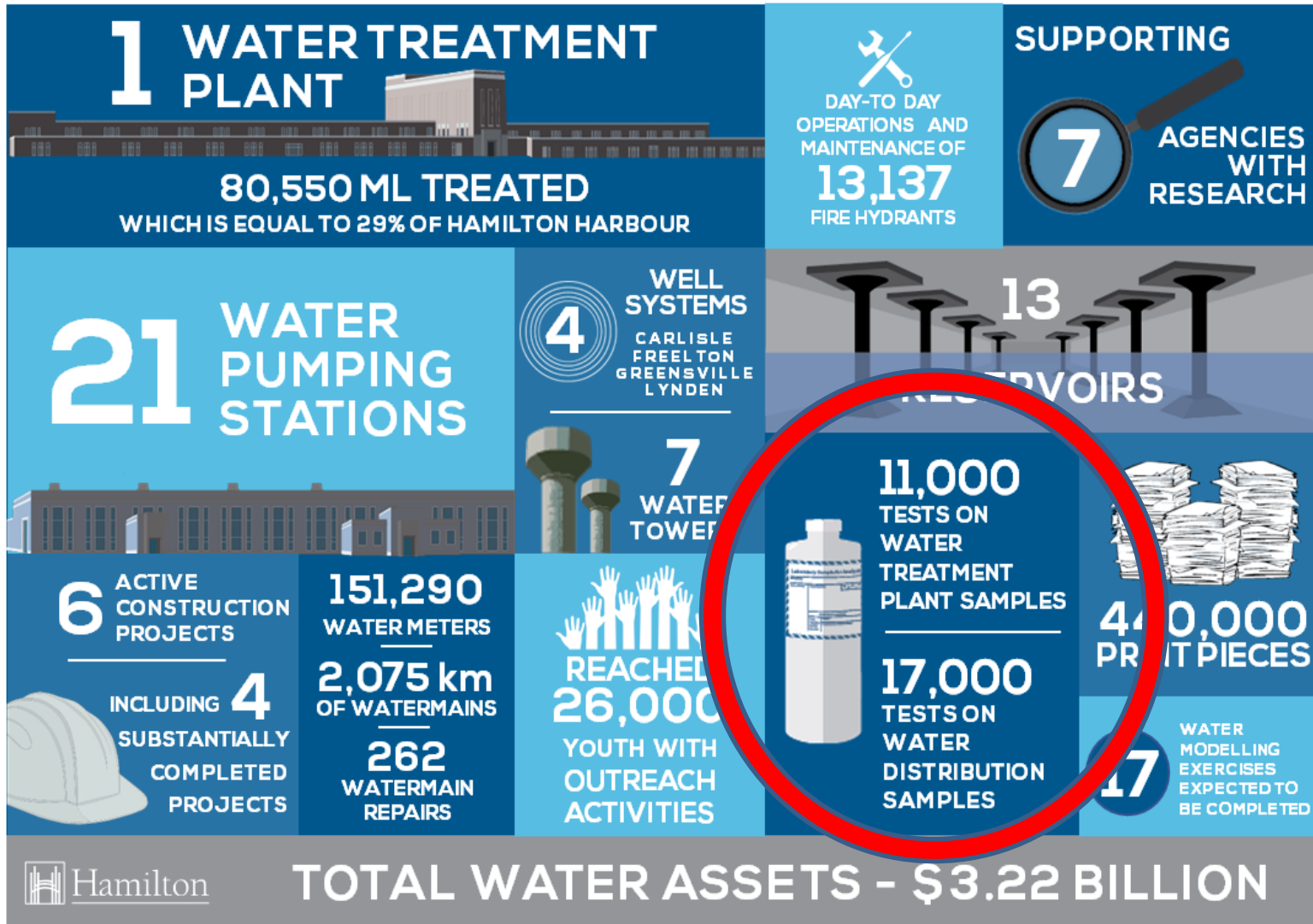
Hamilton Water's Integrated Management System



REGULATORY REQUIREMENTS



REGULATORY REQUIREMENTS

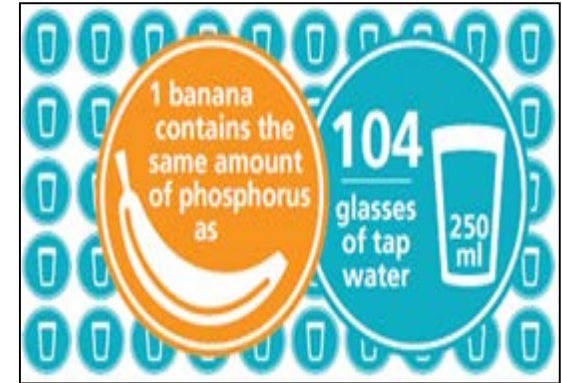


2018 REPORT HIGHLIGHTS

DWS	Adverse Water Quality Incidents (AWQIs)		Findings		MECP Inspection Rating	
	Not Confirmed	Confirmed	Self-Declared Non-Compliance	MECP Inspection Non-Compliance	2017	2018
Freelton	0	0	2	0	100%	96.74%
Greenville	0	0	1	0	100%	99.36%
Lynden	1	0	1	0	100%	100%
Woodward	5	2	0	1	Not conducted in 2017	96.32%
Fifty Road	1	0	0	0	100%	100%
Carlisle	0	0	2	1	100%	94.40%

Corrosion Control Program – Woodward DWS

- System wide approach to control lead at the tap
- Extensive outreach and education activities
- Orthophosphate addition started in November 2018
- Post implementation monitoring and reporting ongoing
- Minimal amount of inquiries/complaints from public to-date



Lynden Well Upgrades

- Improved water quality and storage capabilities
- Construction to commence in Spring 2019
- Project completion Q2 2020
- Project is supported by the Clean Water and Wastewater Fund (CWWF)



Risk Assessment

- Conducted every 3 years and reviewed annually
- In 2018 no significant risks were identified that are not already identified in an existing Hamilton Water initiative or project



Infrastructure Review

- Conducted annually
- The 2018 Review found:
 - Our maintenance program is largely reactive and resources are required to implement a more robust preventative maintenance program
 - Life-cycle reinvestment funds are being spent on emergency or short-term work



Financial Plan (Water Infrastructure)

Safe Drinking Water Act - O. Reg. 453/07 Requirements:

- Must address a min 6 year time-frame (ours covers 10 years)
- Must be approved by Council prior to provincial submission
- Must be made freely available to the general public
- Hamilton's latest Financial Plan was approved by Council on July 12, 2018, and submitted to the Province.



Top Management Review

DWQMS Standard Requires a Top Management Review be conducted annually:

- Reviewed suitability, adequacy and effectiveness of our DWQMS
- Attendees included the GM, Public Works; HW Directors; Section Managers; Overall Responsible Operators and Compliance Support Staff



2018 OPPORTUNITIES & CHALLENGES



Regulatory Challenges

- Implementation of a Quality Management System for wastewater will be resource consuming
- Watermain Disinfection Procedure – increased costs
- Health Canada contemplating decreasing of Max Acceptable Limit for Lead from 10ppb to 5ppb.
- Asset Management Plan Regulations
- Operator certification

Built Environment & Infrastructure

- Building an effective preventative maintenance program

Clean & Green

- Climate Change – algae blooms, severe weather, frozen services, watermain breaks



THANK YOU



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Hamilton Water Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	March 18, 2019
SUBJECT/REPORT NO:	Proposed Amendments to City of Hamilton By-law No. 10-103 Respecting the Prevention of Backflow into the Water Distribution System of the City of Hamilton (PW19023) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Shane McCauley (905) 546 2424, Extension 1020
SUBMITTED BY:	Nick Winters Director, Water & Wastewater Operations Public Works
SIGNATURE:	

RECOMMENDATION

That a By-law to amend the City of Hamilton Backflow Prevention By-law No. 10-103, substantially in the form attached as Appendix B to Report PW19023, and as satisfactory to the City Solicitor, be enacted.

EXECUTIVE SUMMARY

The purpose of this report is to provide City Council with recommended amendments to the City of Hamilton By-law No. 10-103 Respecting the Prevention of Backflow into the Water Distribution System of the City of Hamilton (the "Backflow Prevention By-law"), an overview of the current state of the Backflow Prevention Program as well as an update on program initiatives. A full review of applicable legislation and standards was completed and a list of recommended amendments to the By-law has been assembled for Council consideration.

Alternatives for Consideration - See Page 9

FINANCIAL - STAFFING - LEGAL IMPLICATIONS

Financial: There are no financial impacts associated with the proposed recommendations.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

**SUBJECT: Proposed Amendments to City of Hamilton By-law No. 10-103
Respecting the Prevention of Backflow into the Water Distribution
System of the City of Hamilton (PW19023) (City Wide) - Page 2 of 9**

Staffing: No additional staffing is required as a result of the recommendations of Report PW19023.

Legal: The proposed amendments to subsections 3.5.3 and 9.1.6 of the Backflow Prevention By-law seek to align the requirements of the By-law with the requirements of the Building Code Act, 1992, and the Building Code O.Reg. 332/12.

HISTORICAL BACKGROUND

The Backflow Prevention By-law was approved and passed by City Council on May 12, 2010. The main purpose of this By-law is to prevent the flow of water, other liquids, chemicals or substances from Industrial, Commercial, Institutional and Multi-residential properties back into the drinking water system for which the City of Hamilton is responsible.

City of Hamilton (City) staff within the Customer Service and Community Outreach (CS&CO) Section of Hamilton Water worked diligently to create the Backflow Prevention Program which supports the requirements set in City's Backflow Prevention By-law. This Program includes a webpage dedicated to providing property owners with information on the By-law and their obligations under the By-law with links to electronic survey and device test report forms. Our proactive outreach program provides property owners with access to City Staff (Backflow Prevention Officers) to assist them with meeting compliance requirements. The Program also includes outreach material and reminder letters designed to educate and assist property owners in meeting program requirements.

CURRENT STATE OF THE PROGRAM

Since the inception of the Backflow By-law in May 2010, Hamilton Water has continued to manage and administer the City of Hamilton's Backflow Prevention Program which focuses on isolating private water systems from the City's water distribution system by requiring the appropriate backflow prevention device to be installed near the water meter (within 3 metres).

This program requires all Institutional, Commercial, and Industrial (ICI) and Multi-Unit Residential four stories or higher property owners to submit a survey to the City identifying all service connections and the hazard level of the property. Survey responses are evaluated against the requirements of the By-law to determine whether a Backflow Prevention Device is required.

A summary of the current state of this program is outlined in Appendix A to Report PW19023. In total, properties currently have a survey compliance rate of 79.5% and a device installation compliance rate of 60%.

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**SUBJECT: Proposed Amendments to City of Hamilton By-law No. 10-103
Respecting the Prevention of Backflow into the Water Distribution
System of the City of Hamilton (PW19023) (City Wide) - Page 3 of 9**

For device installations, the data is only representative of surveys received. Required device installation numbers fluctuate based on survey results and property hazard level. Given the amount of service connections in the City of Hamilton, the complexity of the By-law and the current resources allocated to the enforcement of this By-law, the scale of work outstanding continues to increase. The Continuous Improvement section of this report provides information on efforts that have and continue to be undertaken to increase program efficiency by leveraging online tools.

The City continues to work towards achieving full compliance with the By-law for City owned facilities and the current plan is to have all high hazards related to all City owned properties compliant with the Backflow Prevention By-law by the end of 2019; and all other hazards compliant by the end of 2020.

Often for larger properties, the biggest constraint with achieving compliance is budget availability. In response to this, City Staff have worked with property owners to come up with ways to find the most cost-effective solutions to achieve compliance. Many successes have been achieved due to this collaborative approach. For example, Arcelor Mittal Dofasco has worked with Hamilton Water staff since the beginning of this Program and as of 2018 is in full compliance. This is no small undertaking given the considerable amount of time and resources needed for this large organization. Furthermore, McMaster University and Hamilton Health Sciences are also in full compliance with the By-law. These are only a few examples of the strong working partnerships that Hamilton Water Staff and ICI customers have established to protect our water distribution system.

CONTINUOUS IMPROVEMENT

The CS&CO Section is currently working on two continuous improvement initiatives for this program. The first project (consisting of two phases) is to provide “on-line” options for completing self-assessed surveys (Surveys) and submitting test reports.

Phase 1 was completed in July 2018 allowing customers to submit their Surveys electronically. Customers no longer have to mail or deliver their surveys to 330 Wentworth Street North but can complete them conveniently online. Between July 2018 and February 2019, 55 surveys were completed, and 24 were for properties that had not previously reported.

Phase 2 will allow customers to submit test reports electronically and is scheduled to be completed in October 2019. Property owners are required to submit annual test reports for each device. An administration fee of \$72.61 is included in the user fees for processing these test reports. Staff are currently required to review each report, identify any missing or incorrect information and follow up with the customer and their contractor. This process takes considerable time and resources. By creating an online process, the

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**SUBJECT: Proposed Amendments to City of Hamilton By-law No. 10-103
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system will be able to automatically identify any missing information and require it to be entered before submitting the test report. This will significantly reduce the effort required to review the test reports; thus, freeing staff up to address other aspects of the program. It will also allow test reports to be submitted anytime, not just during regular business hours. In addition to being more convenient we should be able to eliminate or reduce the administration fee for those submitting their test reports electronically.

The second continuous improvement initiative is a project related to providing customers with a pre-approved contractor list to assist with meeting the By-law requirements. This project is in the early stages with expected completion in Q3 or Q4 of 2019. Currently all contractors who perform work related to this by-law are required to be licensed and registered with the City. This requirement ensures that contractors possess the necessary licenses to do the work, however, does not address workmanship or value.

Staff intend to compile and maintain a list of up to five contractors that it has prequalified to perform work on behalf of property owners within the City of Hamilton. The intent of this prequalified list of contractors is to provide value added service to business owners by offering an easier and more cost-effective way for these owners to comply with the By-law requirements. This list will be created through the City's competitive bid process. Property owners will be able to take advantage of this list knowing that the prequalified contractors have gone through a competitive process and are being monitored by the City for quality of workmanship. Using this list will be optional for the customer and it will be the property owner who hires the contractor (similar to the Protective Plumbing Program). The City will have the right to remove contractors from the list based on poor performance which will be done with the assistance of the City of Hamilton Procurement Section.

Through these continuous improvement initiatives and by leveraging technology, we continue to find ways to optimize the resources that we have while providing improved customer service and options for our customers.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The proposed amendments to subsections 3.5.3 and 9.1.6 of the Backflow Prevention By-law seek to align the requirements of the By-law with the requirements of the Building Code Act, 1992, and the Building Code O.Reg. 332/12.

RELEVANT CONSULTATION

In developing this report, the following consultation was undertaken.

The City Solicitor was consulted regarding the recommended amendments to the Backflow Prevention By-law and provided advice and direction in the preparation of this report;

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The City of Hamilton Procurement Manager was consulted and provided with a copy of this report. Procurement staff provided their approval and input on the continuous improvement project related to the list of pre-qualified contractors.

An information mail out was sent to all Industrial, Commercial, Institutional and Multi-Unit Residential four stories or higher property owners and all current approved Backflow contractors on January 8, 2019. The intent of this information mail out was to inform these customers of the upcoming Public Information Session and to provide them with details of the recommended By-law changes.

A Public Information Session was held on January 29, 2019 to inform customers of the recommended changes to the By-law and to let them know how these changes could impact them. This session was organized in a format to give our customers the opportunity to ask questions and voice any suggestions and concerns with the recommended changes. The session was successful with approximately 30 customers in attendance. The suggestions received have been reviewed and considered in the creation of the recommendations and this report.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Urban Environmental Management Inc. (UEM) was retained by Hamilton Water to conduct a review of the City of Hamilton's Backflow Prevention Program, the Backflow Prevention By-Law, which included a review of applicable Legislation/Guidance Documents (CSA B64.10-11 Standard, Ontario Building Code Regulation 332/12, the Municipal Act, 2001, the EPA Cross Connection Control Manual, the AWWA Canadian Cross Connection Control Manual, the MOECC Guide for Drinking Water System Owners Seeking to undertake a Backflow Prevention Program), and the programs in other municipalities. This review was undertaken primarily because of changes to the Ontario Building Code since City of Hamilton By-law No. 10-103 was approved in May 2010.

The recommended By-law amendments seek to ensure that the City Program aligns with the Building Code changes and provide improvements to increase property owner's compliance with the By-law while continuing to protect the City's water distribution system.

The rationale for each recommended amendment is outlined below:

- (1) That section 1 definition of "Building Code" is amended by replacing the words "O. Reg. 350/06" with "O. Reg. 332/12".

O. Reg. 350/06 currently referred to in the Backflow Prevention By-law was repealed and replaced with O. Reg. 332/12 on January 1, 2014.

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- (2) That the definition “MOE” be removed from By-law No. 10-103.

This change is recommended as the acronym “MOE” is not used within the body of the Backflow Prevention By-law.

- (3) That the term “Self-Assessed Cross Connection Survey Form” be changed to “Self-Assessed Survey” throughout City of Hamilton By-law No. 10-103 (6 instances).

This change is recommended to provide a better distinction between both types of surveys referenced in the By-law, making it easier for property owners and contractors to distinguish.

This is based on feedback from Customers. There have been instances where customers have submitted the wrong type of survey because of confusion around terminology.

- (4) That Section 3.4 of City of Hamilton By-law No. 10-103 be amended to read as:

Where there is a Fire Protection System within a Building or Structure, the Owner of the Property shall ensure that such Building or Structure is protected against Backflow in accordance with the CSA Standard, and in doing so the Backflow Prevention Device shall be either a double check valve assembly or a reduced pressure principle device.

This recommendation eliminates the requirement for a detector check assembly (a meter that would measure consumption should water be used) from Fire Protection Systems. The recommendation is being made because:

- Detector check assemblies do not provide any additional protection to the City’s water distribution system from a Backflow event;
- Detector check assemblies are not a requirement of the CSA Standard, the Ontario Building Code or the National Fire Protection Association;
- Costs associated with the installation of a detector check assembly for properties with a Fire Protection System impose an unnecessary financial burden to the property owner, negatively affecting compliance (cost for retro fit approx. \$1,500);
- The detector check assembly meter is currently not billable and is not City owned (consumption, if any, is not being read);
- The City of Hamilton is the only known municipality that currently has this requirement in their By-law; and

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- The inclusion of this requirement was discretionary at the time the By-law was passed (to deter use of fire systems for domestic use). Staff have since been able to determine that the risk of theft from these fire systems is minimal.
- (5) That Section 3.5.3 of City of Hamilton By-law No. 10-103 be amended to read as:
- The degree of hazard on the Property is not a High or Severe and the Property is not one which requires Premise Isolation under the Building Code.
- This change is recommended due to changes in the Ontario Building Code that came into force on January 1, 2014 which require the installation of a moderate hazard device on all new Industrial, Commercial, and Institutional Properties regardless of water service pipe size.
- This amendment would require all properties that have existing backflow prevention devices on water service pipes sized less than 50mm, regardless of hazard level, to submit annual test reports to the City.
- (6) That Section 6.3 of City of Hamilton By-law No. 10-103 be amended to read as follows:
- The General Manager is authorized to delegate the responsibility for the administration of this By-law to any employee or agent of the Hamilton Water Division of the Public Works Department of the City;
- Due to corporate reorganization, tasks previously handled by the Environment and Sustainable Infrastructure Division of the Public Works Department in connection to this By-law are now undertaken by the Hamilton Water Division of the Public Works Department.
- (7) That a new Section 6.26 be added and state the following:
- Every person who contravenes any provision of this By-law shall be deemed to be committing a continuing offence for each day or part of a day that the contravention remains uncorrected.
- This additional section is recommended in order to clarify any ambiguities as to whether the offence creating provisions under the Backflow Prevention By-law create single or continuing offences.
- (8) That Subsection 9.1 of City of Hamilton By-law No. 10-103 be amended to add subsections 9.1.6.1 and 9.1.6.2 to read as:

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9.1.6.1 Despite subsection 9.1.6, for all hazards other than a High or Severe Hazard, a Property Owner may apply to the to have such device installed where the water service enters the Building or Structure, and the General Manager may approve the installation of the device in a location acceptable to the General Manager, provided the following conditions are met:

- (a) A property inspection by the General Manager, which includes a water shut off, confirms no Cross Connection between the property line and premise Backflow Prevention Device;
- (b) The Owner pays all fees and charges associated with the application, inspection and water shut off; and
- (c) The Owner signs an agreement with terms and conditions acceptable to the General Manager on an annual basis.

9.1.6.2 In the event of failure or refusal to comply with any of the conditions set out in subsection 9.1.6.1 or the terms and conditions in the agreement signed pursuant to section 9.1.6.1(c), the Owner shall comply with requirements set out in section 9.1.6.

Originally, the need for all Backflow devices to be installed no more than 3 meters downstream of the meter was to eliminate the likelihood of a cross connection between the water meter and the backflow device.

- By limiting this requirement only to high or severe properties, unnecessary financial burdens will be eliminated to all other hazard properties. It is hoped that this change will improve compliance with the By-law without adding additional risk to the water distribution system.
- The City of Hamilton's requirement for premise isolation is currently more stringent than both the CSA Standard and the Ontario Building Code. Since Hamilton has a significant number of properties that have extensive private water networks before entering a building, the by-law requires that the backflow prevention device be installed just downstream (within 3 meters) of the water meter for premise isolation. Staff feel this requirement remains justified for high or severe hazard properties; however, with a thorough investigation, other properties could benefit from this change.
- The current by-law allows for the General Manager of Public Works or designate to permit exceptions to provisions of this By-law provided that such exceptions do not create an unreasonable risk of backflow. Staff have allowed 39 exceptions to the bylaw related to the distance between the meter and moderate backflow

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device. For each exception a thorough investigation was completed to ensure that no other connections existed.

- (9) That Schedule A of City of Hamilton By-law No. 10-103 (Authorized Functions List) is amended to add the following statement “all test kits used for testing Backflow Prevention Devices require valid calibration certificate to be submitted to the City of Hamilton annually.”

This is a current requirement of the program that is not specified in the Backflow Prevention By-law. The annual calibration of the testing equipment is a requirement under the CSA Standard.

ALTERNATIVES FOR CONSIDERATION

Alternatives may include approval of some or none of the recommendations provided in this report which is not recommended, as the amendments support the City’s efforts to work with property owners to meet their obligations under the Backflow Prevention By-law and continue to protect our water distribution system.

ALIGNMENT TO THE 2016 - 2025 STRATEGIC PLAN

Built Environment and Infrastructure

Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Our People & Performance

Hamiltonians have a high level of trust and confidence in their City Government.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” - City Wide (private and City owned properties) Compliance for Surveys and Device Installations

Appendix “B” - Draft By-law to Amend the By-law Respecting the Prevention of Backflow into the Water Distribution System of the City of Hamilton

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APPENDIX "A"
REPORT PW19023

City Wide (private and City owned properties) Compliance for Surveys and Device
Installations as of February 8, 2019

Cross Connection Surveys

Total # of properties requiring Surveys	Total # of properties Surveyed	Total # of properties Not Surveyed	Total % of Properties Surveyed
6,930	5,384	1546	79.5 %

Device Installations

Total # of Device Installations Required*	Total # of Device Installations Completed	Total # of Device Installations Outstanding	% of Devices Installed
4042	2469	1573	60 %

*based on surveys received

Authority: Item xxx, Public Works Committee
Report 19-xxx
CM: xxx, 2019

Bill No.

CITY OF HAMILTON

BY-LAW NO. 19 -

To Amend the By-law No. 10-103 Respecting the Prevention of Backflow into the Water Distribution System of the City of Hamilton

WHEREAS on May 12, 2010, the Council of the City of Hamilton passed By-law No. 10-103, known and referred to as the "Backflow Prevention By-law";

AND WHEREAS on March XX, 2019 the Council of the City of Hamilton approved Item XXX of Public Works Committee Report 19-XXX to amend By-law No. 10-103 to remove defined terms not used in the body of the By-law, update departmental and regulatory references, remove the requirement of detector meters on Fire Protection Systems, update references to survey forms and installation requirements where Backflow Prevention Devices are installed for Premise Isolation, and clarify that offences under the By-law are continuing.

NOW THEREFORE the Council of the City of Hamilton enacts as follows:

1. Section 1 definition of "Building Code" is amended by deleting the words "O. Reg. 350/06" from the first line and replacing it with "O. Reg. 332/12".
2. Section 1 definition of "MOE" of By-law No. 10-103 is deleted.
3. Sections 1, 3.5.2, 7.3.2, 7.33, 7.5 and Schedule A of By-law No.10-103 are amended by replacing the wording "Self Assessed Cross Connection Survey Form" with "Self-Assessed Survey".
4. Subsection 3.4 of By-law No. 10-103 is deleted and replaced with the following new subsection 3.4:
 - 3.4 Where there is a Fire Protection System within a Building or Structure, the Owner of the Property shall ensure that such Building or Structure is protected against Backflow in accordance with the CSA Standard, and in doing so the Backflow Prevention Device

- shall be either a double check valve assembly or a reduced pressure principle device.
5. Subsection 3.5.3 of By-law No. 10-103 is deleted and replaced with the following new subsection 3.5.3:
 - 3.5.3. The degree of hazard on the Property is not High or Severe and the Property is not one which requires Premise Isolation under the Building Code.
 6. Subsection 6.3 of By-law No. 10-103 is amended by deleting the words "Environment & Sustainable Infrastructure Division" from the second and third line of the subsection and replacing it with "Hamilton Water Division".
 7. By-law No. 10-103 is amended by adding the following new subsection 6.26 immediately after subsection 6.25:
 - 6.26 Every person who contravenes any provision of this By-law shall be deemed to be committing a continuing offence for each day or part of a day that the contravention remains uncorrected.
 8. Subsection 9.1 of By-law No. 10-103 is amended by adding the following new subsections 9.1.6.1 and 9.1.6.2 immediately after subsection 9.1.6:
 - 9.1.6.1 Despite subsection 9.1.6, for all hazards other than a High or Severe Hazard, a Property Owner may apply to the to have such device installed where the water service enters the Building or Structure, and the General Manager may approve the installation of the device in a location acceptable to the General Manager, provided the following conditions are met:
 - (a) A property inspection by the General Manager, which includes a water shut off, confirms no Cross Connection between the property line and premise Backflow Prevention Device;
 - (b) The Owner pays all fees and charges associated with the application, inspection and water shut off; and
 - (c) The Owner signs an agreement with terms and conditions acceptable to the General Manager on an annual basis.
 - 9.1.6.2 In the event of failure or refusal to comply with any of the conditions set out in subsection 9.1.6.1 or the terms and conditions in the agreement signed pursuant to section 9.1.6.1(c), the Owner shall comply with requirements set out in section 9.1.6.

APPENDIX "B"
REPORT PW19023
Page 3 of 3

9. Schedule A of By-law No. 10-103 is amended by adding the following immediately below the text "For the purposes of Schedule A":

All test kits used for testing Backflow Prevention Devices require a valid calibration certificate to be submitted to the City of Hamilton annually.

10. This By-law comes into force as of the day it is passed.

PASSED this **XXX day of XXX**, 2019.

Fred Eisenberger
Mayor

Janet Pilon
Acting City Clerk

11.1

CITY OF HAMILTON

MOTION

Public Works Committee: March 18, 2019

MOVED BY COUNCILLOR A. VANDERBEEK.....

SECONDED BY COUNCILLOR

Speed Limit Reduction on Highland Park Drive and Lynndale Drive (Ward 13)

WHEREAS, in 2018 during construction on Governors Road residents of Highland Park Drive had many safety concerns due to increased traffic volumes and perceived speeding issues;

WHEREAS, there are areas on Highland Park Drive that do not have sidewalks and pedestrians have to walk on the roadway to access St. Bernadette Catholic Elementary School; and,

WHEREAS, Highland Park Drive and Lynndale Drive are planned to be reduced to 40km/h as part of the Bill 65 “Safer School Zones” Act;

THEREFORE, BE IT RESOLVED:

- (a) That staff be directed to implement a 40km/h speed limit on Highland Park Drive between Bridlewood Drive and Lynndale Drive;
- (b) That staff be directed to implement a 40km/h speed limit on Lynndale Drive between Highland Park Drive and Creighton Drive;
- (c) That the by-law authorizing staff to implement a 40km/h speed limit on Highland Park Drive between Bridlewood Drive and Lynndale Drive and on Lynndale Drive between Highland Park Drive and Creighton Drive, attached hereto as Appendix “A”, be passed; and,
- (d) That funding for signage for the speed limit reductions, as outlined above, be taken from the Red Light Camera Fund at an upwards costs of \$2,000.

Appendix "A"

Authority: Public Works Committee
Report:
Date:
Ward: 13

Bill No.**CITY OF HAMILTON****BY-LAW NO. 19-**

**To Amend By-law No. 01-215
 Being a By-law To Regulate Traffic**

WHEREAS sections 8, 9 and 10 of the Municipal Act, 2001, S.O. 2001, c. 25, authorize the City of Hamilton to pass by-laws as necessary or desirable for the public and municipal purposes, and in particular paragraphs 4 through 8 of subsection 10(2) authorize by-laws respecting: assets of the municipality, the economic, social and environmental well-being of the municipality; health, safety and well-being of persons; the provision of any service or thing that it considers necessary or desirable for the public; and the protection of persons and property;

AND WHEREAS on the 18th day of September, 2001, the Council of the City of Hamilton enacted By-law No. 01-215 to regulate traffic;

AND WHEREAS it is necessary to amend By-law No. 01-215.

NOW THEREFORE the Council of the City of Hamilton enacts as follows:

1. Schedule 2 (Speed Limits) of By-law No. 01-215, as amended, is hereby further amended by removing from Section "B" (Dundas) thereof the following item, namely;

Highland Park Drive	375 m west of Lynndale Drive	75 m west of Lynndale Drive	40 km/h
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And by adding to Section "B" (Dundas) thereof the following items,

Highland Park Drive	Bridlewood Drive	Lynndale Drive	40 km/h
Lynndale Drive	Highland Park Drive	Creighton Drive	40 km/h

Appendix "A"

To Amend By-law No. 01-215
Being a By-law to Regulate Traffic

Page 2 of 2

2. Subject to the amendments made in this By-law, in all other respects, By-law No. 01-215, including all Schedules thereto, as amended, is hereby confirmed unchanged.

3. This By-law shall come into force and take effect on the date of its passing and enactment.

PASSED this 27th day of March, 2019.

F. Eisenberger
Mayor

J. Pilon
Acting City Clerk

11.2

CITY OF HAMILTON

MOTION

Public Works Committee: March 18, 2019

MOVED BY COUNCILLOR J. FARR.....

SECONDED BY COUNCILLOR

Public Planning Results for 2018 Plan Local Initiative Resulting in Ward 2 Area Rating Funded Projects (Ward 2)

- (a) (Central, Durand and Stinson Neighbourhood) That \$400 for a total of 13 metal containers, at \$30 per metal container be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052;
- (b) (Central Neighbourhood 15, Corktown Neighbourhood 1, Durand Neighbourhood 7, Stinson Neighbourhood 3) That \$39,000 for public bench seating (the installation of 32 standard bench seating), be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052;
- (c) (Stinson Neighbourhood) That \$149,850 for Graffiti removal and curbing by Mural(s) Under Claremont Access to act as a “gateway”, as Wards 2 and 3 meet at the Access, be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052;
- (d) (Beasley Neighbourhood) That \$75,000 for Graffiti Removal/Prevention at Ferguson Station and a public art mural at 250 King St. E. be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052; and that the International Village BIA be authorized to facilitate these initiatives;
- (e) (Beasley Neighbourhood) That \$27,000 for Concrete Planters for the Cannon Bike Track be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052;
- (f) (Beasley and Central Neighbourhood) That funding in the amount of \$69,000 for trees be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052 (15k for Central, 54k for Beasley);
- (g) (Corktown Neighbourhood) That \$60,000 for playground equipment for Corktown Park & Shamrock park be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052;
- (h) (Central, Corktown and Durand Neighbourhood) That \$105,000 for installation of a solar lighting be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052; (Central 5, Corktown 1 and Durand 1);

- (i) (Corktown Neighbourhood) That \$75,000 for Bike path at Shamrock Park 120m long multi-use path beside the existing sidewalk so cyclists can ride from existing Ferguson bike lanes to the tunnel – to Young St., be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052;
- (j) (Durand Neighbourhood) That \$15,000 for installation of completion of the Durand heritage neighbourhood street signage be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052;
- (k) (Central Neighbourhood) That \$6000 for 15 Hanging Baskets be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052;
- (l) (North End Neighbourhood) That \$100,000 for bathroom upgrades at Eastwood Park be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052;
- (m) (North End Neighbourhood) That \$56,000 for playground equipment for Eastwood Park be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052;
- (n) (Central Neighbourhood) That \$21,000 for planters be funded from the Ward 2 Area Rating Special Capital Reinvestment Reserve No. 108052; and,
- (o) That the Mayor and City Clerk be authorized and directed to execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

11.3

CITY OF HAMILTON

MOTION

Public Works Committee: March 18, 2019

MOVED BY COUNCILLOR J. FARR.....

SECONDED BY COUNCILLOR

Conversion of Queen St. S. to Two-Way Traffic Between King St. W. and Main St. W. (Wards 1 and 2)

WHEREAS, Queen Street South is approved for two-way conversion between Aberdeen Avenue and Main Street West in the summer of 2019;

WHEREAS, the previous direction of Council to staff was to review the two-way conversion of Queen Street South between Main Street West and King Street West in consultation with the LRT office without holding up the current approved conversion; and,

WHEREAS, staff have reviewed and have no objections to the conversion of Queen Street South between Main Street West and King Street West;

THEREFORE, BE IT RESOLVED:

- (a) That Queen Street South from King Street West to Main Street West be converted from one-way to two-way traffic and that the appropriate bylaw be passed; and,
- (b) That staff be directed to begin designing the two-way conversion of Queen Street South between Main Street West and King Street West in 2019 to be funded from Capital Account No. 4661820522 (Design) and that construction be tentatively scheduled for 2020 and that the costs associated with implementation be submitted as part of the 2020 Capital Budget submission for Council's consideration.

12.1

CITY OF HAMILTON

NOTICE OF MOTION

Public Works Committee: March 18, 2019

MOVED BY COUNCILLOR J. FARR.....

Implementation of Alternate Concept Design for Concrete Planters on James St. S. Between Duke St. and Bold St. (Ward 2)

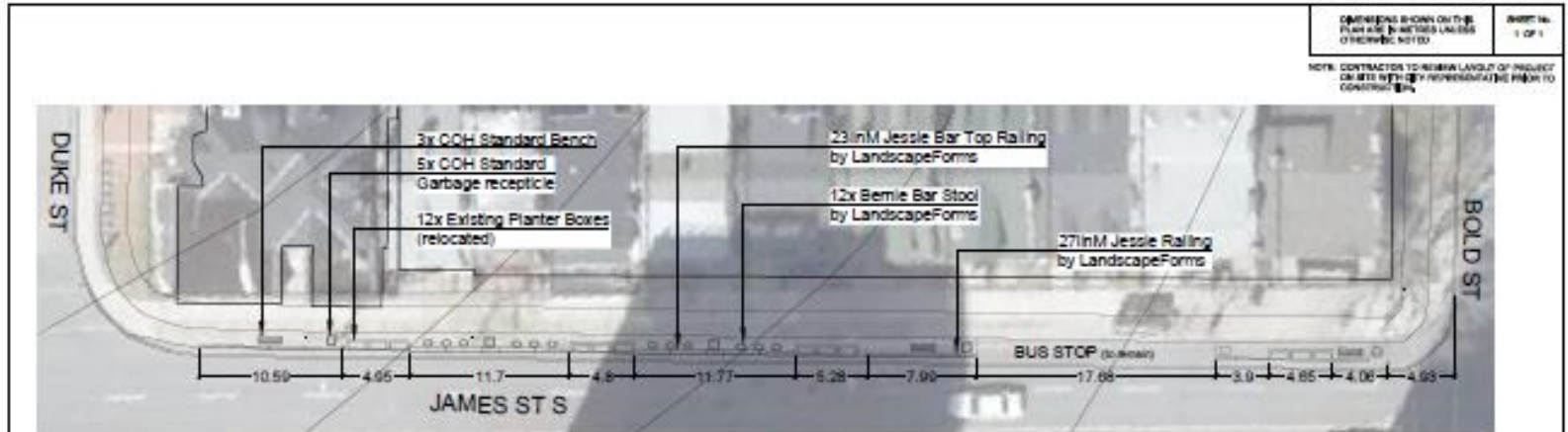
WHEREAS, the recent installation of concrete planters to act as required pedestrian safety measures on the west side of James Street South between Duke Street and Bold Street requires adequate modification as a result of input by local businesses stating that the current configuration greatly limits visibility of their businesses; and,

WHEREAS, an alternate concept design requires the removal of some planters and replacement with an enhanced railing and some permanent seating has been approved by local business and residents following consultation respecting what a modification should entail;

THEREFORE, BE IT RESOLVED:

- (a) That Public Works implement the alternate concept design attached as Appendix "A" to this motion and, in keeping with City standards, be funded from the Ward 2 Area Rating Special Capital Reserve No. 108052 up to \$100,000; and,
- (b) That the Mayor and City Clerk be authorized and directed to execute any required agreement(s) and ancillary documents, with such terms and conditions in a form satisfactory to the City Solicitor.

JAMES ST S - Beautification Project



DATE: 2015.08.10
 PLAN # 15-00000-0000
 OTH: 15-00000-0000
 SHEET No. 1 OF 1
 NOTE: CONTRACTOR TO VERIFY LAYOUT OF PROJECT ON SITE WITH CITY REPRESENTATIVE PRIOR TO CONSTRUCTION.

Artists Rendering of James St S Beautification and Urban Edge Enhancements:



Future View along James South: Looking South to Duke St



Future View along James South: Looking SouthWest



Future View along James South: Looking SouthWest



Future View along James South: Looking SouthWest Near Bold St



Future View along James South: Looking NorthWest Near Duke St



Future View along James South: Looking North Jessie Bar Rail and Bernie stools



Future View along James South: Looking North Jessie Bar Rail

LandscapeForms Site Furniture:



Jessie Railing with Bernie Bar Stools



NO.	REVISIONS	DATE	BY	CHKD

PROJECT NO.	PROJECT NAME	SCALE

City of Hamilton
 Planning and Economic Development

JAMES ST S - Beautification Project
 Proposed Urban Edge Concept

L1