City of Hamilton
GENERAL ISSUES COMMITTEE
AGENDA

Meeting #:	20-008
Date:	March 20, 2020
Time:	12:30 p.m.
Location:	Council Chambers, Hamilton City Hall 71 Main Street West

Stephanie Paparella, Legislative Coordinator (905) 546-2424 ext. 3993

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1. CEREMONIAL ACTIVITIES
2. APPROVAL OF AGENDA

   (Added Items, if applicable, will be noted with *)
3. DECLARATIONS OF INTEREST
4. APPROVAL OF MINUTES OF PREVIOUS MEETING
5. COMMUNICATIONS
6. DELEGATION REQUESTS
7. CONSENT ITEMS
8. PUBLIC HEARINGS / DELEGATIONS
9. STAFF PRESENTATIONS

10. DISCUSSION ITEMS

10.1 Sub-section (a) to Report PED20053, respecting the Enbridge Gas Inc. Leave to Construct Application for the 2021 Dawn to Parkway Extension and Integrated Resource Planning Proposal (Wards 13 and 15)

(Referred from the February 19, 2020 General Issues Committee meeting.)

10.2 Appendix "A" to Report (PED19142(a)) - Approval to Expropriate 70 Brant Street, Hamilton (Ward 3)

The balance of Report PED19142(a) is a confidential document. Please refer to Item 14.3.

10.3 2019 Annual Drinking Water Report (PW20020) (City Wide)

Due to bulk, Appendix "A" to Report PW20020 is only available online.

10.4 Agreement for Continued Supply of Raw Water to 690 Strathearne Avenue North (FCS18049(e)) (Ward 4) (Outstanding Business List Item)

10.5 Ontario Works Funding Update - Employment Services (HSC20005(a)) (City Wide)

10.6 Canada-Ontario Housing Benefit (HSC20013) (City Wide)

10.7 Electric Vehicle Charging Stations Update (PED18250(b)) (City Wide) (Outstanding Business List Item)

10.8 Waterpark Reserve Funding Request (PW20014) (City Wide)

10.9 Backlog in Processing Apportionment of Land Taxes (FCS20026) (City Wide)

11. MOTIONS

12. NOTICES OF MOTION

13. GENERAL INFORMATION / OTHER BUSINESS

14. PRIVATE AND CONFIDENTIAL

14.1 Approval to Expropriate 70 Brant Street, Hamilton (PED19142(a)) (Ward 3)

Pursuant to Section 8.1, Sub-sections (c), (e) and (g) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-sections (c), (e) and (g) of the *Ontario Municipal Act*, 2001, as amended, as the subject matter pertains to a proposed or pending acquisition or disposition of land by the municipality or local board; litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board; and, a matter in respect of which a council, board, committee or other body may hold a closed meeting under another Act.

Appendix "A" to Report PED19142(a) is a public document (By-law). Please refer to Item 10.2.

14.2 Consent and Assignment Agreement – Pier 22 Ground Lease (PED20036) (Ward 4)

Pursuant to Section 8.1, Sub-section (c) of the City's Procedural By-law 18-270, and Section 239(2), Sub-section (c) of the *Ontario Municipal Act*, 2001, as amended, as the subject matter pertains to a proposed or pending acquisition or disposition of land by the municipality or local board.

14.3 Application for Approval to Expropriate Property in Ward 3 (PED20041/LS20004/PW20016) (Ward 3)

Pursuant to Section 8.1, Sub-sections (c), (e) and (k) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-sections (c), (e) and (k) of the *Ontario Municipal Act*, 2001, as amended, as the subject matter pertains to a proposed or pending acquisition or disposition of land by the municipality or local board; advice that is subject to solicitor-client privilege, including communications necessary for that purpose; and, a position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board.

14.4 Canadian Union of Public Employees Union Local 1041, Ratification of Collective Agreement (HUR20006) (City Wide)

Pursuant to Section 8.1, Sub-section (d) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-section (d) of the *Ontario Municipal Act*, 2001, as amended, as the subject matter pertains to labour relations or employee negotiations.

14.5 Waterdown Bay - 392 Dundas Street East (LS20003 / PED20049) (Ward 15) (Distributed under separate cover)

Pursuant to Section 8.1, Sub-sections (e) and (f) of the City's Procedural By-law 18-270, as amended, and Section 239(2), Sub-sections (e) and (f) of the *Ontario Municipal Act, 2001*, as amended, as the subject matter pertains to litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board; and advice that is subject to solicitor-client privilege, including communications necessary for that purpose.

15. ADJOURNMENT

DEFERRED from the February 19, 2020 General Issues Committee:

Sub-section (a) to Report PED20053, respecting the Enbridge Gas Inc. Leave to Construct Application for the 2021 Dawn to Parkway Extension and Integrated Resource Planning Proposal (Wards 13 and 15) (Report attached for reference.)

That the General Manager of Planning and Economic Development be authorized and directed to advise the Ontario Energy Board that Hamilton withdraws its request for intervenor status for file EB-2019-0159 in respect of the Enbridge Gas Inc. Leave to Construct Application for the 2021 Dawn to Parkway Extension and Integrated Resource Planning Proposal.

Hamilton

CITY OF HAMILTON
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Growth Management Division

REFERENCE MATERIAL ONLY

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	February 7, 2020
SUBJECT/REPORT NO:	Enbridge Gas Inc. Leave to Construct Application for the 2021 Dawn to Parkway Extension and Integrated Resource Planning Proposal (PED20053) (Wards 13 and 15)
WARD(S) AFFECTED:	Wards 13 and 15
PREPARED BY:	Guy Paparella (905) 546-2424 Ext. 5807 Alvin Chan (905) 546-2424 Ext. 2978
SUBMITTED BY: **SIGNATURE:**	Tony Sergi Senior Director, Growth Management Planning and Economic Development Department

RECOMMENDATIONS

(a) That the General Manager of Planning and Economic Development be authorized and directed to advise the Ontario Energy Board that Hamilton withdraws its request for intervenor status for file EB-2019-0159 in respect of the Enbridge Gas Inc. Leave to Construct Application for the 2021 Dawn to Parkway and Integrated Resource Planning Proposal.

EXECUTIVE SUMMARY

Enbridge Gas Inc. ("Enbridge") has applied to the Ontario Energy Board ("OEB") to construct 10.2 kilometres of 48-inch diameter natural gas pipeline and associated facilities in the City of Hamilton from the Kirkwall Valve Site to the Hamilton Valve Site. The Project will provide incremental capacity of 92,174 GJ/d on Enbridge Gas's Dawn Parkway System with an in-service date in the fall of 2021. The proposed project extends through the City of Hamilton, more specifically, Wards 13 and 15 (see attached Appendix "A" to Report PED20053).

Enbridge has also applied to the OEB for approval of its Integrated Resource Planning Proposal, as it applies to the proposed project and future projects, as it will allow the OEB to better assess future projects. However, per Procedural Order 1 of the OEB dated January 30th, 2020 (see attached Appendix "B" to Report PED20053), the Enbridge Integrated Resource Planning (IRP) Proposal shall be heard separate and apart from the current Leave to Construct application proceeding.

Procedural Order 1 goes on to state that, whereby Enbridge Gas, and any parties that filed intervenor requests or parties that filed comments may file with the OEB by February 10, 2020 written submissions regarding the Draft Issues List attached as Appendix A to the Procedural Order and to confirm the additional scope for the Leave to Construct Proceeding.

Accordingly, staff from Healthy and Safe Communities, Planning and Economic Development and Public Works have determined the additional scope of the Leave to Construct proceeding to be appropriate, which shall be confirmed to the OEB through the recommended submissions.

With respect to the Draft Issues list, staff have requested that an additional issue be included to address the proposal and how it addresses the City's declared Climate Emergency, established policies and goals.

In particular, given the lifespan of the proposed pipeline being beyond 2050; and, as it falls fully within the municipal boundaries of the City of Hamilton, how does Enbridge Gas Inc., proposed Leave to Construct Application address the City of Hamilton's declared Climate Emergency and subsequent policies and goals?

In conclusion, the approval of this Report will also authorize City staff to file Interrogatories; and, a Letter of Comment including potential Conditions of Approval, to the OEB, with respect to the Enbridge Gas Inc. Leave to Construct Application for the 2021 Dawn to Parkway Extension.

Alternatives for Consideration – See Page 17

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: If the alternative recommendation is approved by Council, the City will be affirming that they wish to participate in the legal oral hearing proceeding, which may necessitate outside counsel and consultants in representing the City's concerns.

Staffing: Not Applicable

Legal: The OEB will hold a public oral hearing to consider Enbridge's Leave to Construct Application. As part of its review of this application, the OEB will assess Enbridge's compliance with the OEB's Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario.

If directed, the City shall submit a Letter of Comment including potential conditions and interrogatories to the OEB, and requesting that Enbridge Gas Inc., provide a response as to the acceptability and reasonableness of the interrogatories submitted for the Enbridge Gas Inc. Leave to Construct Application for the 2021 Dawn to Parkway Extension.

If the alternative recommendation is approved by Council, the City will be affirming that they wish to participate in the legal oral hearing proceeding, which may necessitate outside counsel and consultants in representing the City's concerns.

HISTORICAL BACKGROUND

On November 1, 2019, Enbridge submitted the Leave to Construct Application related to the 2021 Dawn to Parkway Extension and Integrated Resource Planning Proposal to the OEB, the Province's energy regulator responsible for ensuring compliance with the Province's environmental guidelines for the location, construction and operation of hydrocarbon pipelines and facilities in Ontario.

The proposed project will construct approximately 10.2 kilometres of Nominal Pipe Size ("NPS") 48 natural gas pipeline from an interconnect at the Kirkwall Valve Site to the Hamilton Valve Site in the City of Hamilton more specifically, Wards 13 and 15 (see attached Appendix "A" to Report PED20053). Subject to Provincial regulatory review and receipt of all permits, Enbridge expects this project to be in service as of November 1, 2021.

The application for Leave to Construct for the proposed project; its regulatory review; and, the Environmental Report, are available for download from Enbridge's project website at:

www.uniongas.com/projects/kirkwall-hamilton

As well as on the OEB's regulatory applications page at:

www.rds.oeb.ca/HPECMWebDrawer/Record?q=CaseNumber%3DEB-2019-0159&sortBy=recRegisteredOn-&pageSize=400

Of note, the OEB project website also includes letter of comment and request for intervenor status submissions from citizens, agencies, and others.

Enbridge has also requested that the OEB determine that the Integrated Resource Planning ("IRP") Proposal, to be reasonable and appropriate, as it relates to the Project and for application to future Enbridge projects.

However, per Procedural Order 1 of the OEB dated January 30, 2020 (see attached Appendix "B" to Report PED20053), the IRP Proposal raises issues of broad applicability that are best dealt with outside of the context of a project-specific Leave to Construct proceeding.

Accordingly, the OEB has determined that Enbridge's IRP Proposal should be heard separate and apart from the current Leave to Construct application proceeding.

Furthermore, the Procedural Order states that "whereby Enbridge Gas, and any parties that filed intervenor requests or parties that filed comments may file with the OEB by February 10, 2020 written submissions on the following:

1) The Draft Issues List attached to Appendix A to this Procedural Order.

2) Whether the scope of the Leave to Construct proceeding should include:

   a. impacts related to the methods of upstream natural gas extraction (such as hydraulic fracturing) for natural gas that will be transported through the pipeline; and,

   b. impacts related to the ultimate downstream consumption of the natural gas transported through the pipeline."

In review of the matters identified within the Procedural Order, staff support the additional scope identified in item 2 above; and, request that an additional issue be added to the Draft Issues list per Item 1 above.

In particular, given the lifespan of the proposed pipeline is beyond 2050; and, as it falls fully within the municipal boundaries of the City of Hamilton, how does Enbridge's proposed Leave to Construct Application address the City of Hamilton's declared Climate Emergency and subsequent policies and goals?

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

In review with the Healthy and Safe Communities - Public Health Services – Healthy Environments Division – Health Hazards Section, the following outline of the City's Climate Change initiatives has been provided.

Climate change refers to the long-term change in average weather patterns resulting from the release of greenhouse gases ("GHG") into the atmosphere, resulting in temperature changes and altered weather patterns. Key sources of GHG in Hamilton include the burning of fossil fuels such as and natural gas in energy consumption; for heating and cooling, lighting and powering electronics; and transportation. Accordingly, reducing GHG emissions helps conserve our energy supply, improves air quality and reduces their effect on climate change and ecosystems.

In 2008 the City passed the Corporate Air Quality and Climate Change Action Plan; and the Corporate Air Quality and Climate Change Strategic plans. In addition, a GHG emissions inventory for City of Hamilton operations and in our community was completed in 2009.

Furthermore, as part of the Federation of Canadian Municipalities Partners for Climate Protection program, Hamilton achieved all five corporate milestones in in 2012. Hamilton has achieved up to milestone three for its community work. Notwithstanding, the City continues to work towards reducing GHG locally from both its corporate and community emissions, in particular:

- a 50% reduction of 2005 greenhouse gases levels by 2030;
- an 80% reduction of 2005 greenhouse gases levels by 2050.

Subsequently, City Council declared a climate change emergency on March 27, 2019, which details intent to change the community wide GHG target from 80% to carbon neutrality before 2050. This aligns more closely with recent United Nations Intergovernmental Panel on Climate Change (IPCC) reports highlighting the global need to drastically reduce GHG emissions.

As part of the subject application, an environmental report was completed in 2019 by Stantec Consulting Limited and filed with the OEB. In particular, it states that natural gas, because of its clean-burning properties, has an increasingly important role to play in reducing the environmental impacts in comparison to other forms of energy use. The use of natural gas, either in conjunction with or instead of other fossil fuels, in residential, commercial, industrial and transportation applications reduces environmental impacts in two ways.

Enbridge application to OEB, Exhibit A Tab 8, has stated the following in regards the benefits of natural gas compared to other high carbon intensive fuels:

- Firstly, processing with natural gas is frequently more efficient, reducing total energy use; and

- Secondly, natural gas pollutant release per unit of energy is less than other fossil fuels. Natural gas combustion produces virtually no sulphur dioxide – the most significant component of acid rain formation. Combustion of natural gas also emits 2 significantly lower amounts of reactive hydrocarbons and nitrogen oxides – the key 3 photochemical agents in the formation of urban smog.

Exhibit A, Tab 10 of the Enbridge Application to OEB further states:

- The environmental report also identifies an environmentally preferred route for the proposed pipeline and the various mitigation measures to minimize the impacts to the environment resulting from the construction of the Project.

- Enbridge believes that by following its standard construction practices and adhering to the recommendations and mitigation identified in the environmental report that the construction and operation of the Project will have negligible impacts on the environment. The cumulative effects assessment completed as part of the environmental report indicates that no significant cumulative effects are anticipated from the development of the Project, and Enbridge will comply with all mitigation measures recommended in the environmental report.

However, staff note that global warming has been largely attributed to human activity, primarily being the release of carbon dioxide and other greenhouse gases to the atmosphere.

These gases enhance the insulating properties of the atmosphere, reducing heat loss, thereby warming the planet. Continued emission of these gases is the primary cause for concern about climate change now and into the immediate future. Particularly important is the emissions of carbon dioxide, which is released through the combustion of carbon-

is the emissions of carbon dioxide, which is released through the combustion of carbon-based fossil fuels. In Canada, over 80 % of total national greenhouse gas emissions are associated with the production or consumption of fossil fuels for energy purposes.

As carbon dioxide stays in the atmosphere for a long time, levels of carbon dioxide continue to build-up in the atmosphere with on-going human emissions. Even with human emissions eliminated, atmospheric levels of carbon dioxide would fall very gradually as natural processes slowly remove carbon dioxide from the atmosphere. This means that past emissions from human activity continue to affect the climate system for a very long time.

The potential impacts of climate change are far-reaching, affecting our economy, infrastructure, and health, the landscapes around us, and the wildlife that inhabit them. However, notwithstanding the above, the decision with respect to the Leave to Construct Application for the 2021 Dawn to Parkway Extension and Integrated Resource Planning Proposal, is that of the Ontario Energy Board.

Accordingly, the City's Pipeline Technical Review team has reviewed the Leave to Construct Application for the 2021 Dawn to Parkway Extension and have recommended that the General Manager of Planning and Economic Development be authorized and directed to withdraw "Intervenor" status and to raise potential municipal issues of concern by submitting a Letter of Comment including potential conditions and interrogatories to the Ontario Energy Board, and requesting that Enbridge Gas Inc., provide a response as to the acceptability and reasonableness of the interrogatories submitted for the Enbridge Gas Inc. Leave to Construct Application for the 2021 Dawn to Parkway Extension.

Lastly, per the Procedural Order 1 (see attached Appendix "B" to Report PED20053), staff support the additional scope identified in item 2 above; and, request that an additional Issue be added to the Draft Issues list per Item 1 above.

In particular, given the lifespan of the proposed pipeline is beyond 2050; and, as it falls fully within the municipal boundaries of the City of Hamilton, how does Enbridge's proposed Leave to Construct Application address the City of Hamilton's declared Climate Emergency and subsequent policies and goals?

OEB Decision-making Process:

The OEB is an independent, quasi-judicial tribunal that is regulated by the *Ontario Energy Board Act* (the "Act"). The primary objective of the OEB is to ensure the public interest is served and protected. Any individual or organization planning to construct

certain hydrocarbon transmission facilities within Ontario must apply to the OEB for a Leave to Construct prior to construction, pursuant to section 90(1) of the *Act*.

The OEB's approval for construction of pipelines is conditioned upon compliance with applicable regulatory requirements including design, operation, maintenance, safety, and integrity. The OEB will hold a public oral hearing to consider Enbridge's Leave to Construct Application.

As part of its review of this application, the OEB will assess Enbridge's compliance with the OEB's Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario. The City's formal submission of Interrogatories; and, Letter of Comment including conditions, if submitted, will be considered at the oral hearing.

RELEVANT CONSULTATION

The following groups were consulted and provided input to this Report:

- City Manager's Office – Legal and Risk Management Services Division;
- Healthy and Safe Communities - Public Health Services – Healthy Environments Division – Health Hazards Section;
- Healthy and Safe Communities – Hamilton Fire Department;
- Planning and Economic Development – Growth Management Division;
- Planning and Economic Development – Planning Division;
- Public Works – Engineering Services Division – Geomatics and Corridor Management Section; and,
- Public Works – Hamilton Water – Source Protection Planning Section.

Staff from the above listed Departments have assembled comments regarding the proposed Enbridge 2021 Dawn to Parkway Extension Project. If the Recommendations in this Report are approved, the comments will be submitted to Enbridge and a Letter of Comment will be submitted to the OEB for consideration as part of the Leave to Construct Application and their decision.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Potential Municipal Issues of Concern:

Staff from Healthy and Safe Communities (the Hamilton Fire Department and Healthy Environments – Health Hazards), Planning and Economic Development (Planning Division), and Public Works (Hamilton Water – Source Water Protection and Engineering Services – Geomatics and Corridor Management); and, the City Manager's

Office – Legal and Risk Management Services Division have identified potential municipal issues regarding the proposed project.

Emergency Response Issues:

The Hamilton Fire Department is requesting the following in relation to potential emergency response concerns and conditions regarding the project:

1) That Enbridge provide a copy of the emergency response plan specific to the construction and cutover activities.

2) That Enbridge provide contact information for their site commander relative to the cutover of the replacement line so that consultation and co-ordinated planning can take place.

3) Given that the diameter of the pipe is being installed for this project, the Hamilton Fire Department is looking for Enbridge to provide information relative to the installation of control valves on the pipeline and to confirm the quantity of product that will be transported through the pipeline.

4) That Enbridge provide adequate access points / routes to any new or replacement sections of the pipeline.

5) Development of a Traffic Plan – there are some critical intersections from an emergency response perspective that could be affected as part of the project. The Hamilton Fire Department should be consulted on developing traffic plans given these concerns.

6) Emergency Response Equipment – given the potential for increase in levels of product being transported, Enbridge must ensure that the levels of emergency response equipment that they would be providing in the event of an emergency are maintained and or increased at adequate levels.

7) Financial assurance – allocation of financial responsibility for costs that may be incurred for emergency response, clean-ups and other required action, such as evacuation in the event of a spill, particularly costs which may be in excess of Enbridge's commercial liability insurance coverage limits.

Cultural Heritage Issues:

The location of the project meets seven of the ten criteria used by the City of Hamilton and the Ministry of Heritage, Sport, Tourism, and Culture Industries for determining archaeological potential.

In review of the application, the site was assessed in a Stage 1 archaeological assessment (P256-0564-2018) conducted as part of Union Gas' environmental report for this project. The report recommended and indicated that a Stage 2 archaeological assessment will be conducted before commencement of the project.

Staff agree with the recommendations and have requested the appropriate condition to address this concern.

Additionally, the location of the project comprises one designated property, which includes a cemetery (1565 Brock Road, Flamborough) and approximately fifty-five properties included in the City's Inventory of Buildings of Architectural and/or Historical Interest.

As part of Union Gas' environmental report for this project, a cultural heritage assessment report was conducted. Based on the desired location of the pipeline, the assessment report concluded that only one (1) of the cultural heritage resources located within the area of the project, 750 Concession 8 West, was situated within fifty metres of the planned construction activities and, therefore, is at risk for indirect, vibration-related impacts.

The report recommends that all staging areas and construction activities associated with the proposed route "be planned and undertaken in a manner to avoid the heritage attributes of the identified CHRs." It was also recommended that a qualified heritage consultant should be employed should future work require expansion and/or development of other alternatives.

In terms of the potential vibration impacts on 750 Concession 8 West, it is recommended that a qualified building conditions specialist or geotechnical engineer with previous heritage structure experience be consulted to identify vibration mitigation measures in advance of construction.

Staff agree with these recommendations and have therefore requested respective conditions of approval to address the built heritage resources. In particular:

1) That a Stage 2 archaeological assessment will be conducted on any portion of the Project's anticipated construction activities which impacts areas of identified archaeological potential, as out lined P256-0564-2018.

2) That, as part of ongoing Indigenous Engagement Strategies, Indigenous stakeholders shall be able to review, comment or take part in the current report and future archaeological assessment work for this project.

3) As outlined in the CHAR, that Enbridge Gas Inc., shall ensure that:

   a. staging areas and construction activities associated with the proposed route be planned to avoid the heritage attributes of the identified cultural heritage resources;

   b. a qualified heritage consultant should be employed should future work require expansion and/or development of other alternatives; and

   c. prepare vibration mitigation strategy for 750 Concession 8 West.

Natural Heritage Issues:

In review, Natural Heritage staff have provided the following comments as it relates to the Natural Environment.

The Stantec Dawn-Parkway System Expansion: Kirkwall-Hamilton Pipeline Section: Environmental Report (June 21, 2019) relied on existing field data, background information, a field reconnaissance site visit on August 10, 2016, and aerial reconnaissance on December 5, 2016, to evaluate the impacts and proposed route options.

Detailed field studies to confirm Species-at-Risk (SAR) and Significant Wildlife Habitat (SWH) are proposed "prior to construction" because "these supplemental studies are not expected to change the conclusions regarding potential adverse residual impacts". SAR and SWH screenings were completed in the Stantec report and numerous areas of potential SAR habitat and candidate SWH were identified along the proposed pipeline route.

However, the deferral to future studies are of concern to staff and has raised several interrogatories to be posed and responded to by Enbridge Gas Inc., being:

1) How can decisions on the impacts of the project and the preferred route be made before detailed field data (i.e. Ecological Land Classification, fish habitat assessment, species at risk, Significant Wildlife Habitat) are available?

2) Are decisions being made without complete and current data?

3) Was the local data in the Hamilton Natural Heritage Database/Nature Counts used?

4) Is it reasonable to assume that all potential impacts on natural features, SAR and SWH can be mitigated when the process is well-advanced ("prior to construction")? Will it be too late to properly avoid or mitigate impacts?

5) Will forest habitat along the proposed pipeline route be assessed as Significant Wildlife Habitat (bat maternity colonies, woodland raptor nesting habitat, and woodland area-sensitive breeding bird habitat)?

Similarly, Significant Woodlands are discussed in the Stantec report, but are not identified on Figure 12 which raises:

6) Where are Significant Woodlands located along the pipeline route (show on Figure 12) and how will they be impacted?

Moreover, the report provides limited details on the tree replacement program. Since "free to grow" is defined as a plant which is 1 metre tall, it appears that very small caliper nursery stock are proposed, which raises additional concerns and interrogatories, being:

7) What size of tree will be compensated?

8) What size of nursery stock will be planted?

9) Does the proposed removal of vegetation and trees and the tree replacement policy (1:1) adequately address the loss of canopy cover and the time lag for the canopy to re-establish? How does this address climate change? If a large tree is to be removed and only one small caliper tree planted to compensate, how does this address the temporary loss of canopy and ecological benefits?

10) Would a more robust tree planting program better mitigate impacts of vegetation loss and climate change?

Lastly, natural and cumulative impacts are briefly discussed, but details are not provided. Since the proposed pipeline will parallel two to three existing pipelines, the increasing width of the corridor and associated loss of natural area was not discussed which raises additional concerns interrogatories to be addressed by Enbridge Gas Inc, Accordingly, the following interrogatories are proposed:

11) Is trenchless technology (tunnelling) under sensitive features (stream crossings, wetlands) being considered as a way of minimizing disturbance and impacts?

12) What on-going maintenance requirements are proposed (e.g. periodic vegetation removal, site alteration) and how will these impact natural features?

13) What are the cumulative impacts of expanding the width of the pipeline corridor on the Natural Heritage System and how are they being addressed? How wide will the area of disturbance be?

Notwithstanding the above, should the OEB decide to grant the proposed Leave to Construct, the following conditions of approval are requested, if submitted.

1) That prior to OEB approval, Enbridge Gas Inc., shall prepare a revised Environmental Report, containing completed field work, and revised avoidance and mitigation measures.

2) That Enbridge Gas Inc., shall obtain all necessary authorizations for the design, planning, construction, and operation of the project, including without limitation all necessary permits, easements, and other authorizations from the Department of Fisheries and Oceans, Province, municipalities and conservation authorities.

3) That Enbridge Gas Inc., shall construct the project using trenchless technology methods through all sensitive sites as agreed upon by the City, Conservation Authorities, and Enbridge.

4) That Enbridge Gas Inc., shall prepare and file with OEB a Restoration Plan at least 60 days prior to the commencement of construction and restore all lands impacted by the project within one year of the completion of construction. The Restoration Plan shall include a detailed monitoring plan, to ensure that vegetation survives.

5) That Enbridge Gas Inc., shall identify areas where invasive species are present and implement Best Management Practices for Construction, to avoid the spread of invasive species between sites.

6) That Enbridge Gas Inc., shall prepare a Tree Protection Plan, according to the City of Hamilton's Tree Protection Guidelines (2010) to the satisfaction of the Manager of Development Planning, Heritage and Design and the Forestry Section.

7) That Enbridge Gas Inc., shall implement all the mitigation and protective measures in the Stantec Dawn-Parkway System Expansion: Kirkwall-Hamilton Pipeline Section: Environmental Repot (June 21, 2019), specifically Table 4-11.

8) That Enbridge Gas Inc., shall avoid construction activities within the timing windows for wildlife and fish (e.g. migratory birds, breeding amphibians, bat maternity roosts, fish, and hibernating reptiles and amphibians).

Corridor Management Issues:

The following comments relate to the road crossing portions of the proposed pipeline project. In particular, the proposal involves crossings at the following locations:

- Westover Road (RA Between Lots 30 and 31 Concession 7, Geographic Township of Beverly);
- Middletown Road (RA Between Lot 36, Concession 7 Geographic Township of Beverly and Lot 1, Concession 7, Geographic Township of West Flamborough); and,
- Brock Road (Given Road Part of Lot 7 Concession 7, Geographic Township of West Flamborough)

In review, staff note that the 2000 Model Franchise Agreement between the City of Hamilton and Union Gas Limited (now owned by Enbridge Gas Inc.), dated March 28, 2007, as authorized under By-law No. 07-090, would address any and all crossing concerns.

Based on the foregoing, Public Works – Engineering Services Division – Geomatics and Corridor Management Section have no further comments or concerns.

Source Water Protection Issues:

Public Works – Hamilton Water – Source Protection Planning Section staff have advised that from a groundwater perspective:

Stantec completed a desktop-based background review of the groundwater conditions. The report discusses anticipated potential impacts, includes the recommendation for the hydrostatic and wells impact assessment but no actual field work has been completed as part of this report.

The preferred route for the pipeline does not cross a wellhead protection area for a municipal drinking water well, but it crosses areas of Highly Vulnerable Aquifers (HVA) and Significant Groundwater Recharge as identified the Halton-Hamilton Source Protection Assessment Reports (2017).

Therefore, a Hydrological Assessment report shall be prepared to better characterize local conditions, existing well users, hydraulic conductivity, dewatering needs and assess potential impacts. Giving the fact that blasting and dewatering may be required, baseline water quality needs to also be documented.

The pipe crosses an area where the residents rely heavily on groundwater. More than this, it crosses the property of 3 year-round mobile homes. The on-site wells shall be part of the well survey and the monitoring program for before and during the time work is being completed. Any quality or quantity impacts need to be addressed. The local wells are considered GUDI so the above-mentioned sites use UV treatment technology for their drinking water systems that it is very sensitive in changes in turbidity levels.

A Mitigation and Protective plan should be in place and made available to the City and local residents.

Given the fact that the pipe crosses a HVA area characterized by fractured bedrock and shallow overburden, a Spill Plan that considers all the potential sources for contamination needs to be developed. Chemicals associated with the equipment and potential on-site diesel storage during the construction work shall be documented and monitored during the construction phase.

Hamilton Water has or is in the process to establish Municipal Responsibility Agreements for the mobile home sites identified above. The proposed work has the potential to impact the private services on these sites especially if there is the need for a larger easement. Ponderosa is currently looking at servicing alternatives based on centralized water and wastewater systems.

The site is already tight due to the presence of wetlands and other natural constraints and crossing more pipelines or a wider easement may significantly impact the serviceability of this site. Enbridge need to closely consult with the property owners on these sites and provide detailed site-specific drawings to ensure that these sites do no suffer undue economic hardship.

Based on the foregoing, the following conditions of approval are requested:

1) That a Hydrological Assessment report shall be prepared to better characterize local conditions, existing well users, hydraulic conductivity, dewatering needs and assess potential impacts to the satisfaction of Public Works, Hamilton Water, Source Protection Planning. Of note, given the fact that blasting and dewatering may be required, the baseline water quality needs is to be documented.

2) That on-site wells shall form part of the well survey and the monitoring program for before and during the time work is being completed. Any quality or quantity impacts shall be addressed.

3) That a Mitigation and Protective plan be in place and made available to the City and local residents.

4) That a Spill Plan that considers all the potential sources for contamination be developed, whereby chemicals associated with the equipment and potential on-site diesel storage during the construction work shall be documented and monitored during the construction phase.

5) That Enbridge Gas Inc., consult with the property owners of the identified year-round mobile home sites; and, to provide detailed site-specific drawings to ensure that these sites do no suffer undue economic hardship.

Climate Change Issues:

As stated above in the above Policy Implications and Legislated Requirements, Hamilton City Council has declared a climate change emergency on March 27, 2019. Hamilton joins well over 800 other municipalities across the world, including the Government of Canada, who have declared a climate change emergency.

In order to reduce the catastrophic impacts of climate change the UN IPCC has stated the world needs to drastically reduce GHG emissions and become carbon neutral by 2050.

Given this the Air Quality and Climate Change Team within the Public Health Section of the Healthy and Safe Communities Department would like more information on how Enbridge plans to help meet these important targets. Specifically, the following interrogatories are requested:

1) How is Enbridge planning to help achieve Hamilton's community-wide GHG emission reduction targets?

2) When and how does Enbridge plan to increase the supply of Renewable Natural Gas (RNG) within its existing network?

Notwithstanding the above, should the OEB decide to grant the proposed Leave to Construct, the following conditions of approval are requested, if submitted:

1) That a Health Equity Impact Assessment be completed by a qualified professional to determine potential for negative impacts on population health in Hamilton.

ALTERNATIVES FOR CONSIDERATION

a) That the General Manager of Planning and Economic Development be authorized and directed to confirm the "Intervenor" status and subsequent acceptance of the Draft Issues List attached as Appendix A to Procedural Order 1; and, to confirm acceptance of the impacts related to the methods of upstream natural gas extraction (such as hydraulic fracturing) for natural gas that will be transported through the pipeline and impacts related to the ultimate downstream consumption of the natural gas transported through the pipeline as within the Scope of the Leave to Construct proceeding.

b) That if the City chooses to proceed as a formal intervenor and fully participate in the hearing before the Energy Board. Such formal participation will require outside Counsel with experience before the Board to be engaged along with other expert consultants. In the event that the City so chooses, staff will provide an estimate of the funds that will need to be set aside to pay for outside representation and expert testimony.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

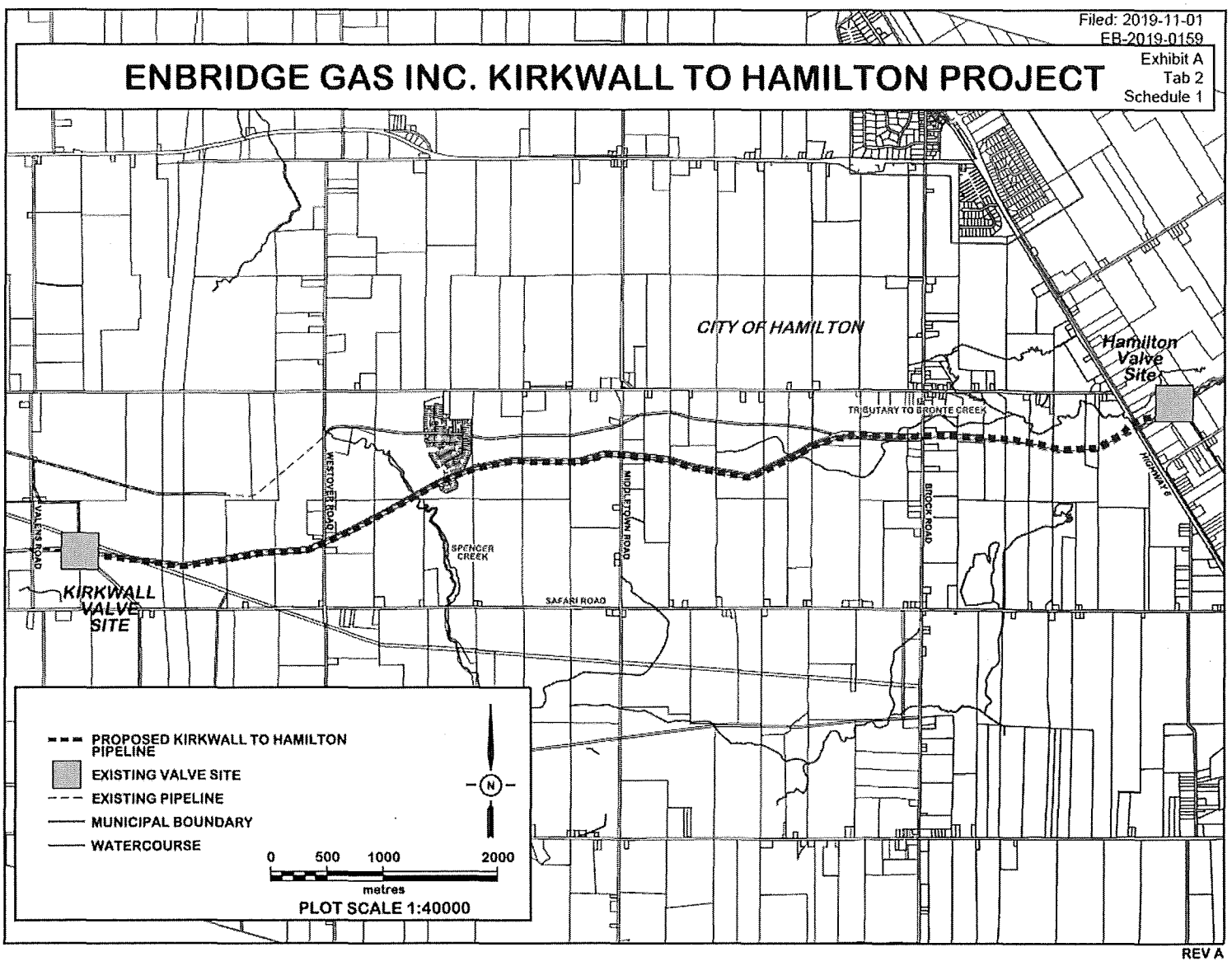
Economic Prosperity and Growth
Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

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

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" – Map of proposed 2021 Dawn to Parkway Extension
Appendix "B" – Ontario Energy Board Procedural Order – January 30, 2020.

Appendix "A" to Report PED20053
Page 1 of 1



Ontario Energy Board | Commission de l'énergie de l'Ontario

EB-2019-0159

Enbridge Gas Inc.

Application to construct natural gas pipeline and associated facilities in the City of Hamilton
and
Request for review of Integrated Resource Plan (IRP) Proposal

PROCEDURAL ORDER NO. 1

January 30, 2020

On November 1, 2019 Enbridge Gas Inc. (Enbridge Gas) filed an application with the Ontario Energy Board (OEB) pursuant to section 90(1) and 97 of the *Ontario Energy Board Act 1998, S.O. 1998, c.15 (Schedule B)* (OEB Act) (Leave to Construct Application) which includes the following:

- Leave to construct approximately 10.2 kilometers of 48 inch diameter natural gas transmission pipeline and associated facilities from the Kirkwall Valve Site to the Hamilton Valve Site in the City of Hamilton (Project).

- Approval of the forms of easement agreements related to the construction of the Project.

Enbridge Gas also included in the application an Integrated Resource Planning (IRP) Proposal and requested that the OEB determine it to be reasonable and appropriate.

The OEB issued a Notice of Application on January 6, 2020 (Notice). The Notice was published and served as directed by the OEB.

In this Procedural Order the OEB:

1. Determines that the IRP Proposal, as it relates to future Enbridge projects, will be reviewed separately at a later date to be determined by the OEB.

2. Sets the process to determine the scope of the hearing for the Leave to Construct Application.

Integrated Resource Planning (IRP) Proposal- Will be Reviewed Separately

As part of its application and evidence, Enbridge Gas included an IRP Proposal and requested that the OEB determine that it is reasonable and appropriate as it relates to future Enbridge Gas projects. Enbridge Gas requested that, if the OEB cannot make a determination related to the IRP Proposal by April 30, 2020, the OEB review the IRP Proposal separately as a distinct stand-alone application from the Leave to Construct application to ensure that the Project meets the in-service date of November 1, 2021.

Enbridge Gas said that it filed the IRP Proposal in recognition of OEB direction in recent decisions on Leave to Construct applications and in the OEB's Report on the DSM Mid-Term Review, which required that Enbridge Gas demonstrate consideration of conservation and energy efficiency alternatives to infrastructure investments. The Proposal consists of an IRP framework to guide Enbridge Gas's assessment of future IRP applications relative to other facility and non-facility LTC alternatives.

The OEB is of the view that the IRP Proposal raises issues of broad applicability that are best dealt with outside of the context of a project-specific Leave to Construct proceeding. The OEB expects to provide further direction on the next steps regarding consideration of Enbridge Gas's IRP Proposal in the near future. The OEB has determined that Enbridge Gas's IRP Proposal should be heard separate and apart from the current Leave to Construct application proceeding.

Intervenor Requests and Letters of Comment – Issues and Concerns Raised

The OEB received a number of requests for intervenor status which would, if granted, allow for active participation in all phases of the OEB's public review of the application. Parties asking for intervenor status submitted variously that their interests in participating in the proceeding relate to the need for the Project, cost and impacts of costs on ratepayers, security of gas supply, market based alternatives, conservation alternatives, transportation capacity, environmental and ecological impact of the Project, impacts on cultural heritage, impacts on municipal infrastructure, emergency response protocols, and impacts of the Project related to greenhouse gas (GHG) emissions and climate change. A number of intervenors stated that their intervention interest is in relation to the OEB's review of the IRP Proposal.

The OEB received numerous comments from individual citizens and citizens groups and organizations. Most of the comments voiced environmental concerns and opposition to constructing the Project. Many also requested an oral hearing. The environmental concerns generally related to two issues: (i) concerns with local site-specific impacts of the proposed pipeline on the ecologically sensitive wetlands and lands in the rural area within

the boundaries of the City of Hamilton, and (ii) broader concerns related to GHG emissions and climate change, related to both the upstream source of the natural gas that will be transported through the pipeline (some of which will be sourced from the Appalachian region of the United States, where hydraulic fracturing is common), and the downstream emissions that will result when the natural gas is ultimately consumed.

The OEB recognizes that there is significant interest in this proceeding. However, some of the issues identified by parties, in particular those in relation to the upstream and downstream impacts of natural gas extraction and consumption, are not commonly raised by parties or considered by the OEB in leave to construct proceedings. The OEB wishes to facilitate a meaningful and productive review of this application for Leave to Construct, but it is required to stay within the bounds of its statutory authority under the *Ontario Energy Board Act, 1998*. For these reasons, the OEB is seeking comments on the Issues List that will set the scope of this proceeding.

Determining the Scope of the Proceeding – Leave to Construct Application

As the first procedural step, the OEB will set out a process to determine the scope of the issues it will hear in the proceeding on Enbridge Gas's Leave to Construct application.

Ordinarily the OEB does not prepare an Issues List for a leave to construct application. The test established in section 96 of the OEB Act is whether the project is in the "public interest", and typically the OEB has considered more or less the same broad scope of issues in every case. Given the clear interest in this case in issues that have not typically been reviewed in the OEB's leave to construct hearings – in particular issues related to the upstream sourcing of the natural gas and the downstream use of natural gas – the OEB has determined that it would be appropriate to determine whether these issues are in scope for the proceeding at the outset. The OEB has prepared a draft Issues List (Draft Issues List) which is attached to this Procedural Order. Enbridge Gas, OEB staff, parties that submitted a request for intervenor status, and parties that filed letters of comment will be given an opportunity to file written submissions on the Draft Issues List.

In addition, the OEB would like to receive submissions on the extent to which it should consider a) impacts related to the methods of upstream natural gas extraction (such as hydraulic fracturing) for natural gas that will be transported through the pipeline, and b) impacts related to the ultimate downstream consumption of the natural gas transported through the pipeline.

After considering these comments, the OEB will render a decision on the Issues List to define the scope of the Leave to Construct proceeding.

Decision on Intervenor Status and Cost Eligibility will be Made after the Scope is Determined

The OEB will decide on intervenor requests and cost award eligibility requests after issuing a decision on the Issues List. Any party granted cost award eligibility will have an opportunity to include time spent on providing comments of the Draft Issues List.

Oral versus Written Hearing

A number of parties requested an oral hearing. The OEB will make this determination after issuing a decision on the Issues List. The OEB will schedule next procedural steps after it sets the scope of the proceeding.

It is necessary to make provision for the following matters related to this proceeding. The OEB may issue further procedural orders from time to time.

IT IS THEREFORE ORDERED THAT:

1. Enbridge Gas, parties that filed intervenor requests and parties that filed comments may file with the OEB by **February 10, 2020** written submissions on the following:

    a. The Draft Issues List attached to Appendix A to this Procedural Order.

    b. Whether the scope of the Leave to Construct proceeding should include:

        i. impacts related to the methods of upstream natural gas extraction (such as hydraulic fracturing) for natural gas that will be transported through the pipeline

        ii. impacts related to the ultimate downstream consumption of the natural gas transported through the pipeline.

All materials filed with the OEB must quote the file number, **EB-2019-0159**, be made in a searchable/unrestricted PDF format and sent electronically through the OEB's web portal at https://pes.ontarioenergyboard.ca/eservice. Two paper copies must also be filed at the OEB's address provided below. Filings must clearly state the sender's name, postal address and telephone number, fax number and email address. Parties must use the document naming conventions and document submission standards outlined in the RESS Document Guideline found at https://www.oeb.ca/industry. If the web portal is not available parties may email their documents to the address below. Those who do not have computer access are required to file seven paper copies.

All communications should be directed to the attention of the Board Secretary at the address below, and be received no later than 4:45 p.m. on the required date.

With respect to distribution lists for all electronic correspondence and materials related to this proceeding, parties must include the Case Manager, Zora Crnojacki at Zora.Crnojacki@oeb.ca and Board Counsel, Michael Millar at Michael.Millar@oeb.ca.

ADDRESS

Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 27th Floor
Toronto ON M4P 1E4
Attention: Board Secretary

E-mail: boardsec@oeb.ca
Tel: 1-888-632-6273 (Toll free)
Fax: 416-440-7656

DATED at Toronto, January 30, 2020

ONTARIO ENERGY BOARD

Original signed by

Christine E. Long
Board Secretary

Appendix A

Procedural Order No. 1

Enbridge Gas Inc.

EB-2019-0159

Draft Issues List-Section 90 OEB Act, Leave to Construct Application

January 30, 2020

Enbridge Gas Inc.
EB-2019-0159
Draft Issues List-Section 90 OEB Act
Leave to Construct Application

1. Is the proposed Project needed? Considerations may include but are not limited to natural gas demand, reliability of service, security, flexibility and diversity of natural gas supply, and operational risk as well as the OEB's statutory objectives.

2. What are the alternatives to the proposed Project that would also involve building a new pipeline? Are any of these alternatives preferable to the proposed Project?

3. What are the alternatives to the proposed Project that would not involve building a new pipeline? Are any of these alternatives preferable to the proposed Project?

4. Do the Project's economics meet the OEB's economic tests as outlined in the Filing Guidelines on the Economic Tests for Transmission Pipeline Applications, dated February 21, 2013?

5. Are the costs of the Project and rate impacts to customers reasonable and acceptable?

6. Does the Project's environmental assessment meet the OEB Environmental Guidelines for Hydrocarbon Pipelines?

7. Are the forms of landowner agreements filed pursuant to the application under section 97 of the OEB Act appropriate? Are there any outstanding landowner matters for the proposed Project's routing and construction? For greater clarity, landowners include parties from whom permits, crossing agreements and other approvals are required.

8. Is the proposed Project designed in accordance with current technical and safety requirements?

9. Has there been adequate consultation with affected Indigenous communities?

10. If the Board approves the proposed Project, what conditions, if any, are appropriate?

Authority: Item ___, General Issues Committee Report 20-008 (PED19142(a))
CM: April 1, 2020
Ward: 3

Bill No.

CITY OF HAMILTON

BY-LAW NO.

BEING A BY-LAW TO EXPROPRIATE 70 BRANT STREET, HAMILTON, ONTARIO, LEGALLY DESCRIBED AS, FIRSTLY, PART OF LOTS 9 AND 10 AND PART OF THE WATER LOT IN SHERMAN INLET, CONCESSION 1, BARTON AND PART OF RESERVES 1 AND 2, PLAN 32, DESIGNATED AS PART 1 ON 62R-18342, BEING ALL OF PIN 17193-0045 (LT), SECONDLY, PART OF LOT 219 AND PART OF RESERVES 1 AND 2, PLAN 32, DESIGNATED AS PART 2 ON 62R-18342, BEING ALL OF PIN 17193-0048 (LT), AND THIRDLY, PART OF THE WATER LOT IN SHERMAN INLET, CONCESSION 1, BARTON, DESIGNATED AS PART 3 ON 62R-18342, BEING ALL OF PIN 17193-0049 (LT), FOR MUNICIPAL PURPOSES ASSOCIATED WITH THE ACQUISITION, DEVELOPMENT AND CONSTRUCTION OF THE HAMILTON TRANSIT BUS MAINTENANCE AND STORAGE FACILITY, AND ALL ANCILLARY WORKS REQUIRED TO COMPLETE THE FOREGOING.

WHEREAS Section 6 of the *Municipal Act*, 2001, S.O. 2001, c. 25 as amended empowers a municipality to expropriate land in accordance with the *Expropriations Act*.

AND WHEREAS the City of Hamilton, as expropriating authority, made application to the Council of the City of Hamilton on the 11th day of October, 2019 for approval to expropriate 70 Barton Street, Hamilton, legally described as, Firstly, Part of Lots 9 and 10 and Part of the Water Lot in Sherman Inlet, Concession 1, Barton and Part of Reserves 1 and 2, Plan 32, designated as Part 1 on 62R-18342, being all of PIN 17193-0045 (LT), Secondly, Part of Lot 219 and Part of Reserves 1 and 2, Plan 32, designated as Part 2 on 62R-18342, being all of PIN 17193-0048 (LT), and Thirdly, Part of the Water Lot in Sherman Inlet, Concession 1, Barton, designated as Part 3 on 62R-18342, being all of PIN 17193-0049 (LT) (Collectively, the “Lands”) in accordance with the *Expropriations Act*, R.S.O. 1990, Chapter E.26 (the “Act”);

AND WHEREAS the City of Hamilton as expropriating authority did serve a Notice of the said Application for Approval to Expropriate upon each registered owner (as defined in the Act) of the Lands and did publish a Notice of the Application for Approval to Expropriate in the Hamilton Spectator; a newspaper having general circulation in the City of Hamilton, in accordance with the *Act*;

AND WHEREAS a request for an Inquiry Hearing was made by Revolution Environmental Solutions LP doing business as Terrapure Environmental which request

was withdrawn on February 6, 2020 and accordingly no Inquiry Hearing has been held;

AND WHEREAS the Council of the City of Hamilton, as approving authority deems it expedient to grant the Application to Expropriate the Lands.

NOW THEREFORE THE COUNCIL OF THE CITY OF HAMILTON ENACTS AS FOLLOWS:

1. That, as approving authority under the *Expropriations Act*, the said Application for Approval to Expropriate the Lands (forming part of this By-law), made by the City of Hamilton as expropriating authority, be and the same is hereby granted and 70 Barton Street, Hamilton, legally described as, Firstly, Part of Lots 9 and 10 and Part of the Water Lot in Sherman Inlet, Concession 1, Barton and Part of Reserves 1 and 2, Plan 32, designated as Part 1 on 62R-18342, being all of PIN 17193-0045 (LT), Secondly, Part of Lot 219 and Part of Reserves 1 and 2, Plan 32, designated as Part 2 on 62R-18342, being all of PIN 17193-0048 (LT), and Thirdly, Part of the Water Lot in Sherman Inlet, Concession 1, Barton, designated as Part 3 on 62R-18342, being all of PIN 17193-0049 (LT) is hereby expropriated for municipal purposes associated with the acquisition, development and construction of the Hamilton transit bus maintenance and storage facility, and all ancillary works required to complete the foregoing.

2. That the Mayor, Clerk and the proper officials of the City of Hamilton are hereby authorized and directed to do all things necessary to implement and give effect to the provisions of this By-law and this authority shall include the taking of all necessary proceedings to enter and to take possession of the lands hereby expropriated.

PASSED this 1st day of April, 2020.

F. Eisenberger
Mayor

A. Holland
City Clerk

10.3

Hamilton

INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	March 23, 2020
SUBJECT/REPORT NO:	2019 Annual Drinking Water Report (PW20020) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Cari Vanderperk (905) 546-2424 Ext. 3250
SUBMITTED BY: **SIGNATURE:**	Andrew Grice Director, Hamilton Water Public Works Department 

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 (5) Drinking Water Systems (DWS) (as identified below).

Drinking Water System
Hamilton DWS (Woodward and Fifty Road Subsystems)
Freelton DWS
Greensville DWS
Carlisle DWS
Lynden DWS

This Information Report provides a summary of annual reporting requirements and highlights key information for the:

- *Safe Drinking Water Act, Ontario Regulation 170/03, Schedule 22*, Summary Report for Municipalities;
- *Safe Drinking Water Act, Ontario Regulation 170/03, Section 11*, Drinking Water Reports, and
- Drinking Water Quality Management System (DWQMS) - Summary Report.

More detailed information is provided in Appendices "A" and "B" to Report PW20020.

Summary Report for Municipalities (Appendix "A" to Report PW20020):

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 2019 summary report has been prepared in accordance with the requirements as defined in Schedule 22, for each of the City of Hamilton's five (5) DWSs.

There were no Provincial Officer's Orders issued in relation to any of the City's drinking water systems. All Adverse Test Results and Reportable Incidents were reported to the Ontario Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre (SAC) and Public Health Services (PHS) and are summarized in Appendix "A" to Report PW20020. All water taking quantities and flow rates were within approved rated capacities and provincial water taking limits. Data related to the water quantities, flow rates and monthly average and maximum daily flows (in comparison to approved flow rates) for the five (5) DWSs is also provided in the attached Appendix "A" to Report PW20020.

The Drinking Water and Environmental Compliance Division of the MECP conducts regular and rigorous inspections of our Drinking Water Systems. The 2017 to 2019 inspection ratings are as follows:

Drinking Water System	April 1, 2017 to March 31, 2018 Inspection Rating	April 1, 2018 to March 31, 2019 Inspection Rating	April 1, 2019 to March 31, 2020 Inspection Rating
Hamilton DWS - Woodward	96.32%	94.85%	Pending in 2020
Hamilton DWS - Fifty Road	100%	100%	99.10%

Drinking Water System	April 1, 2017 to March 31, 2018 Inspection Rating	April 1, 2018 to March 31, 2019 Inspection Rating	April 1, 2019 to March 31, 2020 Inspection Rating
Freelton	100%	96.74%	100%
Greensville	100%	99.36%	100%
Carlisle	100%	94.40%	100%
Lynden	100%	100%	99.40%

2019 Annual Drinking Water Quality Reports (Appendix "A" to Report PW20020):

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 no later than February 28th of each year. The 2019 reports have been prepared in accordance with the requirements as defined in Section 11, for each of the City of Hamilton's DWSs and form part of Appendix "A" to Report PW20020. The reports are available on the City of Hamilton website and upon request, free of charge.

Drinking Water Quality Management System (DWQMS) - Summary Report (Appendix "B" to Report PW20020):

The submission of the DWQMS Summary Report satisfies the 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 exceeds these requirements and includes additional information relating to other milestones of the DWQMS.

Risk Assessment and Review and Provision of Infrastructure:

On an annual basis, Hamilton Water (HW) undertakes formal risk assessment and infrastructure review processes. While these processes satisfy the requirements of the DWQMS Standard, more importantly they ensure that any potential hazards are identified, required control measures are in place and that risks to our drinking water system are considered as part of an overall determination of infrastructure adequacy.

The 2019 Risk Assessment and Review and Provision of Infrastructure processes concluded that although vertical and horizontal infrastructure is generally found to be adequate and available when needed, we are not keeping up with required renewals and replacements of our aging infrastructure. This results in an increased demand on maintenance staff and resources as assets remain in operation beyond their intended life cycle. It was also found that there are appropriate control measures and action plans in place for the significant risks identified.

DWQMS Audits:

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

In 2019, QMI-SAI Global conducted an off-site systems audit. There were no non-conformances or opportunities for improvement found.

The internal DWQMS audits conducted in 2019 focused on the following:

- Corrosion Control Process – July 5, 2019
- Customer Service & Community Outreach and Essential Supplier, The City of Hamilton Customer Contact Centre – August 19, 2019
- Planning & Economic Development Watermain Break Process/Transfer of As-Built Drawings Process – October 23 and 25, 2019
- Audit of Remaining DWQMS Elements – November 8 and 25, 2019

The highest risk finding of all the audits in 2019 is related to the transferring of As-Built Drawings from Planning & Economic Development to Customer Service & Community Outreach. This process is receiving attention from both Hamilton Water and Planning & Economic Development.

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.

In 2020, the plan is to conduct a number of process audits throughout the year. The 2020 Audit Plan will be reviewed and approved by the HW Senior Management Team prior to implementation.

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 2019, the DWQMS Top Management Review (TMR) was held on September 23. 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 DWS's 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) returning on the new Council had previously received Standard of Care training.

Standard of Care training was provided for the new members of Council in February to April 2019.

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. The next revision of the Financial Plan is not due until 2023.

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.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" - 2019 City of Hamilton Drinking Water Annual Summary and Water Quality Report

Appendix "B" - Drinking Water Quality Management System (DWQMS) - Summary Report

Due to bulk, Appendix "A" to Report PW20020 is not printed in the agenda but is available for viewing in the City Clerk's Office and on-line at www.hamilton.ca.

CITY OF HAMILTON'S DRINKING WATER SYSTEMS

DWQMS SUMMARY REPORT

2019

Safe Drinking Water Act
DWQMS v2.0

Hamilton

DRINKING WATER QUALITY MANAGEMENT SYSTEM POLICY

The City of Hamilton owns, maintains and operates various drinking water systems. The City is committed to:

S *Safe, high quality, consistent supply of drinking water*

A *Always improving the Drinking Water Quality Management System*

F *Following and complying with applicable legislation*

E *Effective and open communication with the community concerning matters of drinking water quality*

BCOS
BEYOND COMPLIANCE OPERATING SYSTEM

Hamilton

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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.

Drinking Water System
Hamilton DWS (Woodward and Fifty Road Subsystems)
Freelton DWS
Greensville DWS
Carlisle DWS
Lynden DWS

The purpose of this DWQMS Summary Report is to keep the Owner of the City's DWSs informed about the ongoing performance of the DWQMS, including major milestones achieved in 2019. 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 2019.

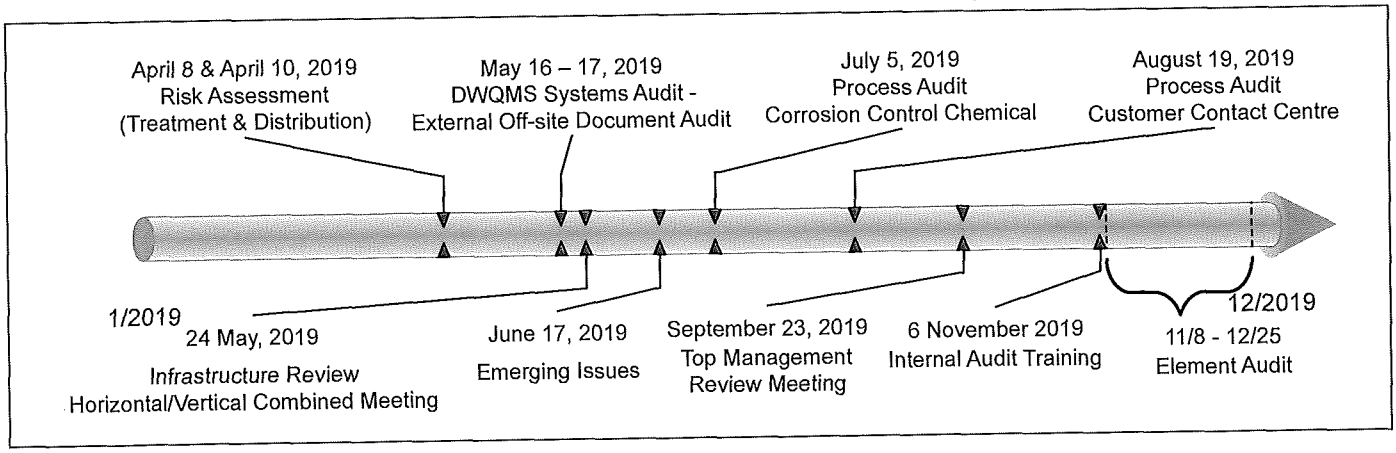
1.3 Overview of Key Milestones

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

- 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,
- February to Arpil 2019 - Standard of Care Training for new Councillors and Legal Counsel,
- May 2019 – Received renewed Municipal Drinking Water System Licences and Permits for each of the City's five DWSs,
- May 2019 – re-endorsement of the DWQMS Operational Plan by Owners,
- May 2019 – External Systems Audit (off-site document review).

Figure 7-1 illustrates key DWQMS milestones which occurred in 2019:

Figure 7-1: Project Pipeline - 2019



1.4 DWQMS Operational Summary

Figure 7-2 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.

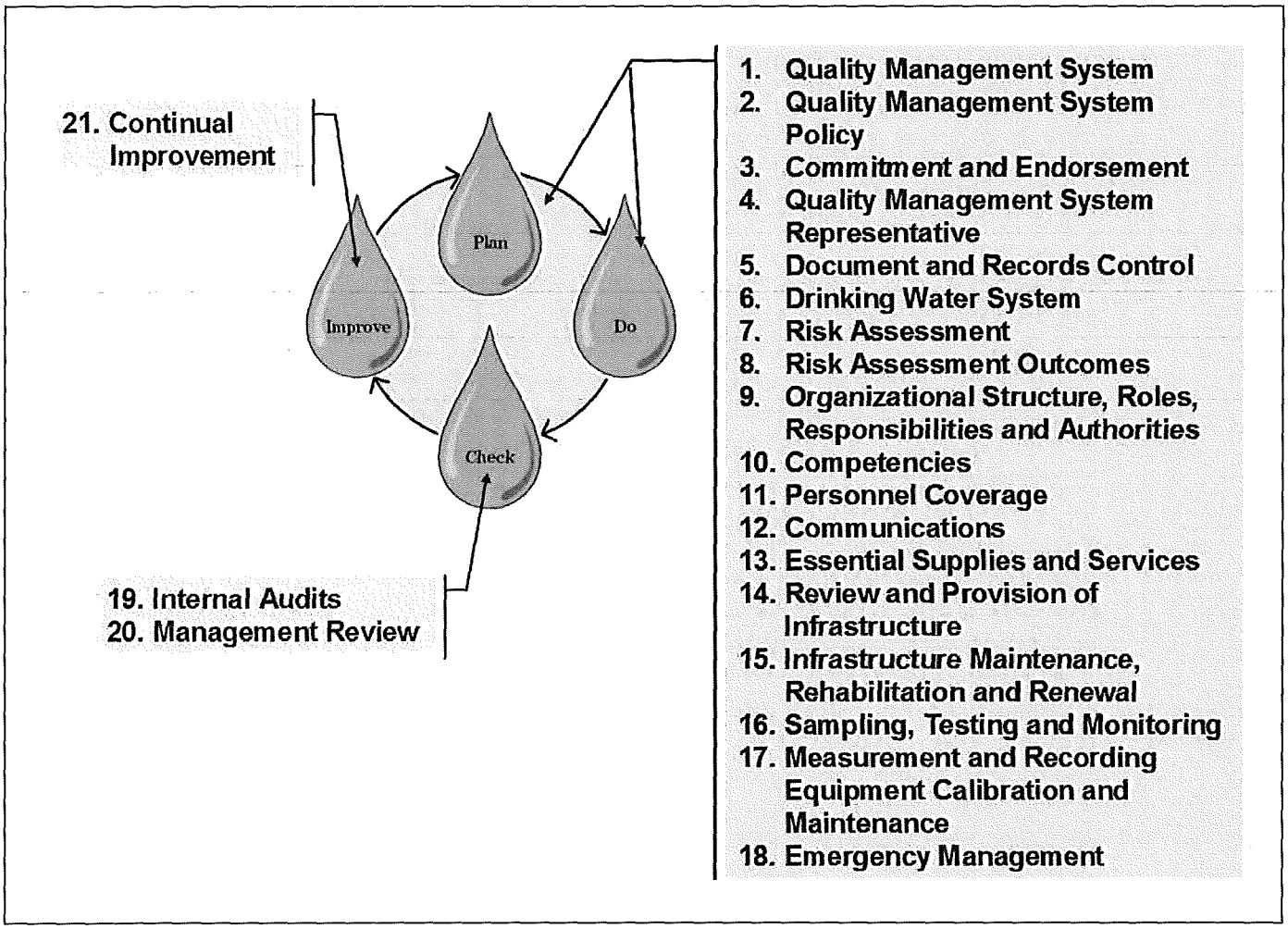
The following sections of this report include an overview of milestones related to the following elements of the DWQMS:

- 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

DWS Licences & Permits Approvals

In 2019, the Municipal Drinking Water Licences and Permits for each of our Drinking Water Systems were renewed. In addition, there were 13 approvals for extensions to the distribution system and 5 approvals for like for like infrastructure replacements (e.g. pumps).

Figure 7-2: DWQMS Standard Elements



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 2019.

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 2019 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 2019 Risk Assessment:

- Capital Delivery - Water Projects Recently completed and upcoming
- 2019 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)
- 2019 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 2020, a full review of the Risk Assessment process and outcomes will be completed in accordance with the Standard. Hamilton Water staff continue to work to integrate the DWQMS Risk Assessment with the City's Asset Management risk assessment in accordance with Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure that came into effect on January 1, 2018. Full integration and replacement of the DWQMS Risk Assessment and Infrastructure Review process will not be completed for a number of years.

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 (2019) 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 (P&ED) to conduct the review of water infrastructure. A Coordination Meeting was held in May 2019 to discuss vertical and horizontal infrastructure and the results were presented to management in June 2019.
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:

Table 7-1: Infrastructure Review Data

Infrastructure Type	Input Data
Horizontal Infrastructure – Maintenance	→ Watermain Repairs Hydrant and Valve Inspections Valve and Meter Replacement Substandard Service Replacement Preventative Maintenance Emergency Repairs Customer Complaints
Horizontal Infrastructure - Large Capital	→ 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	→ Preventative Maintenance Program Status Breakdowns and Emergency Repairs Capital Upgrades - Coordination and Scheduling Life Cycle Best Practices Critical Projects
Vertical Infrastructure – Large Capital	→ 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 Meeting were documented in meeting minutes for the 2019 review. Attendees at the Infrastructure Review meeting utilized the outcomes from the meeting as input to capital planning and budget preparation. Hamilton Water discussed the 2019 Infrastructure Review at the Top Management Review meeting on September 23, 2019.

The 2019 Infrastructure Review process concluded that our vertical and horizontal infrastructure is generally found to be adequate and available when needed. It was also found, however, that we are not keeping up with required renewals and replacements of our aging infrastructure. This results in an increased demand on maintenance staff and resources as assets remain in operation beyond their intended life cycle.

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 2019, QMI-SAI Global conducted an off-site systems 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 internal DWQMS audits conducted in 2019 focused on the following:

- Corrosion Control Process – July 5, 2019
- CS&CO and Essential Supplier, The City of Hamilton Customer Contact Centre – August 19, 2019
- P&ED Watermain Break Process/Transfer of As-Built Drawings Process – October 23 and 25, 2019
- Audit of Remaining DWQMS Elements – November 8 and 25, 2019

The results of the annual DWQMS Internal Audits conducted throughout 2019 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 risk finding of all audits in 2019 is related to the transferring of As-Built Drawings from P&ED to Customer Service & Community Outreach (CS&CO). This process is receiving attention from both HW and P&ED.

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.

2020 DWQMS Audit Plan

The Compliance Support Group of the Compliance & Regulations Section will be developing an Audit Plan for the 2020 DWQMS internal audits. It is proposed that the plan will include a number of process audits throughout 2020. 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:

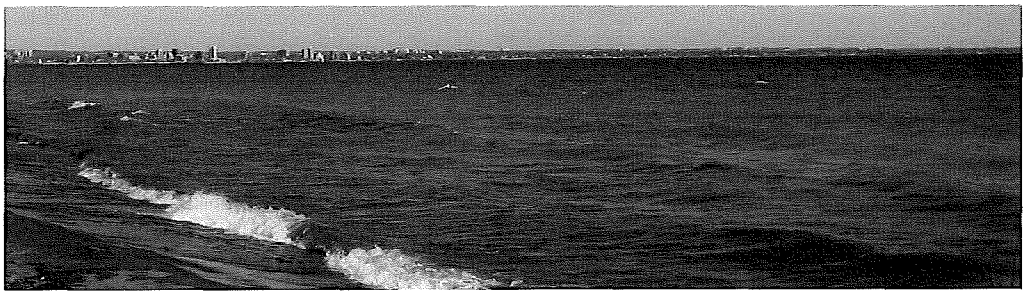
- Consideration of the results of the management review and identifying deficiencies and action items to address deficiencies,
- Provide a record of decisions and actions items including responsibilities and timelines,
- Report the results of the management review to the Owner.

In 2019, the DWQMS Top Management Review (TMR) was held on September 23rd. 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.

Table 7-2: Management Review Action Items

No.	Summary of Action Items	Status
1	It was confirmed at the Fall 2019 Municipal Water and Wastewater Regulatory Committee (MWWRC) meeting that other municipalities do not distinguish between confirmed and unconfirmed AWQIs.	Closed
2	Sent the Public Works General Manager the link to the public website that was setup in protest to the Ancaster Water Tower.	Closed
3	The Public Works General Manager suggested that other options be explored to provide redundancy for the Greensville DWS.	Open
4	The Public Works General Manager met with the local MECP Director in November to discuss enhancements to the working relationship between HW and the MECP.	Closed
5	Meeting held with other Ontario municipalities to discuss contracted utility locate programs.	Closed



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. The next revision of the Financial Plan will be due in 2023.

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 2020 include the following:

Month of 2020	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 2020	→ 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

DRINKING WATER SYSTEMS ANNUAL SUMMARY AND WATER QUALITY REPORT

2019

Ontario Regulation 170/03
Section 11 & Schedule 22

Hamilton

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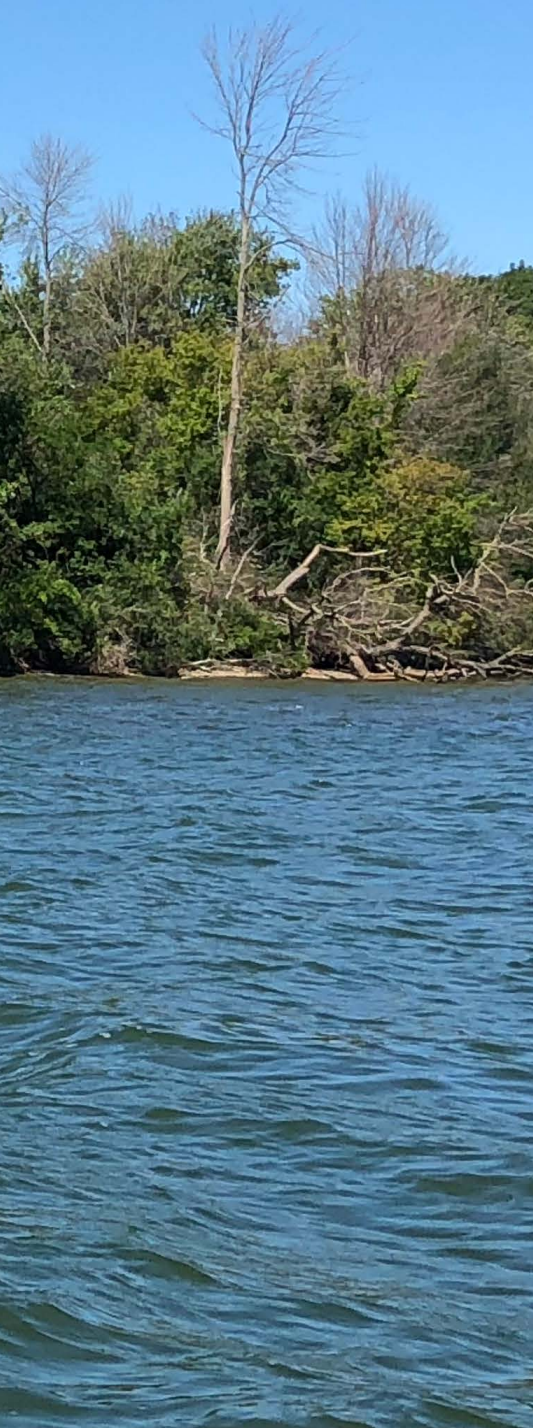

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INTRODUCTION

A key priority of the City of Hamilton is to ensure the safe, high quality, consistent supply of drinking water to our residents. This report for municipalities has been prepared in accordance with the Safe Drinking Water Act, Ontario Regulation, 170/03, Section 11 and Schedule 22 for the 2019 reporting period. The City of Hamilton is the Owner of the following five Drinking Water Systems (DWS):

Drinking Water System	Drinking Water System Number	Municipal Drinking Water Licence Number	Drinking Water Works Permit Number	Permit to Take Water Number
Hamilton DWS Woodward	220003118	005-101	005-201	2437-BCLNEJ
Hamilton DWS Fifty Road	260069173	005-101	005-201	N/A
Freelton DWS	220004117	005-102	005-202	4650-BB2HXG (FDF01 & FDF03)
Greensville DWS	220004126	005-103	005-203	2476-9F5KM6 (FDG01)
Carlisle DWS	220004108	005-104	005-204	2373-8F7MMJ (FDC01 & FDC02)
				8228-AJZK9H (FDC03R)
				4207-AJZJ4L (FDC05)
Lynden DWS	250001830	005-105	005-205	0634-ASERU8 (FDL01 & FDL03)

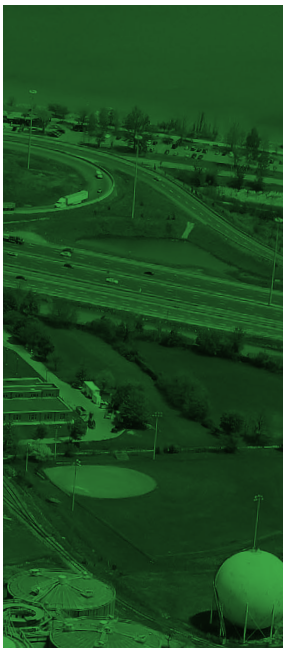
There were no Provincial Officer's Orders issued with regards to drinking water. All Adverse Water Quality Incidents were reported to the Ontario Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre (SAC) and Public Health Services (PHS) and are provided in the report. All water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

The MECP Inspection Calendar Year is from April 1st to March 31st. The MECP 2017 to 2019 inspection ratings are as follows.

Drinking Water System	2017 - 2018 Inspection Rating	2018 - 2019 Inspection Rating	2019 - 2020 Inspection Rating
Hamilton DWS - Woodward	96.32%	94.85%	Pending in 2020
Hamilton DWS - Fifty Road	100%	100%	99.10%
Freelton	100%	96.74%	100%
Greensville	100%	99.36%	100%
Carlisle	100%	94.40%	100%
Lynden	100%	100%	99.40%

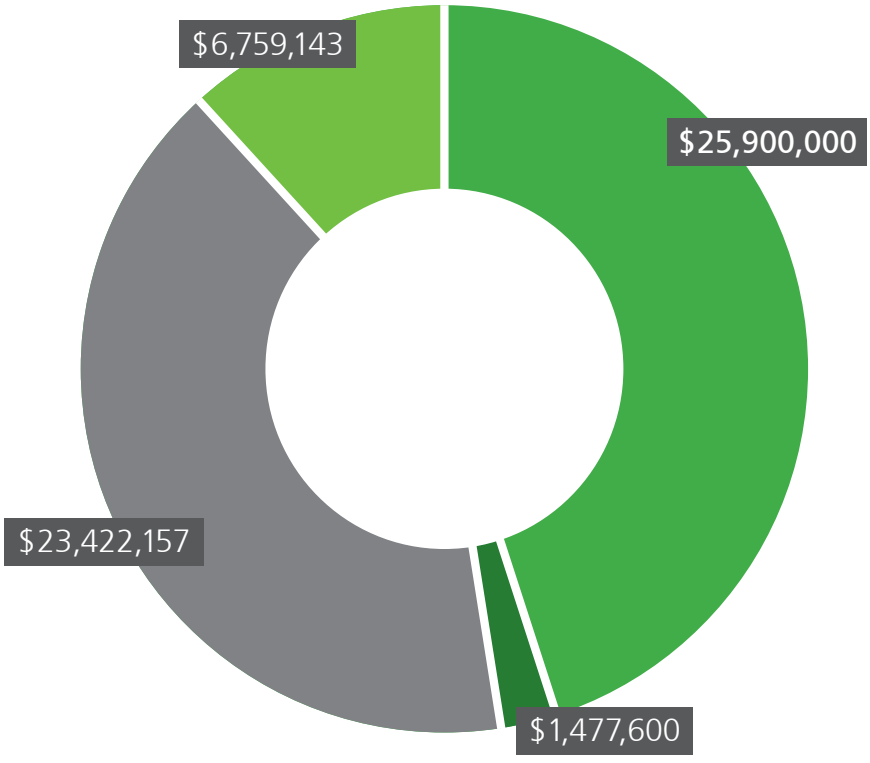
Annual Reports

The Drinking Water Annual Report required under Ontario Regulation 170/03 Section 11 and Schedule 22 is available to the public at no charge at www.hamilton.ca/waterquality and is available for inspection at 700 Woodward Avenue, Administration Building, Compliance Support Group.



Summay of monetary expenses incurred in 2019

In 2019, significant expenses were incurred for installing, repairing and replacing required equipment. The following expenses were incurred to complete repairs, maintenance and upgrades to the Drinking Water Systems within the City of Hamilton.



- Total DWS - New Development - Expansion of DWS (horizontal and vertical assests)
- Total DWS - Distribution Repair, Rehabilitation and Replacement (horizontal assests)
- Total DWS - Maintenance and Repairs (vertical assests)
- Total DWS - Water Capital Upgrade Projects

WOODWARD AVENUE DRINKING WATER SUBSYSTEM WATER QUALITY ANNUAL REPORT

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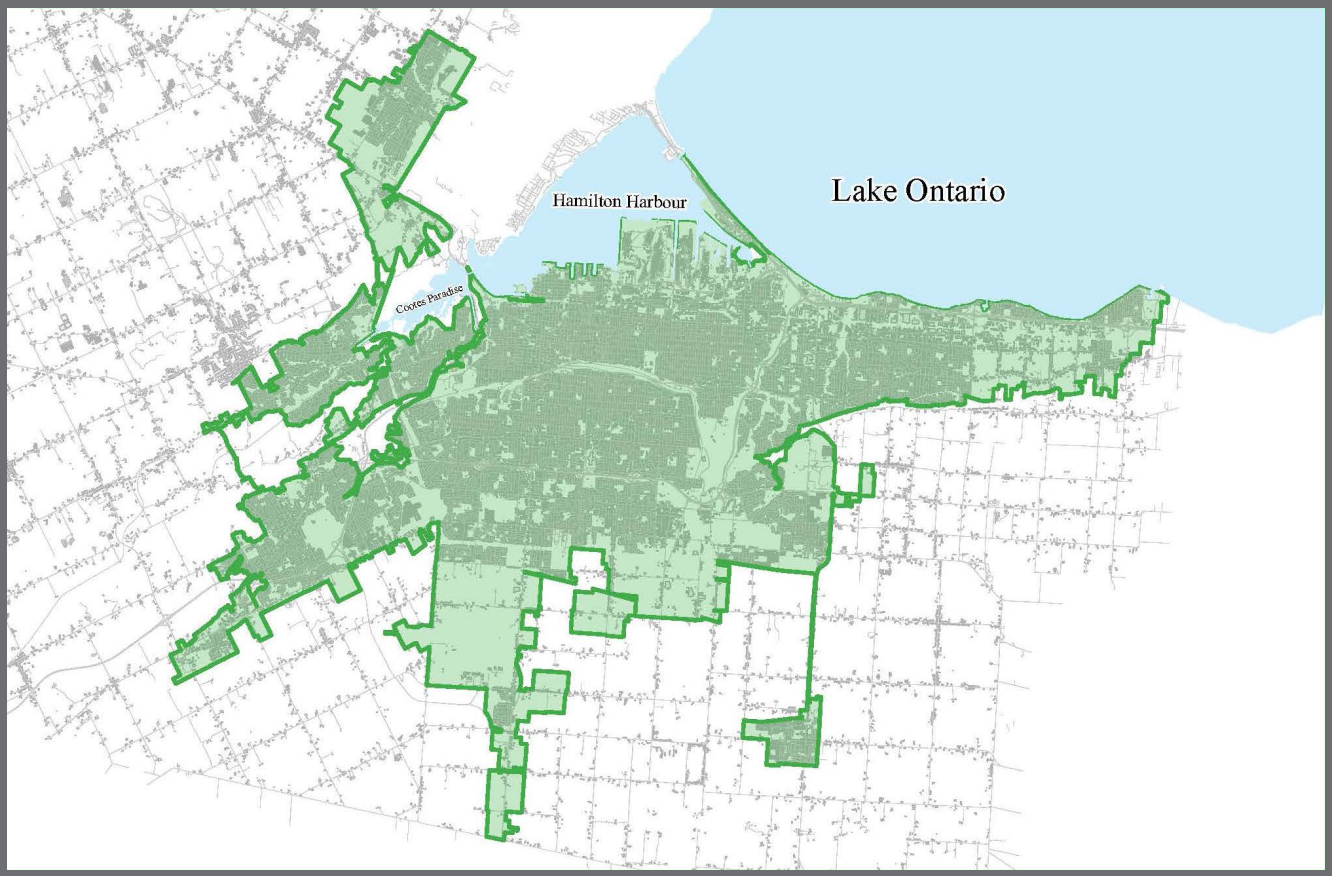

WOODWARD DRINKING WATER SUBSYSTEM

BCOS
BEYOND COMPLIANCE OPERATING SYSTEM

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre

General Information

The Woodward Drinking Water Subsystem is a large municipal residental system that 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 536,917. In addition, the treatment system provides treated water to parts of Haldimand County (Caledonia, York and Cayuga) and parts of Halton Region.

The Woodward Water 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 & sedimentation - Polyaluminum chloride is added to coagulate suspended solids that settle out in sedimentation tanks.
- Filtration - The settled water is filtered using dual media filters of Sand/Granular Activated Carbon (GAC) which reduces 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.
- Highlift pumps push the water from the Woodward Water Treatment Facility to the distribution system.

Distribution:

The Woodward Water Distribution System is comprised of 22 pumping stations, 11 reservoirs, 5 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 6 days per week; distribution water is sampled and analyzed 5 days per week. In addition, chlorine residual in the distribution system is analyzed daily.

Corrosion Control Program (CCP):

On November 8, 2018, the addition of orthophosphate commenced, including a regulatory post-implementation sampling and monitoring plan to monitor the progress and effectiveness of the program for lead control.

Since implementation of the program, two completed rounds of the Legislated Community Lead Sampling Program, as required by Schedule 15.1 of Ontario Regulation, 170/03 have taken place in the Woodward DWS. The results illustrate a reduction in the range of lead values observed at the tap as well as an overall decreasing trend in the percentage of samples observed to be above the Maximum Acceptable Concentration (MAC) of 10 µg/L, when compared with the sampling rounds from 2008 to 2009, that preceded the implementation of the CCP. Additionally, three Lead Pipe Loops were installed in the Woodward DWSS as an additional tool to monitor the effectiveness of the program, which have shown a decreasing trend in lead levels. The COH also collects customer feedback and water quality complaints to ensure customer safety and satisfaction and since the implementation of the program, there have been no water quality complaints related to the CCP.

The initial post-implementation sampling and monitoring plan results have shown a promising reduction in the levels of lead and other metals within the system. An annual evaluation report was submitted to the MECP in March 2019 assessing the overall effectiveness of the CCP measures in the program. November 2019 marked the one-year mark since the implementation of the program. Based on comparisons of other water utilities that have implemented a phosphate-based treatment approach and the size of the Woodward DWSS distribution system, it is estimated that it will take approximately two years to see the full effects of the program.

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, 2019 to December 31, 2019

Provision of Drinking Water to Other Municipalities

The following is a list of municipal drinking water systems which receive drinking water from the Woodward Drinking Water Subsystem:

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

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom the City provides drinking water.

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

Water Treatment Chemicals Used During This Reporting Period

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

Breakdown of Significant Monetary Expenses

The following table highlights the significant expenses that were incurred for installing, repairing and replacing required equipment in 2019.

Operations, Maintenance and Repairs (horizontal assets) $15,400,000 (City total)
Woodward Water Treatment Plant Process Upgrades $11,243,000
4,513 Metres of Pipe Installed for New Development $6,759,000
Osler Road HD011 Water Pumping Station Upgrades $1,439,000
Security - Water Pumping Station Facilities $905,000
HDR05 Stonechurch / Garth Reservoir Upgrades $734,000
Kenilworth Pumping Station - HD005 Upgrades $1,864,000
6 Kilometres of Pipes Rehabilitated $5,500,000
3.7 Kilometres of Pipes Replaced $5,000,000
Greenhill Pumping Station HD04B & HD05A Upgrades $668,000
Water Treatment Plant - Corrosion Control $663,000
Highlift Water Main Repairs - $516,000
Check Valve Replacement Projects $180,500

Adverse Test Results and Reportable Incidents

The following table outlines 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 (y-m-d)	Location of Adverse	Adverse Water Quality Incident	Resolution
2019-05-28	Sir Allan MacNab Recreation Centre, 145 Magnolia Drive	Total Coliforms = NDOGN CFU/100 mL E. coli = NDOGN CFU/100 mL (Regulatory requirement is 0 CFU/100mL) NDOGN: overgrowth of background bacteria with NO countable target bacteria	→ The tap at the adverse location was bagged and tagged with a sign indicating "Do Not Drink" as per Public Health. Resampled adverse location, one upstream and one downstream hydrant - 2 sets of samples 24 to 48 hours apart. All results passed. The bag and sign were removed on May 30th. The adverse was not confirmed.
2019-07-19	Hydrant HB51H003, 1979 Brampton Street	Lead = 0.0444 mg/L (Regulatory requirement is ≤ 0.010 mg/L)	→ Resampled adverse location. Result passed. The adverse was not confirmed.
2019-09-03	Highlift, 700 Woodward Ave.	Total Coliforms = 2 CFU/100mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location and two downstream locations. All results passed. The adverse was not confirmed.
2019-09-25	SH5 Pumping Station HC005, 592 Old Dundas Road	Total Chlorine = 0.22 mg/L Combined Chlorine = 0.20 mg/L Free Chlorine = 0.02 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. On Sept 26th at 17:40, chlorine levels were restored as follows: Total Chlorine: 1.10 mg/L, Combined Chlorine: 1.10 mg/L, Free Chlorine: <0.02 mg/L.
2019-09-27	Hydrant DN12H020, Governors Road	Total Chlorine = 0.11 mg/L Combined Chlorine = 0.09 mg/L Free Chlorine = 0.02 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. On Sept 27th at 01:19, chlorine levels were restored as follows: Total Chlorine: 0.42 mg/L, Combined Chlorine: 0.37 mg/L, Free Chlorine: 0.05 mg/L.

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Notification Date (y-m-d)	Location of Adverse	Adverse Water Quality Incident	Resolution
2019-12-20	Stoney Creek Recreation Centre, 45 King Street W.	Total Coliforms = 73 CFU/mL (Regulatory requirement is 0 CFU/100mL)	→ The tap at the adverse location was bagged and tagged with a sign indicating "Do Not Drink" as per Public Health. Resampled adverse location, one upstream and one downstream hydrant. All results passed. The bag and sign were removed on December 21st. The adverse was not confirmed.
2019-12-23	City of Hamilton Administration Building, 700 Woodward Ave.	Total Chlorine = 3.10 mg/L Combined Chlorine = 3.06 mg/L Free Chlorine = 0.04 mg/L (Regulatory requirement is maximum combined chlorine of 3.0mg/L)	→ Adverse location was flushed and re-tested. On Dec 23rd at 14:50, chlorine levels were restored as follows: Total Chlorine: 2.70 mg/L, Combined Chlorine: 2.63 mg/L, Free Chlorine: 0.07 mg/L.

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 2019 calendar year (Inspection date: January 17, 2019):

#	Finding Type	Finding	Status
1	Self-declared Non-Compliance (#2166) also included as a Non-compliance in the Inspection Report	OIT certified Operator operated as an Operator-In-Charge (OIC) on two separate occasions in the Woodward Water Distribution System in January 2019.	→ Actions complete
2	Non-Compliance	Chloride and Sulphate monthly samples were missed in December 2018 as required per the Licence. The Licence requires Studies to be completed under Section 5.0 of Schedule C and sampling as per Table 8 - Monitoring the Effectiveness of Corrosion Control Measures to commence after commissioning and commencement of orthophosphate addition which started in November 2018.	→ Actions complete
3	Non-Compliance	Operator logbooks were not available for at least five (5) years.	→ Actions complete
4	Recommendation	It is recommended that the log calculator be reviewed by a process engineer with experience in drinking water treatment (report signed and stamped) to use for demonstrating primary disinfection as per the drinking water Licence and Procedure for Disinfection.	→ Actions in Process
5	Recommendation	It is recommended that the City continue to review the Operations Manuals and update as needed, due to construction upgrades, to ensure that they contain plans, drawings and process descriptions to meet the requirements of Section 28 of O.Reg. 128 and meet the requirements of the License & Permit (i.e. CT requirements as per RVA report, AWWA C653 etc.).	→ Actions complete

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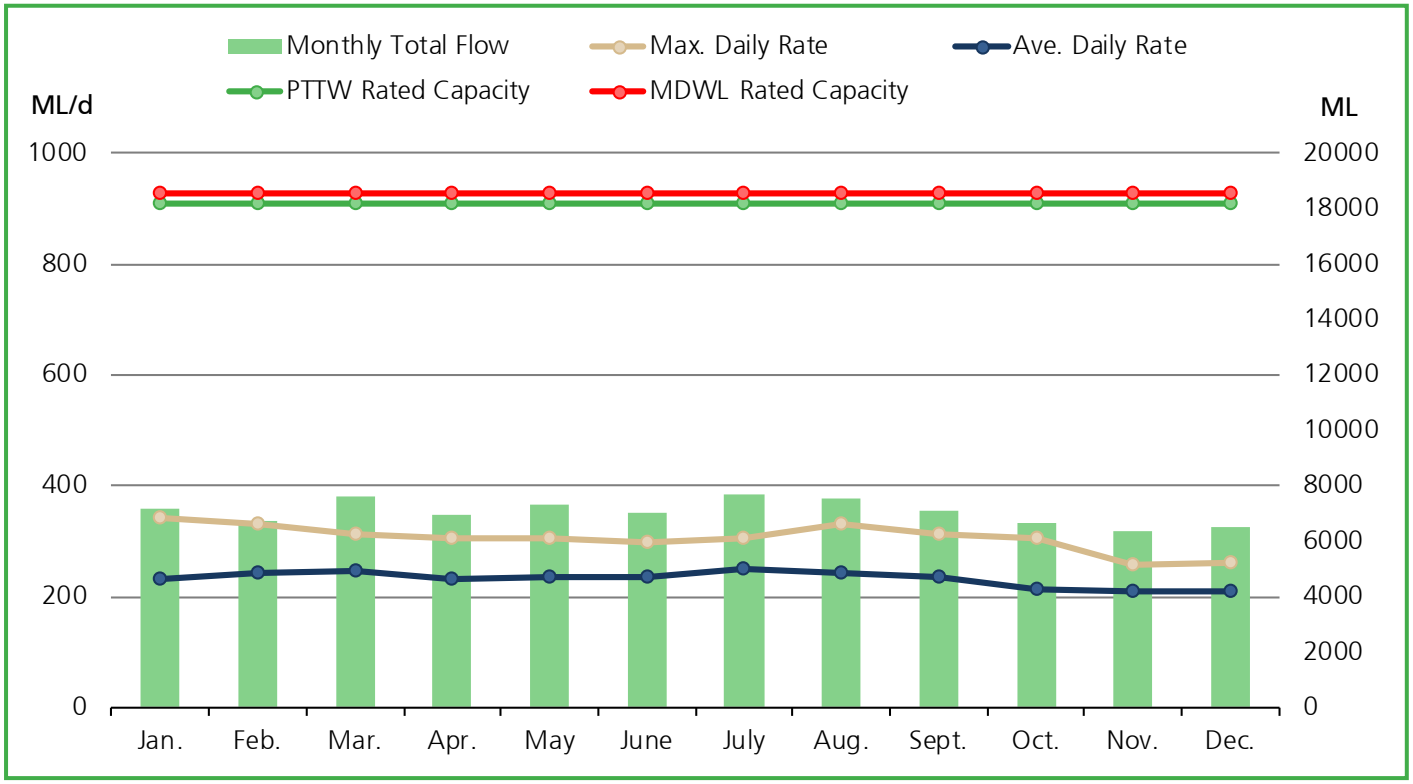
#	Finding Type	Finding	Status
6	Recommendation	The Ministry recommends, regardless of security measures in place, daily visits to a facility's structures to check system integrity.	→ Actions complete
7	Recommendation	Continue to inventory and assess overflow and vent screens to ensure they are present, are of correct mesh size and in good condition to ensure water storage facilities are secure from bug and animals and other potential sources of contamination. Submit the results of an out station overflow and vent screens inventory condition assessment and any maintenance completed or scheduled by September 30, 2019.	→ Actions complete
8	Recommendation	It is recommended, as discussed, that the City continues to develop a Calibration Report extract from the CMMS work order database or the like, to demonstrate compliance and clearly identify analyzer make, model, location, calibration frequency required by manufacture and frequency of calibration adopted by the City.	→ Actions in Process
9	Recommendation	It is recommended that the Turbidity analyzer work orders be reviewed to 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.	→ Actions complete
10	Recommendation	It is recommended that the housekeeping/maintenance items, identified during the inspection, be addressed as required and reviewed with the Ministry.	→ Actions pending
11	Self-Declared Non-Compliance (#2205)	Vendor Performance Review of a contractor found two occasions where they tapped into the watermain with no Inspector on-site.	→ Actions complete

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 1-1: WOODWARD TREATMENT PLANT - 2019 MONTHLY PRODUCTION (SUMMARY)



MAINTAINED COMPLIANCE

TABLE 1-1: WOODWARD TREATMENT PLANT - 2019 MONTHLY PRODUCTION (SUMMARY)

WOODWARD	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	ML	7,178	6,754	7,618	6,958	7,289	7,044	7,698	7,556	7,108	6,658	6,337	6,534
Average Daily Rate	ML/d	232	241	246	232	235	235	248	244	237	215	211	211
Maximum Daily Rate	ML/d	343	332	313	304	306	298	306	332	314	305	258	262
PTTW Daily Rated Capacity	ML/d	909	909	909	909	909	909	909	909	909	909	909	909
MDWL Daily Rated Capacity	ML/d	926	926	926	926	926	926	926	926	926	926	926	926

WATER QUALITY DATA

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	53	0 to 70	0 to 450	N/A	N/A
TREATED	601	0	0 to 2	351	0 to 83
DISTRIBUTION	1,859	0	0 to 73	1,170	0 to 1,010

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

NOTE: If results are obtained from continuous monitors, then 8,760 is reported as the number of samples.

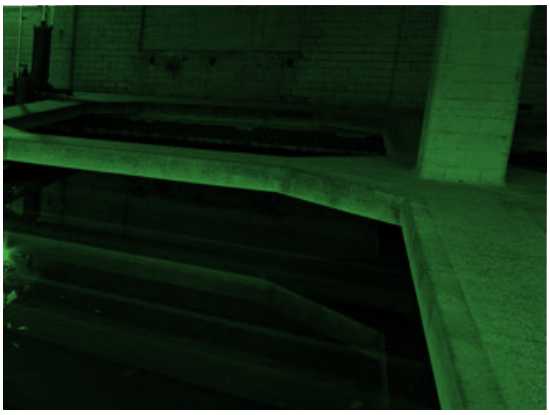
PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) to (MAX #)	UNIT OF MEASURE
TURBIDITY - TREATED – FILTER 1	8,760	0.02 – 0.42	NTU
TURBIDITY - TREATED – FILTER 2	8,760	0.02 – 0.15	NTU
TURBIDITY - TREATED – FILTER 3	8,760	0.02 – 0.25	NTU
TURBIDITY - TREATED – FILTER 4	8,760	0.02 – 0.14	NTU
TURBIDITY - TREATED – FILTER 5	8,760	0.02 – 0.11	NTU
TURBIDITY - TREATED – FILTER 6	8,760	0.02 – 0.33	NTU
TURBIDITY - TREATED – FILTER 7	n/a	O/S	NTU
TURBIDITY - TREATED – FILTER 8	8,760	0.01 – 0.29	NTU
TURBIDITY - TREATED – FILTER 9	8,760	0.02 – 0.29	NTU
TURBIDITY - TREATED – FILTER 10	8,760	0.02 – 0.17	NTU
TURBIDITY - TREATED – FILTER 11	8,760	0.02 – 0.23	NTU
TURBIDITY - TREATED – FILTER 12	8,760	0.02 – 0.32	NTU
TURBIDITY - TREATED – FILTER 13	8,760	0.02 – 0.41	NTU
TURBIDITY - TREATED – FILTER 14	8,760	0.01 – 0.24	NTU
TURBIDITY - TREATED – FILTER 15	8,760	0.02 – 0.39	NTU
TURBIDITY - TREATED – FILTER 16	8,760	0.01 – 0.47	NTU
TURBIDITY - TREATED – FILTER 17	8,760	0.01 – 0.14	NTU
TURBIDITY - TREATED – FILTER 18	8,760	0.02 – 0.18	NTU
TURBIDITY - TREATED – FILTER 19	8,760	0.02 – 0.12	NTU
TURBIDITY - TREATED – FILTER 20	8,760	0.03 – 0.11	NTU
TURBIDITY - TREATED – FILTER 21	8,760	0.02 – 0.20	NTU
TURBIDITY - TREATED – FILTER 22	8,760	0.02 – 0.15	NTU
TURBIDITY - TREATED – FILTER 23	8,760	0.02 – 0.15	NTU
TURBIDITY - TREATED – FILTER 24	8,760	0.02 – 0.10	NTU
COMBINED CHLORINE - TREATED	8,760	1.30 – 2.86	mg/L
FREE CHLORINE - DISTRIBUTION	1,975	<0.02 to 0.22	mg/L
COMBINED CHLORINE - DISTRIBUTION	1,975	0.51 to 3.06	mg/L
FLUORIDE – TREATED (IF THE DWS PROVIDES FLUORIDATION)	8,760	0.20 – 0.87	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	2019-06-04 to 2019-10-29	<0.15	ug/L
RAW - MICROCYSTIN	2019-01-08 to 2019-12-10	<0.15	ug/L
TREATED - CHLORIDE	2019-01-08 to 2019-12-10	29.1 to 42.6	mg/L
TREATED - SULPHATE	2019-01-08 to 2019-12-10	22.9 to 27.0	mg/L
TREATED - O-PHOSPHATE AS PO4	2019-01-01 to 2019-12-31	<0.15 to 2.69	mg/L
TREATED – COLOUR (APPARENT)	2019-02-04 to 2019-11-08	<2	CU
TREATED – LEAD	2019-02-04 to 2019-11-08	<0.0001	mg/L
TREATED - ALKALINITY	2019-04-29 to 2019-10-28	83 to 88	mg/L
TREATED - IRON	2019-02-04 to 2019-11-08	<0.003	mg/L
TREATED – COPPER	2019-02-04 to 2019-11-08	0.0003 to 0.0006	mg/L
TREATED – TOTAL DISSOLVED SOLIDS	2019-02-04 to 2019-11-08	160 to 232	mg/L
PLUMBING – COPPER	2019-01-07 to 2019-09-30	0.0021 to 0.0931	mg/L
DISTRIBUTION - IRON	2019-02-05 to 2019-11-07	<0.003 to 0.102	mg/L
DISTRIBUTION - O-PHOSPHATE AS PO4	2019-01-03 to 2019-12-30	0.22 to 2.42	mg/L
DISTRIBUTION - FIELD TEMPERATURE	2019-01-03 to 2019-12-30	3.1 to 22.0	°C
DISTRIBUTION - FIELD TURBIDITY	2019-01-03 to 2019-12-30	<0.05 to 1.16	NTU

PARAMETER	NUMBER OF GRAB SAMPLES	RESULT VALUE	UNIT OF MEASURE
TEMPERATURE – RAW	8,760	-1.03 – 20.47	°C
PH – TREATED	8,760	6.67 – 7.64	pH
ORTHOPHOSPHATE – TREATED	8,760	0.20 - 7.81	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	2019-04-29 to 2019-10-28	0.0001	mg/L	0
ARSENIC	2019-04-29 to 2019-10-28	0.0006	mg/L	0
BARIUM	2019-04-29 to 2019-10-28	0.0211 to 0.0224	mg/L	0
BORON	2019-04-29 to 2019-10-28	0.021 to 0.023	mg/L	0
CADMIUM	2019-04-29 to 2019-10-28	<0.0001	mg/L	0
CHROMIUM	2019-04-29 to 2019-10-28	0.0001 to 0.0002	mg/L	0
FLUORIDE	2019-04-29 to 2019-10-28	0.47 to 0.49	mg/L	0
MERCURY	2019-04-29 to 2019-10-28	<0.05	mg/L	0
NITRATE AS N	2019-01-22 to 2019-10-28	0.24 to 0.46	mg/L	0
NITRITE AS N	2019-01-22 to 2019-10-28	<0.01	mg/L	0
SELENIUM	2019-04-29 to 2019-10-28	0.0001	mg/L	0
SODIUM	2019-04-29 to 2019-10-28	14.9 to 18.2	mg/L	0
URANIUM	2019-04-29	0.219	ug/L	0

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

LOCATION TYPE	NO. OF POINTS SAMPLED	NO. OF LEAD SAMPLES TAKEN	NO. OF pH SAMPLES TAKEN	NO. OF ALKALINITY 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	10	20	10	0	7.41 to 7.72	N/A	0.0006 to 0.0201	N/A	2
PLUMBING-R	84	168	84	0	6.77 to 7.88	N/A	<0.0001 to 0.0331	N/A	7
DISTRIBUTION	18	18	18	18	7.35 to 7.87	82 to 90	<0.0001 to 0.0444	1	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
		TREATED		
1,1-DICHLOROETHYLENE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
1,2-DICHLOROETHANE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
BENZENE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
CARBON TETRACHLORIDE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
CHLOROBENZENE	2019-04-29 to 2019-10-28	<0.3	ug/L	0
DICHLOROMETHANE	2019-04-29 to 2019-10-28	<0.5	ug/L	0
ETHYLBENZENE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
TETRACHLOROETHYLENE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
TOLUENE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
TRICHLOROETHYLENE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
VINYL CHLORIDE	2019-04-29 to 2019-10-28	<0.2	ug/L	0
XYLENE	2019-04-29 to 2019-10-28	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2019-04-29	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2019-04-29	<0.25	ug/L	0
2,4-D	2019-04-29	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2019-04-29	<0.15	ug/L	0
ALACHLOR	2019-04-29	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2019-04-29	0.05	ug/L	0
AZINPHOS-METHYL	2019-04-29	<0.05	ug/L	0
BENZO[A]PYRENE	2019-04-29	<0.004	ug/L	0
BROMOXYNIL	2019-04-29	<0.33	ug/L	0
CARBARYL	2019-04-29	<0.05	ug/L	0
CARBOFURAN	2019-04-29	<0.01	ug/L	0
CHLORPYRIFOS (DURSBAN)	2019-04-29	<0.02	ug/L	0
DIAZINON	2019-04-29	<0.02	ug/L	0
DICAMBA	2019-04-29	<0.20	ug/L	0
DICLOFOP-METHYL	2019-04-29	<0.40	ug/L	0
DIMETHOATE	2019-04-29	<0.06	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
DIQUAT	2019-04-29	<1	ug/L	0
DIURON	2019-04-29	<0.03	ug/L	0
GLYPHOSATE	2019-04-29	<1	ug/L	0
MALATHION	2019-04-29	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2019-04-29	<0.00012	mg/L	0
METOLACHLOR	2019-04-29	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2019-04-29	<0.02	ug/L	0
PARAQUAT	2019-04-29	<1	ug/L	0
PCBs TOTAL	2019-04-29	<0.05	ug/L	0
PENTACHLOROPHENOL	2019-04-29	<0.15	ug/L	0
PHORATE	2019-04-29	<0.01	ug/L	0
PICLORAM	2019-04-29	<1	ug/L	0
PROMETRYNE	2019-04-29	<0.03	ug/L	0
SIMAZINE	2019-04-29	<0.01	ug/L	0
TERBUFOS	2019-04-29	<0.01	ug/L	0
TRIALLATE	2019-04-29	<0.01	ug/L	0
TRIFLURALIN	2019-04-29	<0.02	ug/L	0
DISTRIBUTION				
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	21.0	ug/L	0
HALOACETIC ACIDS	2019-01-22 to 2019-10-30	<5.3	ug/L	N/A

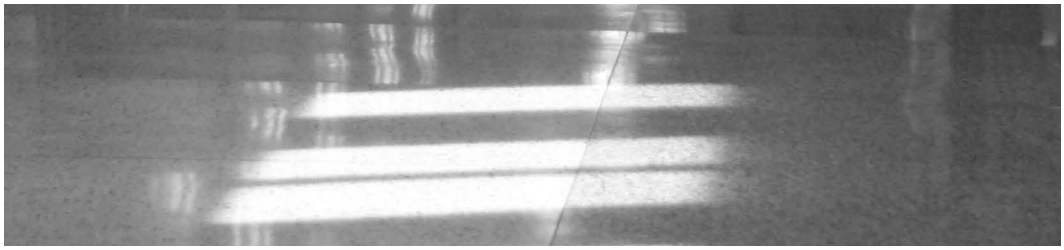
*** The Maximum Acceptable Concentration for Trihalomethanes in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.**

Parameters Exceeding Prescribed Half-Standard

There were no Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03)


WASH WATER RATE
INCHES RISE PER MINUTE


WASH WATER TANK LEVEL
DEPTH OF WATER IN FEET



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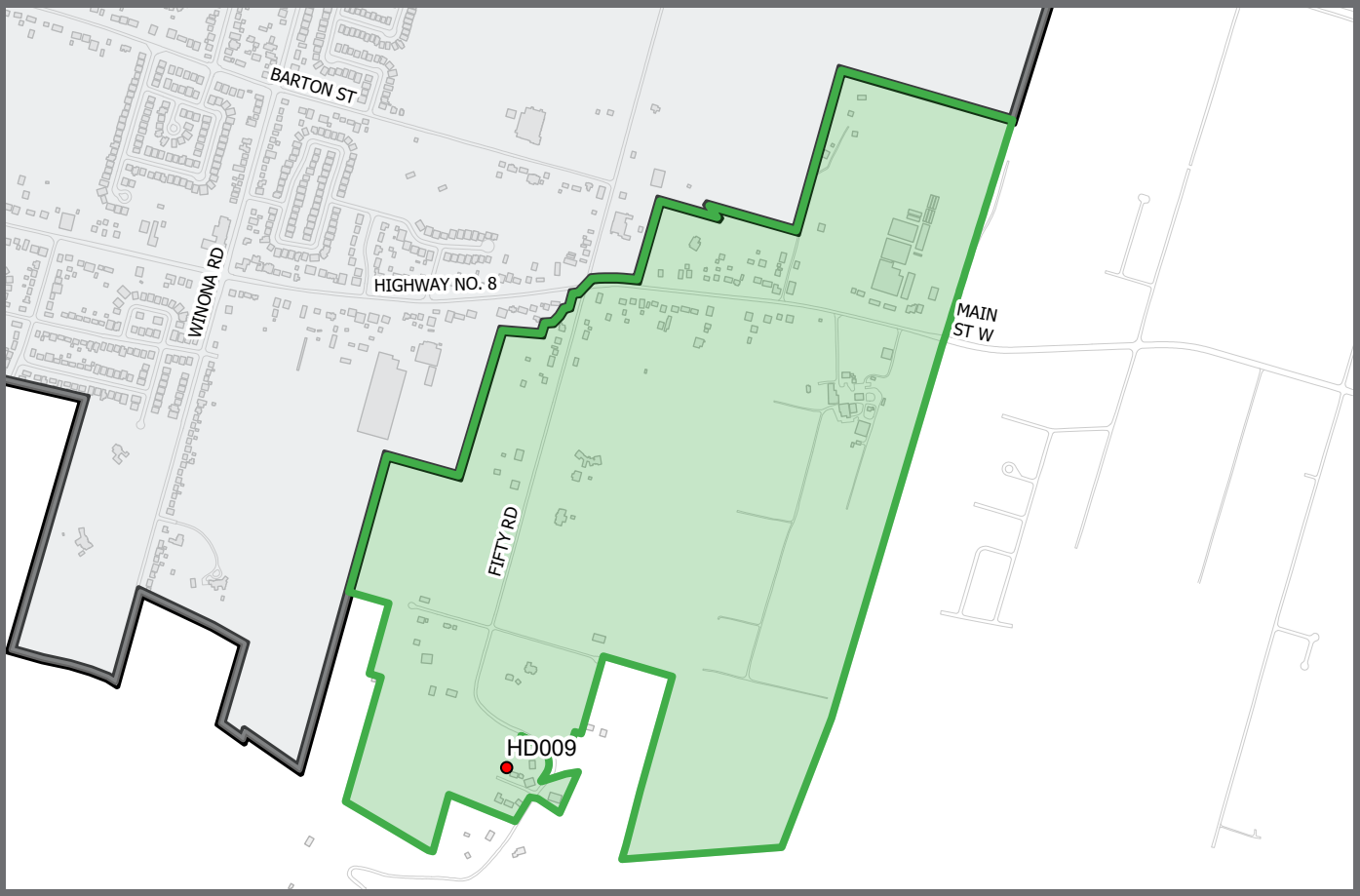


FIFTY ROAD DRINKING WATER SUBSYSTEM

BCOS
BEYOND COMPLIANCE OPERATING SYSTEM

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre

General Information

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, 2019 to December 31, 2019

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, 1,100m^3 storage reservoir operated by the City of Hamilton. The reservoir supplies water to residences on Reservoir Park Road.

A pump, running continuously, maintains the distribution system 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.

Provision of Drinking Water to Other Municipalities

The following is a list of municipal drinking water systems which receive drinking water from the Fifty Road Drinking Water Subsystem:

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

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

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

Water Treatment Chemicals Used During This Reporting Period

- Sodium Hypochlorite

Breakdown of Significant Monetary Expenses

There were no significant expenses incurred for installing, repairing and replacing required equipment in 2019. There were no significant projects initiated or expenses to highlight for the Fifty Road Subsystem in 2019.

Adverse Test Results and Reportable Incidents

The following table outlines 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 (y-m-d)	Location of Adverse	Adverse Water Quality Incident	Resolution
2019-08-20	50 Road Sampling Station A	Total Coliform = 1 CFU/100 mL (Regulatory requirement is 0 CFU/100mL)	→ Resampled adverse location, one upstream and one downstream hydrant. All results passed. The adverse was not confirmed.

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

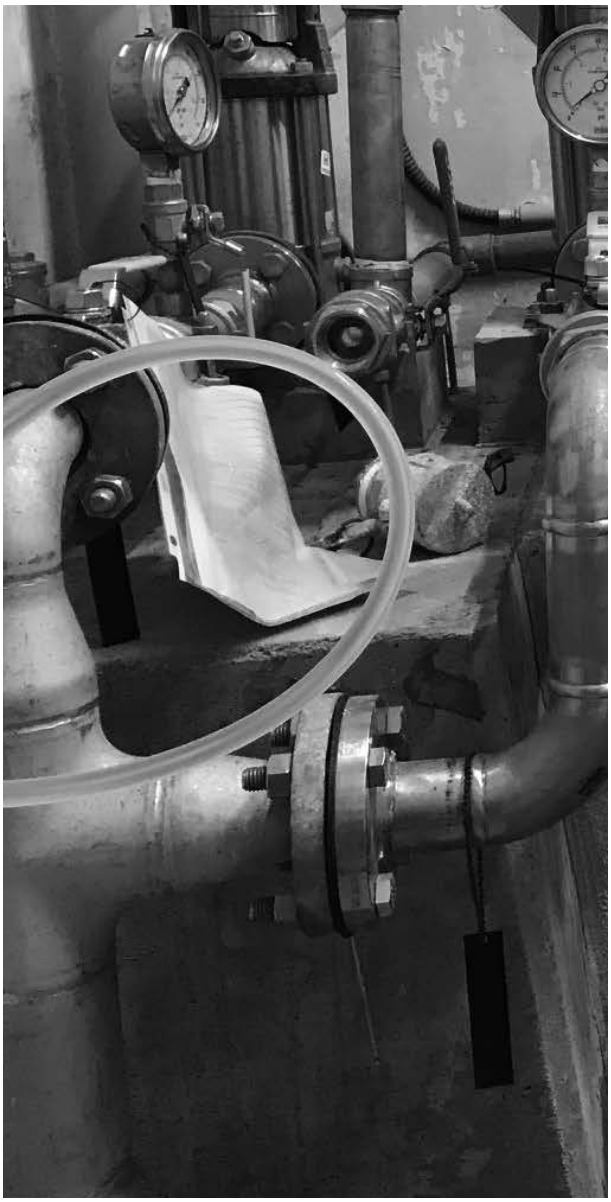
A summary of findings that were either issued during the MECP inspection or self-declared during the 2019 calendar year (Inspection date: May 22, 2019):

#	Finding Type	Finding	Status
1	Non-compliance	The City is advised to ensure that the required information (e.g. rated capacity) is listed in the Summary Report going forward as per O. Reg 170, Schedule 22, section 22-2.	→ Included in the 2019 Annual Summary Report
2	Non-compliance	Reg. 170, Schedule 15.1 requires a letter of notification to include a statement whether the report indicates a result that exceeds any Schedule 2 standard.	→ This statement was included in the original letter of notification
3	Recommendation	The owner had not implemented a program for the flushing of watermains as per industry standards.	→ Actions pending
4	Recommendation	Records did not confirm that disinfectant residuals were routinely checked at the extremities and "dead ends" of the distribution system.	→ Actions pending

Water Production Reports - Summary

The Memorandum of Understanding between Grimsby and Hamilton does not include a rated capacity. Hamilton Water is working with Grimsby to revise the Memoradum of Understanding.


NVC
NVC




NO CONNECTION PERMITTED

WATER QUALITY DATA

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
DISTRIBUTION	107	0	0 to 1	104	0 to 34

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

NOTE: If results are obtained from continuous monitors, then 8,760 is reported as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) to (MAX #)	UNIT OF MEASURE
FREE CHLORINE - DISTRIBUTION	159	0.40 to 1.86	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 LEAD SAMPLES TAKEN	NO. OF pH AND ALKALINITY 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	N/A
PLUMBING-R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISTRIBUTION	2	1	2	7.58 to 7.62	83 to 87	0.0001	0	N/A

NR - Non Residential R- Residential

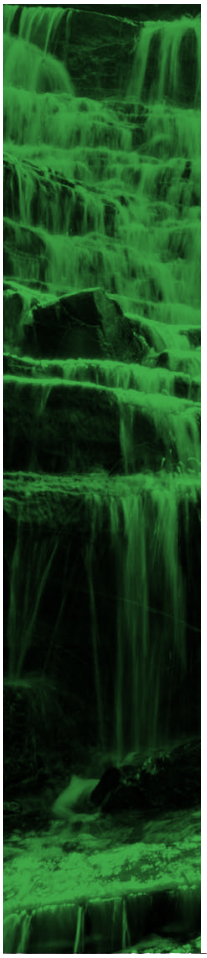
Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period.

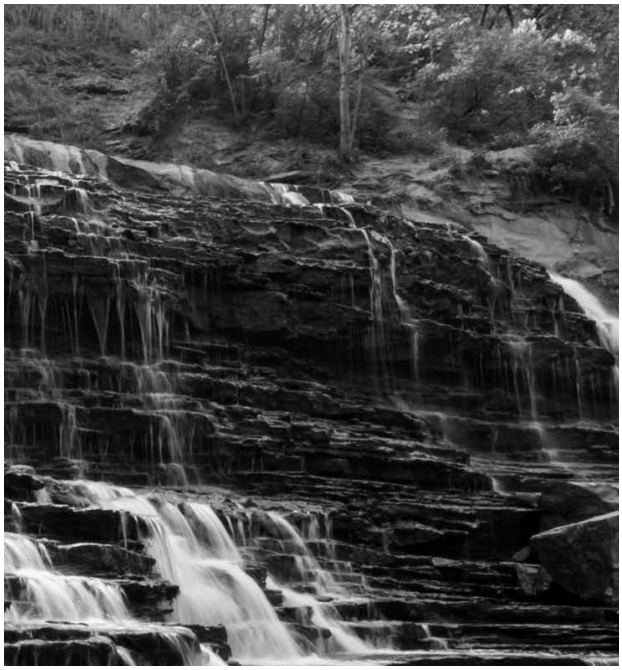
PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
		DISTRIBUTION		
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	31.0	ug/L	0
HALOACETIC ACIDS	2019-01-22 to 2019-10-30	<5.3 to 55.5	ug/L	N/A

*** 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.**

Parameters Exceeding Prescribed Half-Standard

There were no Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03).





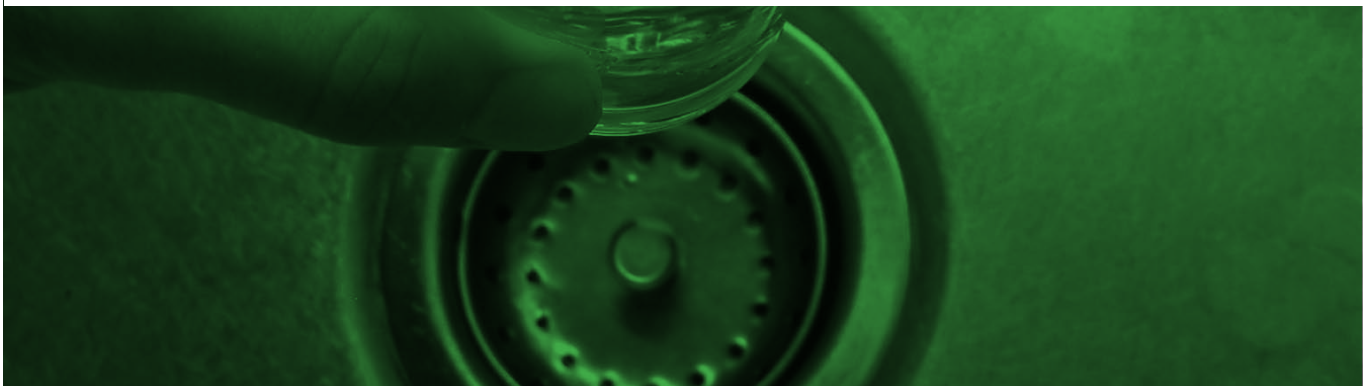


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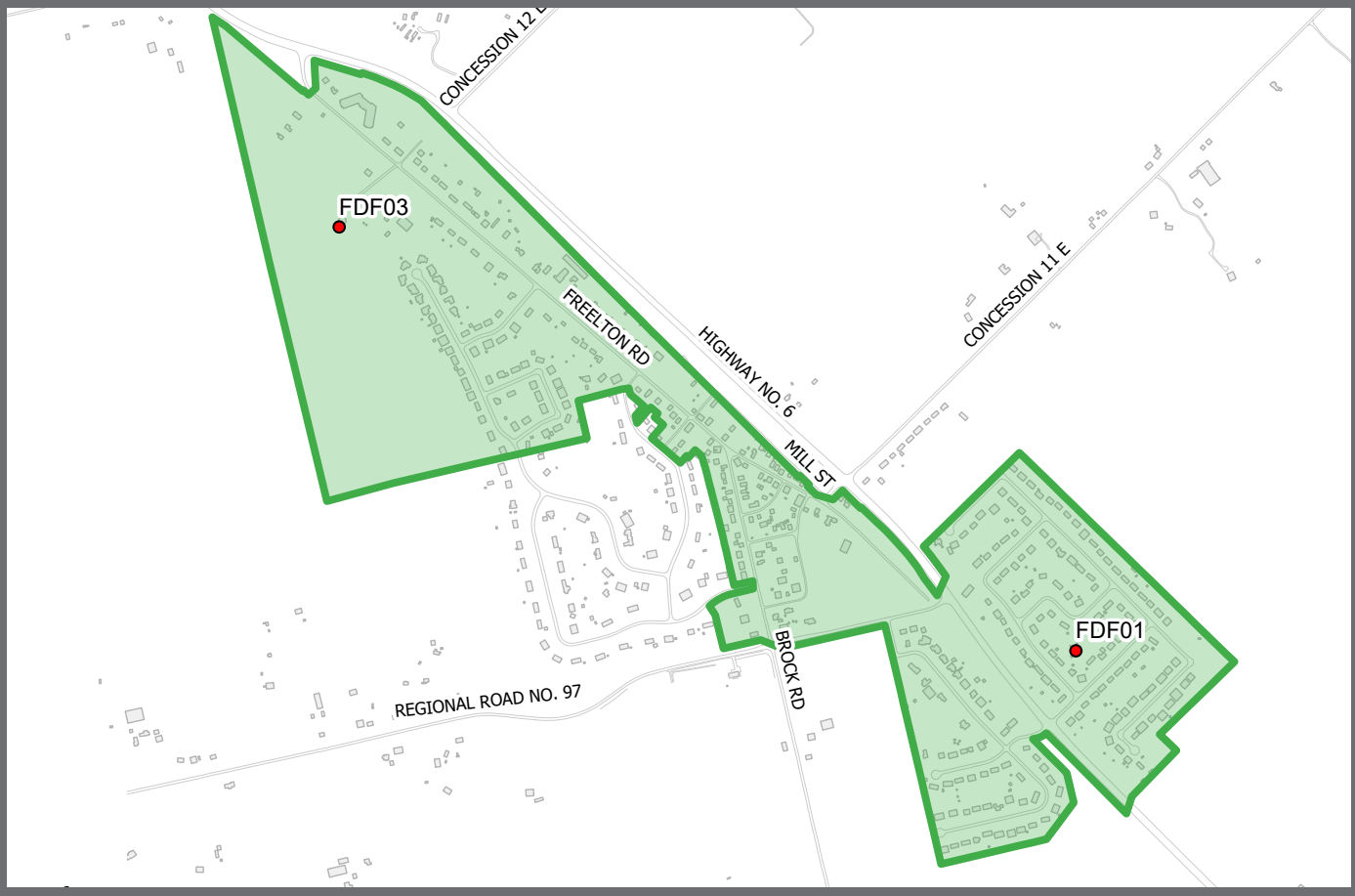
Table 3-1: Freelton Well (FDF01) 2019 Monthly Production (Summary) 42

Figure 3-2: Freelton Well (FDF03) 2019 Monthly Production (Summary) 43

Table 3-2: Freelton Well (FDF03) 2019 Monthly Production (Summary) 43

Figure 3-3: Freelton Well (FDF01 & FDF03) 2019 Monthly Production (Summary) 44

Table 3-3: Freelton Well (FDF01 & FDF03) 2019 Monthly Production (Summary) 44



FREELTON DRINKING WATER SYSTEM

BCOS
BEYOND COMPLIANCE OPERATING SYSTEM

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre

General Information

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, 2019 to December 31, 2019

The Freelton water supply system consists of two wells, one elevated water storage tank, treatment, sampling and analysis which services a population of approximately 800 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 2,840m^3 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.

Provision of Drinking Water to Other Municipalities

The following is a list of municipal drinking water systems which receive drinking water from the Freelton System:

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

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

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

Water Treatment Chemicals Used During This Reporting Period

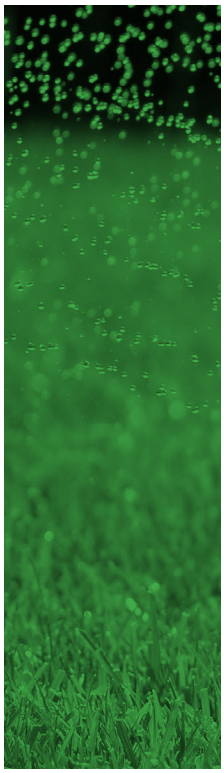
- Sodium Hypochlorite

Breakdown of Significant Monetary Expenses

The following table highlights the significant expenses that were incurred for installing, repairing and replacing required equipment in 2019.

Freelton Tower HDT03 Upgrades $218,000

Freelton Well FDF01 Capacity $61,000



Adverse Test Results and Reportable Incidents

The following table outlines 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 (y-m-d)	Location of Adverse	Adverse Water Quality Incident	Resolution
2019-08-14	Freelton Sampling Station B	Total Coliforms = 4 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.

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 2019 calendar year (Inspection date: November 14, 2019):

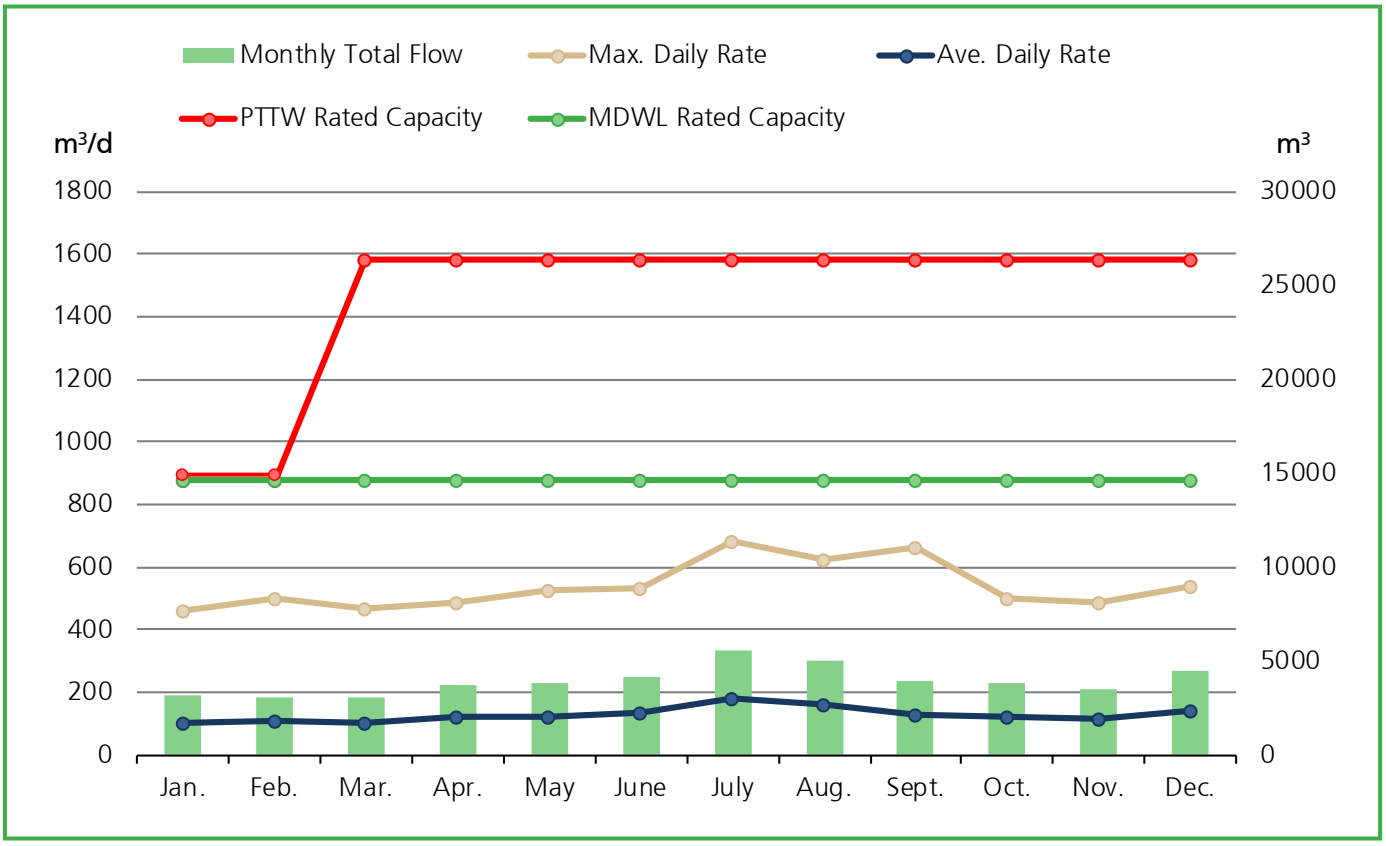
#	Finding Type	Finding	Status

We are pleased to report that there were no Inspection Findings or Self-Declared Non-Compliances.

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 3-1: FREELTON WELL (FDF01) - 2019 MONTHLY PRODUCTION (SUMMARY)

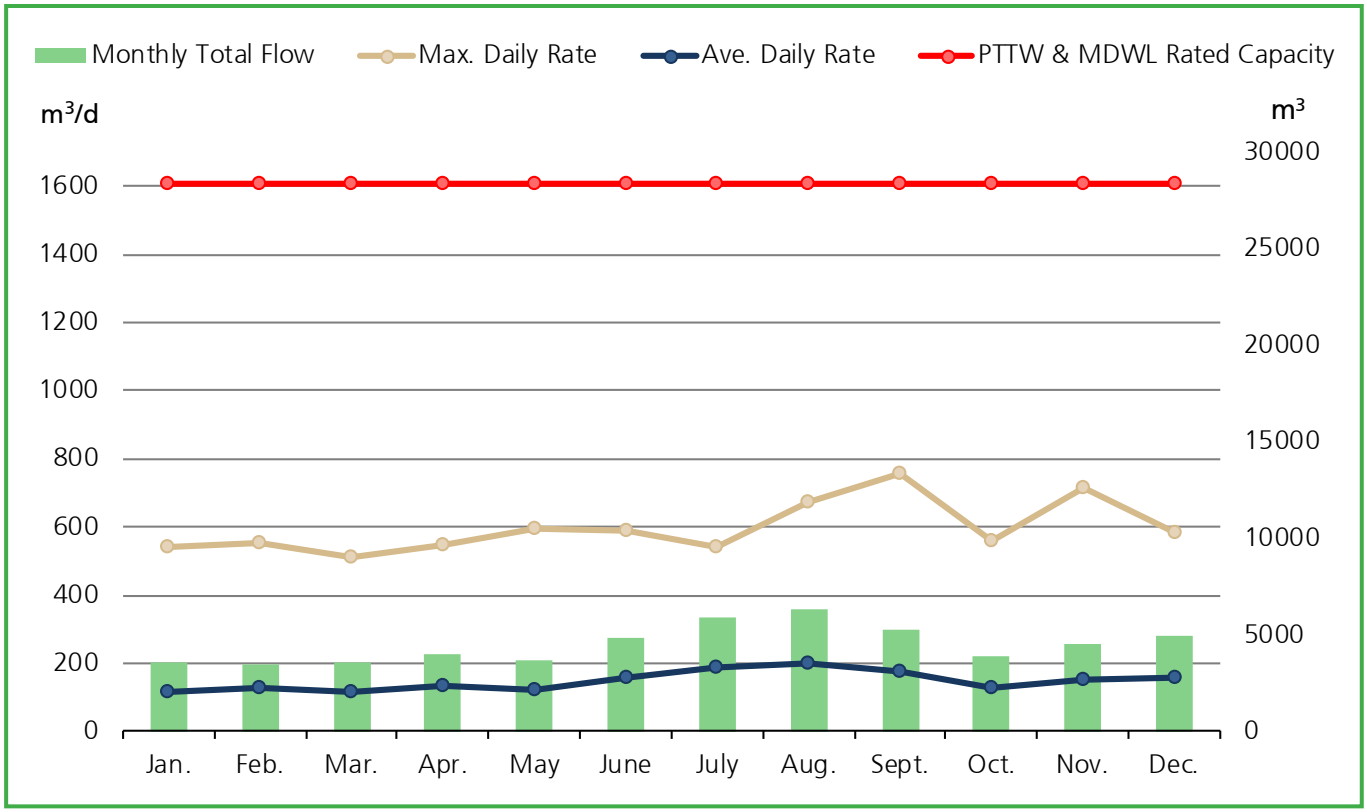


MAINTAINED COMPLIANCE

TABLE 3-1: FREELTON WELL (FDF01) - 2019 MONTHLY PRODUCTION (SUMMARY)

FDF01	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total Monthly Flow	m^3	3,203	3,051	3,131	3,713	3,824	4,142	5,584	5,000	3,943	3,888	3,509	4,469
Average Daily Rate	m^3/d	103	109	101	124	123	138	180	161	131	125	117	144
Maximum Daily Rate	m^3/d	461	499	470	487	530	534	683	622	667	501	490	540
PTTW Daily Rated Capacity	m^3/d	878	878	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584
MDWL Daily Rated Capacity	m^3/d	878	878	878	878	878	878	878	878	878	878	878	878

FIGURE 3-2: FREELTON WELL (FDF03) - 2019 MONTHLY PRODUCTION (SUMMARY)

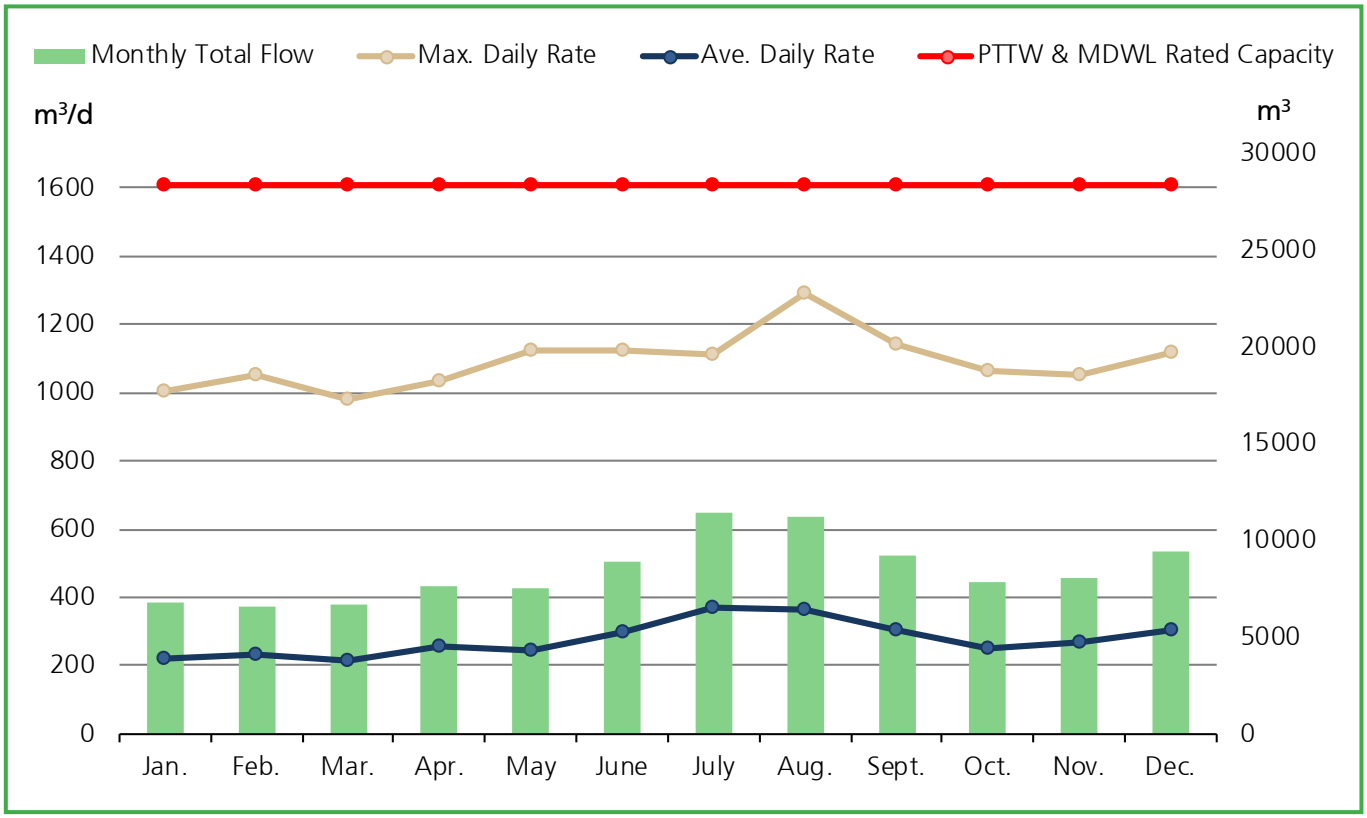


MAINTAINED COMPLIANCE

TABLE 3-2: FREELTON WELL (FDF03) - 2019 MONTHLY PRODUCTION (SUMMARY)

FDF03	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total Monthly Flow	m^3	3,571	3,526	3,541	3,963	3,733	4,805	5,897	6,280	5,278	3,926	4,517	4,989
Average Daily Rate	m^3/d	115	126	114	132	120	160	190	203	176	127	151	161
Maximum Daily Rate	m^3/d	544	554	509	548	593	587	542	672	757	562	713	581
PTTW & MDWL Daily Rated Capacity	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

FIGURE 3-3: FREELTON WELL (FDF01 & FDF03) - 2019 MONTHLY PRODUCTION (SUMMARY)



MAINTAINED COMPLIANCE

TABLE 3-3: FREELTON WELL (FDF01 & FDF03) - 2019 MONTHLY PRODUCTION (SUMMARY)

FDF01 & 03	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total Montly Flow	m^3	6,774	6,577	6,672	7,676	7,558	8,947	11,481	11,281	9,221	7,815	8,026	9,459
Average Daily Rate	m^3/d	219	235	215	256	244	298	370	364	307	252	268	305
Maximum Daily Rate	m^3/d	1,005	1,053	979	1.035	1,123	1,122	1,113	1,294	1,143	1,063	1,051	1,120
PTTW Daily Rated Capacity	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

WATER QUALITY DATA

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	52	0	0	N/A	N/A
RAW - FDF03	53	0	0	N/A	N/A
TREATED - FDF01	52	0	0	52	0 to 2
TREATED - FDF03	53	0	0	53	0 to 1
DISTRIBUTION	213	0	0 to 4	210	0 to 13

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: If results are obtained from continuous monitors, then 8,760 is reported as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #)-(MAX #)	UNIT OF MEASURE
TURBIDITY - RAW - FDF01	51	0.05 – 0.46	NTU
TURBIDITY - RAW - FDF03	53	0.05 – 0.40	NTU
FREE CHLORINE - TREATED - FDF01	8,760	1.26 – 2.28	mg/L
FREE CHLORINE - TREATED - FDF03	8,760	1.29 – 2.37	mg/L
FREE CHLORINE - DISTRIBUTION	365	1.17 – 2.02	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	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
ARSENIC	2019-04-30 to 2019-10-29	0.0001	mg/L	0
BARIUM	2019-04-30 to 2019-10-29	0.0631 to 0.0693	mg/L	0
BORON	2019-04-30 to 2019-10-29	0.018 to 0.021	mg/L	0

...continued on next page

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
CADMIUM	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
CHROMIUM	2019-04-30 to 2019-10-29	<0.0001 to 0.0001	mg/L	0
FLUORIDE	2019-04-30 to 2019-10-29	0.08 to 0.10	mg/L	0
MERCURY	2019-04-30 to 2019-10-29	<0.05	mg/L	0
NITRATE AS N	2019-01-23 to 2019-10-29	1.97 to 2.41	mg/L	0
NITRITE AS N	2019-01-23 to 2019-10-29	<0.01	mg/L	0
SELENIUM	2019-04-30 to 2019-10-29	0.0002 to 0.0003	mg/L	0
SODIUM	2019-04-30 to 2019-10-29	53.3 to 59.8	mg/L	0
URANIUM	2019-04-30 to 2019-10-29	0.278 to 0.284	ug/L	0
FREELTON WELL FDF03 - TREATED				
ANTIMONY	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
ARSENIC	2019-04-30 to 2019-10-29	0.0004 to 0.0005	mg/L	0
BARIUM	2019-04-30 to 2019-10-29	0.0663 to 0.0716	mg/L	0
BORON	2019-04-30 to 2019-10-29	0.012 to 0.017	mg/L	0
CADMIUM	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
CHROMIUM	2019-04-30 to 2019-10-29	<0.0001 to 0.0001	mg/L	0
FLUORIDE	2019-04-30 to 2019-10-29	0.16 to 0.18	mg/L	0
MERCURY	2019-04-30 to 2019-10-29	<0.05	mg/L	0
NITRATE AS N	2019-01-23 to 2019-10-29	0.02 to 0.06	mg/L	0
NITRITE AS N	2019-01-23 to 2019-10-29	<0.01	mg/L	0
SELENIUM	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
SODIUM	2019-04-30 to 2019-10-29	34.1 to 48.7	mg/L	0
URANIUM	2019-04-30 to 2019-10-29	0.267 to 0.296	ug/L	0

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

LOCATION TYPE	NO. OF POINTS SAMPLED	NO. OF LEAD SAMPLES TAKEN	NO. OF pH AND ALKALINITY 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	N/A
PLUMBING-R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISTRIBUTION	4	2	4	7.36 to 7.66	299 to 319	0.0009 to 0.0010	0	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	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROETHANE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
BENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
CARBON TETRACHLORIDE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
CHLOROBENZENE	2019-04-30 to 2019-10-29	<0.3	ug/L	0
DICHLOROMETHANE	2019-04-30 to 2019-10-29	<0.5	ug/L	0
ETHYLBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TETRACHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TOLUENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TRICHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
VINYL CHLORIDE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
XYLENE	2019-04-30 to 2019-10-29	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2019-04-30	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2019-04-30	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2019-04-30	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2019-04-30	<0.15	ug/L	0
ALACHLOR	2019-04-30	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2019-04-30	<0.01	ug/L	0
AZINPHOS-METHYL	2019-04-30	<0.05	ug/L	0
BENZO[A]PYRENE	2019-04-30	<0.004	ug/L	0
BROMOXYNIL	2019-04-30	<0.33	ug/L	0
CARBARYL	2019-04-30	<0.05	ug/L	0
CARBOFURAN	2019-04-30	<0.01	ug/L	0
CHLORPYRIFOS	2019-04-30	<0.02	ug/L	0
DIAZINON	2019-04-30	<0.02	ug/L	0
DICAMBA	2019-04-30	<0.20	ug/L	0
DICLOFOP-METHYL	2019-04-30	<0.40	ug/L	0
DIMETHOATE	2019-04-30	<0.06	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
DIQUAT	2019-04-30	<1	ug/L	0
DIURON	2019-04-30	<0.03	ug/L	0
GLYPHOSATE	2019-04-30	<1	ug/L	0
MALATHION	2019-04-30	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2019-04-30	<0.00012	mg/L	0
METOLACHLOR	2019-04-30	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2019-04-30	<0.02	ug/L	0
PARAQUAT	2019-04-30	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2019-04-30	<0.05	ug/L	0
PENTACHLOROPHENOL	2019-04-30	<0.15	ug/L	0
PHORATE	2019-04-30	<0.01	ug/L	0
PICLORAM	2019-04-30	<1	ug/L	0
PROMETRYNE	2019-04-30	<0.03	ug/L	0
SIMAZINE	2019-04-30	<0.01	ug/L	0
TERBUFOS	2019-04-30	<0.01	ug/L	0
TRIALLATE	2019-04-30	<0.01	ug/L	0
TRIFLURALIN	2019-04-30	<0.02	ug/L	0

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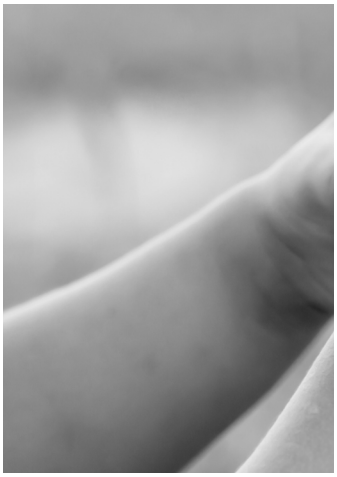

Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
FREELTON WELL FDF03 - TREATED				
1,1-DICHLOROETHYLENE	2019-01-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2019-01-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROETHANE	2019-01-30 to 2019-10-29	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2019-01-30 to 2019-10-29	<0.2	ug/L	0
BENZENE	2019-01-30 to 2019-10-29	<0.2	ug/L	0
CARBON TETRACHLORIDE	2019-01-30 to 2019-10-29	<0.2	ug/L	0
CHLOROBENZENE	2019-01-30 to 2019-10-29	<0.3	ug/L	0
DICHLOROMETHANE	2019-01-30 to 2019-10-29	<0.5	ug/L	0
ETHYLBENZENE	2019-01-30 to 2019-10-29	<0.2 to 0.3	ug/L	0
TETRACHLOROETHYLENE	2019-01-30 to 2019-10-29	<0.2	ug/L	0
TOLUENE	2019-01-30 to 2019-10-29	<0.2	ug/L	0
TRICHLOROETHYLENE	2019-01-30 to 2019-10-29	<0.2	ug/L	0
VINYL CHLORIDE	2019-01-30 to 2019-10-29	<0.2	ug/L	0
XYLENE	2019-01-30 to 2019-10-29	<0.3 to 2.0	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2019-04-30	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2019-04-30	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2019-04-30	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2019-04-30	<0.15	ug/L	0
ALACHLOR	2019-04-30	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2019-04-30	<0.01	ug/L	0
AZINPHOS-METHYL	2019-04-30	<0.05	ug/L	0
BENZO[A]PYRENE	2019-04-30	<0.004	ug/L	0
BROMOXYNIL	2019-04-30	<0.33	ug/L	0
CARBARYL	2019-04-30	<0.05	ug/L	0
CARBOFURAN	2019-04-30	<0.01	ug/L	0
CHLORPYRIFOS	2019-04-30	<0.02	ug/L	0
DIAZINON	2019-04-30	<0.02	ug/L	0
DICAMBA	2019-04-30	<0.20	ug/L	0
DICLOFOP-METHYL	2019-04-30	<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	2019-04-30	<0.06	ug/L	0
DIQUAT	2019-04-30	<1	ug/L	0
DIURON	2019-04-30	<0.03	ug/L	0
GLYPHOSATE	2019-04-30	<1	ug/L	0
MALATHION	2019-04-30	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2019-04-30	<0.00012	mg/L	0
METOLACHLOR	2019-04-30	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2019-04-30	<0.02	ug/L	0
PARAQUAT	2019-04-30	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2019-04-30	<0.05	ug/L	0
PENTACHLOROPHENOL	2019-04-30	<0.15	ug/L	0
PHORATE	2019-04-30	<0.01	ug/L	0
PICLORAM	2019-04-30	<1	ug/L	0
PROMETRYNE	2019-04-30	<0.03	ug/L	0
SIMAZINE	2019-04-30	<0.01	ug/L	0
TERBUFOS	2019-04-30	<0.01	ug/L	0
TRIALLATE	2019-04-30	<0.01	ug/L	0
TRIFLURALIN	2019-04-30	<0.02	ug/L	0
DISTRIBUTION				
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters	13.2	ug/L	0
HALOACETIC ACIDS	2019-01-23 to 2019-10-29	<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.**

Parameters Exceeding Prescribed Half-Standard

There were no Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03).

GREENSVILLE DRINKING WATER SYSTEM
WATER QUALITY ANNUAL REPORT

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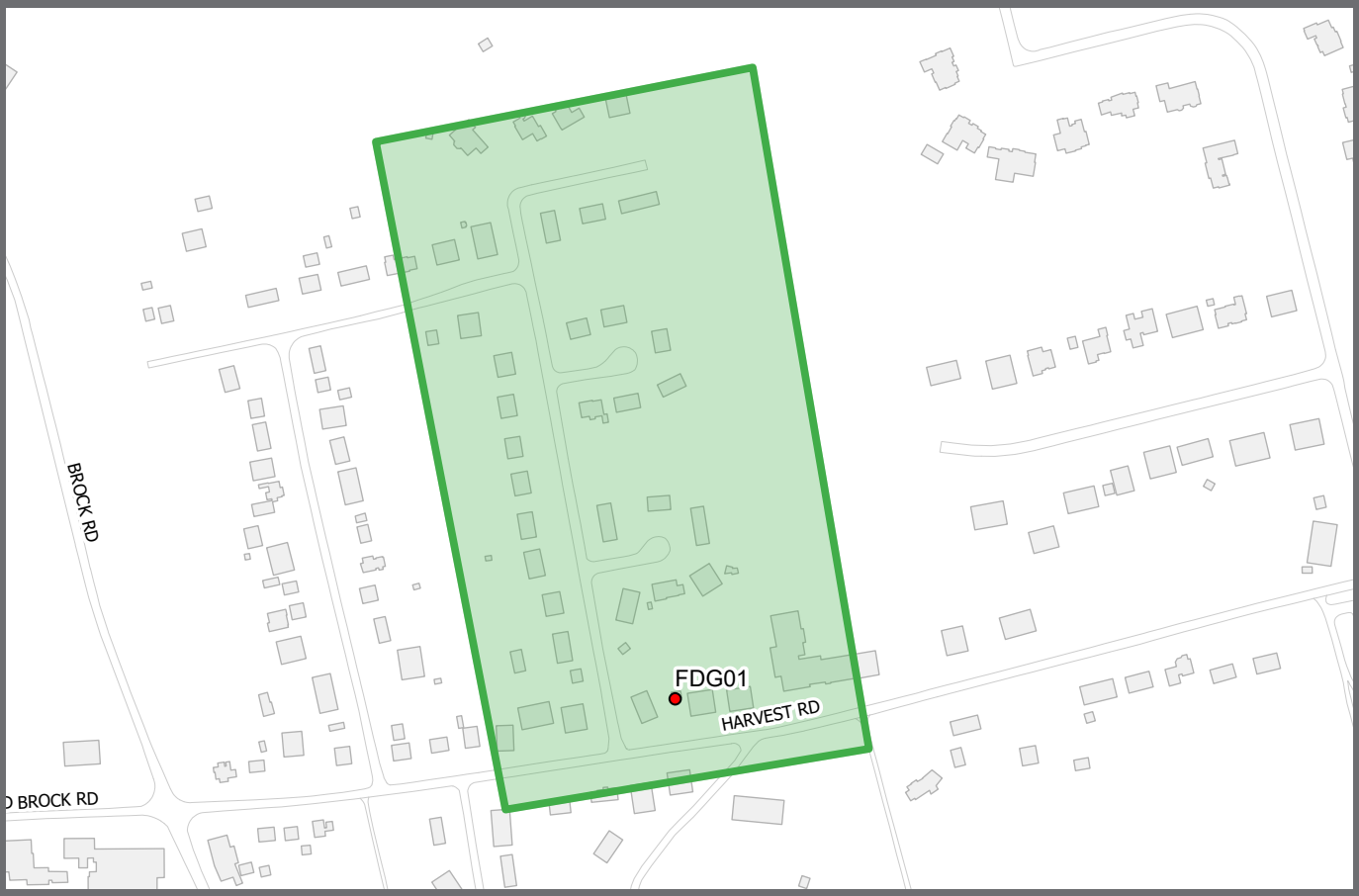


GREENSVILLE DRINKING WATER SYSTEM

BCOS
BEYOND COMPLIANCE OPERATING SYSTEM

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre

General Information

Drinking Water System Number	Drinking Water System Name	Drinking Water System Owner	Drinking Water System Category	Period Being Reported
220004126	Greensville Drinking Water System FDG01	City of Hamilton	Small Municipal Residential	January 1, 2019 to December 31, 2019

The Greensville water supply system consists of one well, one well station, treatment, sampling and analysis which services a population of approximately 108 people.

Water Well:

Greensville 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 ultraviolet light and sodium hypochlorite (chlorine) prior to entering the distribution system. A chlorine contact chamber is used to ensure disinfection of the water. Fluoridation is not carried out at the Greensville 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. Raw, treated and distribution water is sampled and analyzed weekly. In addition, chlorine residual in the distribution system is analyzed daily.

Provision of Drinking Water to Other Municipalities

The following is a list of municipal drinking water systems which receive drinking water from the Greensville System:

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

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

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

Water Treatment Chemicals Used During This Reporting Period

- Sodium Hypochlorite

Breakdown of Significant Monetary Expenses

The following table highlights the significant expenses that were incurred for replacing required equipment in 2019. There were no significant expenses related to the installation or repair of equipment in 2019.

New Greensville Communal Well Project $2,400 (spent in 2019 of a multi-year project)

Adverse Test Results and Reportable Incidents

The following table outlines 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 (y-m-d)	Location of Adverse	Adverse Water Quality Incident	Resolution
2019-09-04	Greensville Drinking Water System	Duty to report other observations. Intermittent communication issues	→ An operator was dispatched to the site to monitor the situation and remained until communication was up and running. A cellular line of communication was hooked up temporarily. Fibre line was restored at 23:30 on Sept 4th. There were no concerns regarding the quality of water being provided.

MECP Greensville 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 2019 calendar year (Inspection date: September 5, 2019):

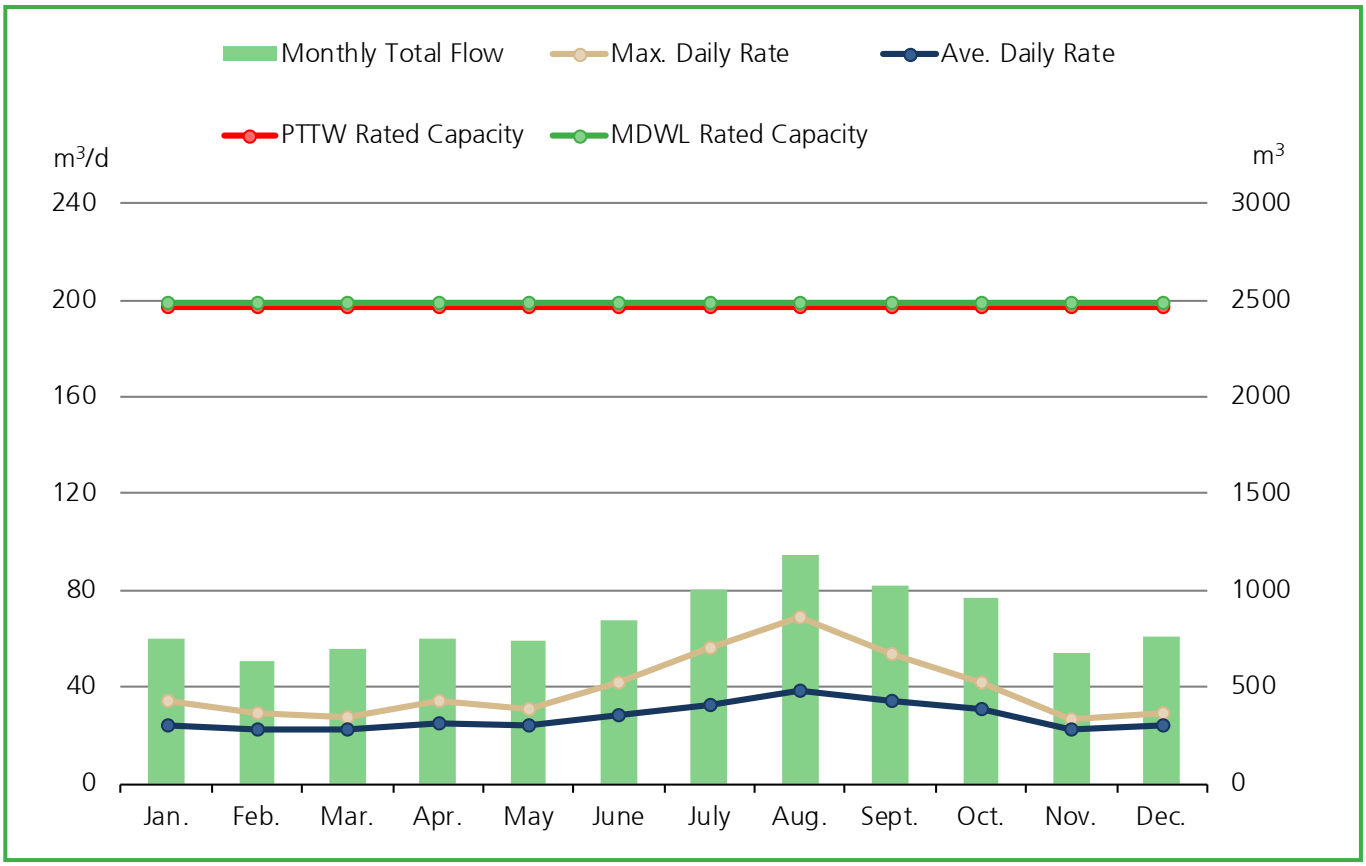
#	Finding Type	Finding	Status

We are pleased to report that there were no Inspection Findings or Self-Declared Non-Compliances.

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: GREENSVILLE WELL (FDG01) - 2019 MONTHLY PRODUCTION (SUMMARY)



MAINTAINED COMPLIANCE

TABLE 4-1: GREENSVILLE WELL (FDG01) - 2019 MONTHLY PRODUCTION (SUMMARY)

FDG01	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	752	631	695	752	742	843	1,001	1,183	1,020	957	677	756
Average Daily Rate	m^3/d	24	23	22	25	24	28	32	38	34	31	23	24
Maximum Daily Rate	m^3/d	34	29	28	34	31	42	56	69	53	42	26	29
PTTW Daily Rated Capacity	m^3/d	197	197	197	197	197	197	197	197	197	197	197	197
MDWL Daily Rated Capacity	m^3/d	199	199	199	199	199	199	199	199	199	199	199	199

WATER QUALITY DATA

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 6	0 to 46	N/A	N/A
TREATED	52	0	0	52	0 to 1
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: If results are obtained from continuous monitors, then 8,760 is reported 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 – 0.34	NTU
FREE CHLORINE - TREATED	8,760	1.73 – 2.48	mg/L
FREE CHLORINE - DISTRIBUTION	364	1.21 – 2.68	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	2019-05-01 to 2019-10-30	<0.0001	mg/L	0
ARSENIC	2019-05-01 to 2019-10-30	<0.0001	mg/L	0
BARIUM	2019-05-01 to 2019-10-30	0.117 to 0.134	mg/L	0
BORON	2019-05-01 to 2019-10-30	0.029 to 0.033	mg/L	0
CADMIUM	2019-05-01 to 2019-10-30	<0.0001	mg/L	0
CHROMIUM	2019-05-01 to 2019-10-30	0.0003 to 0.0004	mg/L	0
FLUORIDE	2019-05-01 to 2019-10-30	0.11 to 0.12	mg/L	0
MERCURY	2019-05-01 to 2019-10-30	<0.05	mg/L	0
NITRATE AS N	2019-01-02 to 2019-12-04	5.02 to 6.29	mg/L	0
NITRITE AS N	2019-01-02 to 2019-12-04	<0.01	mg/L	0
SELENIUM	2019-05-01 to 2019-10-30	0.0002 to 0.0003	mg/L	0
SODIUM	2019-05-01 to 2019-10-30	112 to 122	mg/L	0
URANIUM	2019-05-01 to 2019-10-30	0.599 to 0.615	ug/L	0

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

LOCATION TYPE	NO. OF POINTS SAMPLED	NO. OF LEAD SAMPLES TAKEN	NO. OF pH AND ALKALINITY 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	N/A
PLUMBING-R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISTRIBUTION	2	1	2	7.27 to 7.42	329 to 334	<0.0001	0	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	2019-05-01 to 2019-10-30	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2019-05-01 to 2019-10-30	<0.2	ug/L	0
1,2-DICHLOROETHANE	2019-05-01 to 2019-10-30	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2019-05-01 to 2019-10-30	<0.2	ug/L	0
BENZENE	2019-05-01 to 2019-10-30	<0.2	ug/L	0
CARBON TETRACHLORIDE	2019-05-01 to 2019-10-30	<0.2	ug/L	0
CHLOROBENZENE	2019-05-01 to 2019-10-30	<0.3	ug/L	0
DICHLOROMETHANE	2019-05-01 to 2019-10-30	<0.5	ug/L	0
ETHYLBENZENE	2019-05-01 to 2019-10-30	<0.2	ug/L	0
TETRACHLOROETHYLENE	2019-05-01 to 2019-10-30	<0.2	ug/L	0
TOLUENE	2019-05-01 to 2019-10-30	<0.2	ug/L	0
TRICHLOROETHYLENE	2019-05-01 to 2019-10-30	<0.2	ug/L	0
VINYL CHLORIDE	2019-05-01 to 2019-10-30	<0.2	ug/L	0
XYLENE	2019-05-01 to 2019-10-30	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2019-05-01	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2019-05-01	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2019-05-01	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2019-05-01	<0.15	ug/L	0
ALACHLOR	2019-05-01	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2019-05-01	<0.01	ug/L	0
AZINPHOS-METHYL	2019-05-01	<0.05	ug/L	0
BENZO[A]PYRENE	2019-05-01	<0.004	ug/L	0
BROMOXYNIL	2019-05-01	<0.33	ug/L	0
CARBARYL	2019-05-01	<0.05	ug/L	0
CARBOFURAN	2019-05-01	<0.01	ug/L	0
CHLORPYRIFOS	2019-05-01	<0.02	ug/L	0
DIAZINON	2019-05-01	<0.02	ug/L	0
DICAMBA	2019-05-01	<0.20	ug/L	0
DICLOFOP-METHYL	2019-05-01	<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	2019-05-01	<0.06	ug/L	0
DIQUAT	2019-05-01	<1	ug/L	0
DIURON	2019-05-01	<0.03	ug/L	0
GLYPHOSATE	2019-05-01	<1	ug/L	0
MALATHION	2019-05-01	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2019-05-01	<0.00012	mg/L	0
METOLACHLOR	2019-05-01	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2019-05-01	<0.02	ug/L	0
PARAQUAT	2019-05-01	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2019-05-01	<0.05	ug/L	0
PENTACHLOROPHENOL	2019-05-01	<0.15	ug/L	0
PHORATE	2019-05-01	<0.01	ug/L	0
PICLORAM	2019-05-01	<1	ug/L	0
PROMETRYNE	2019-05-01	<0.03	ug/L	0
SIMAZINE	2019-05-01	<0.01	ug/L	0
TERBUFOS	2019-05-01	<0.01	ug/L	0
TRIALLATE	2019-05-01	<0.01	ug/L	0
TRIFLURALIN	2019-05-01	<0.02	ug/L	0

DISTRIBUTION

TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	17.7	ug/L	0
HALOACETIC ACIDS	2019-01-24 to 2019-10-30	<5.3 to 5.7	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.**

Parameters Exceeding Prescribed Half-Standard

Summary of 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	2019-01-02	5.64	mg/L
NITRATE	2019-01-24	5.84	mg/L
NITRATE	2019-02-06	6.29	mg/L
NITRATE	2019-03-06	5.80	mg/L
NITRATE	2019-04-03	5.13	mg/L
NITRATE	2019-05-01	5.10	mg/L
NITRATE	2019-05-01	5.02	mg/L
NITRATE	2019-06-05	5.29	mg/L
NITRATE	2019-07-03	5.28	mg/L
NITRATE	2019-07-17	5.25	mg/L
NITRATE	2019-08-07	5.33	mg/L
NITRATE	2019-09-04	5.48	mg/L
NITRATE	2019-10-02	5.65	mg/L
NITRATE	2019-10-30	5.67	mg/L
NITRATE	2019-11-06	5.46	mg/L
NITRATE	2019-12-04	5.56	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)

CARLISLE DRINKING WATER SYSTEM WATER QUALITY ANNUAL REPORT

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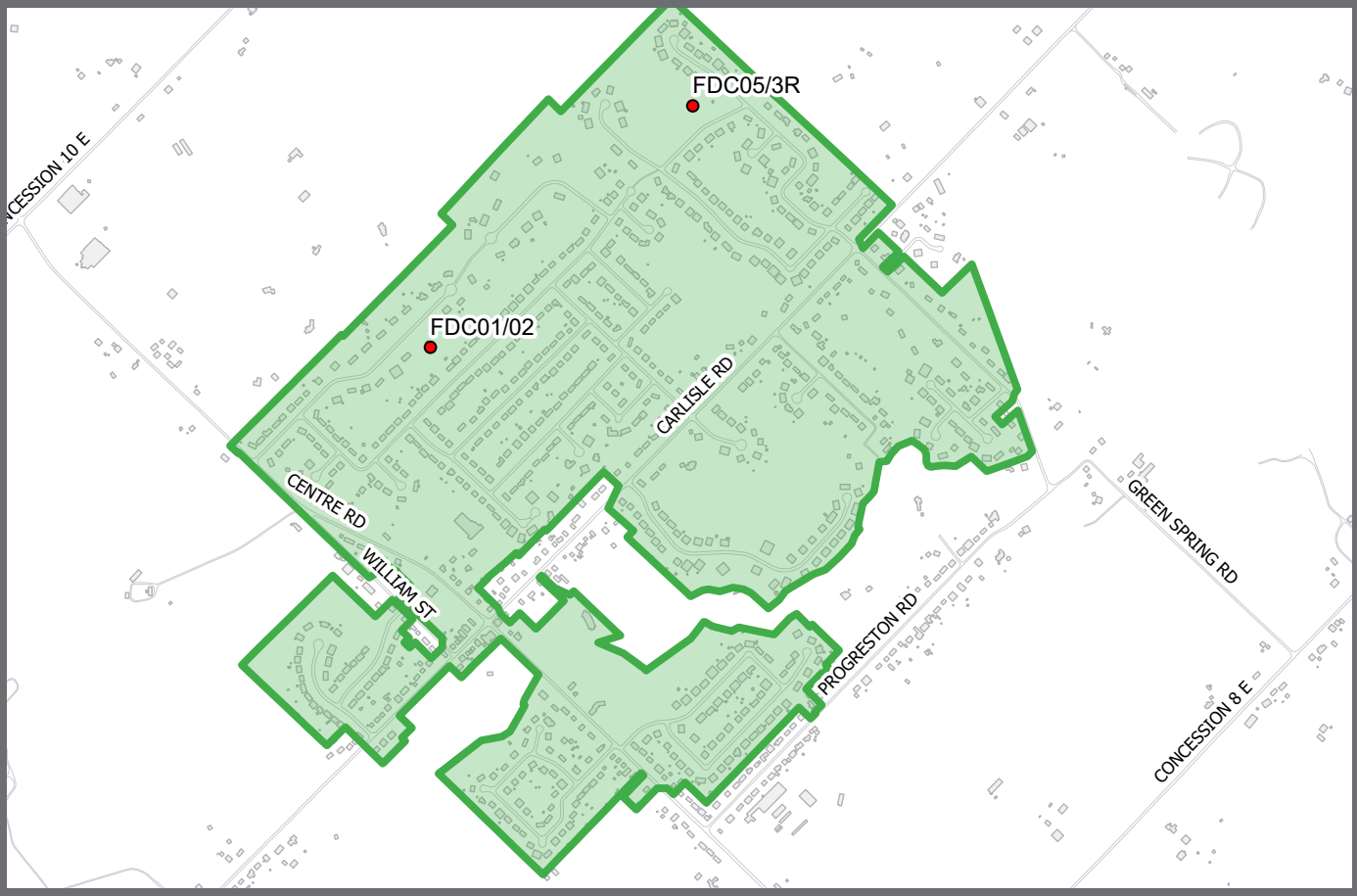
Figure 5-3: Carlisle Well (FDC05) 2019 Monthly Production (Summary) 72

Table 5-3: Carlisle Well (FDC05) 2019 Monthly Production (Summary) 72

Figure 5-4: Carlisle Well (FDC03R & FDC05) 2019 Monthly Production (Summary) 73

Table 5-4: Carlisle Well (FDC03R & FDC05) 2019 Monthly Production (Summary) 73



CARLISLE DRINKING WATER SYSTEM

BCOS
BEYOND COMPLIANCE OPERATING SYSTEM

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre

General Information

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, 2019 to December 31, 2019

The Carlisle water supply system consists of four wells, one elevated water storage tank, treatment, sampling and analysis, which services a population of approximately 1,833 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 42 metres.
- Carlisle Well FDC02 has a diameter of 300mm at a depth of 2.6 metres and a diameter of 250mm to a depth of 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 ultraviolet 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 1,400m^3. 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.

Provision of Drinking Water to Other Municipalities

The following is a list of municipal drinking water systems which receive drinking water from the Carlisle System:

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

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

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

Water Treatment Chemicals Used During This Reporting Period

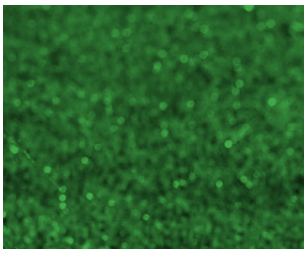
- Sodium Hypochlorite

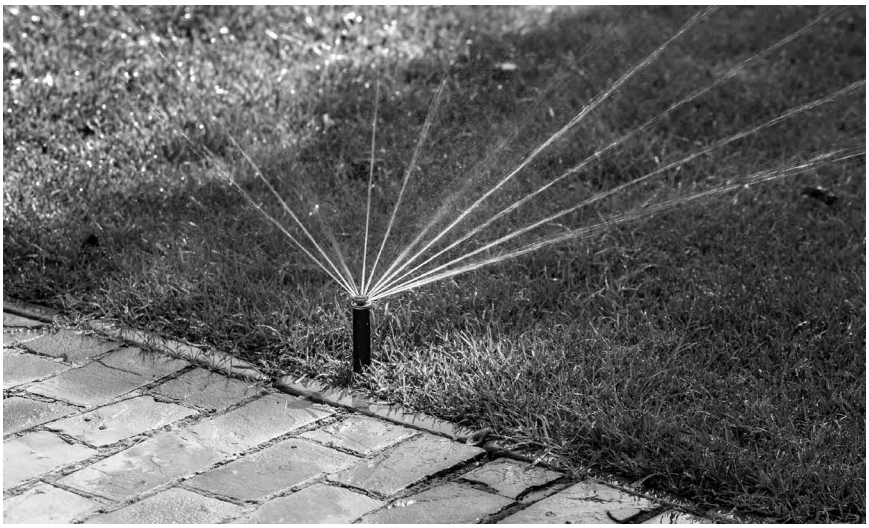
Breakdown of Significant Monetary Expenses

The following table highlights the significant expenses that were incurred for the replacement of required equipment in 2019. There were no significant expenses related to the installation or repair of equipment in 2019.

Replacement of communal well pump - $33,000

Replacement of standby UPS for standby ultraviolet - $8,000






Adverse Test Results and Reportable Incidents

The following table outlines 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 (y-m-d)	Location of Adverse	Adverse Water Quality Incident	Resolution

We are pleased to announce that there were no Adverse Water Quality Incidents for the period of January to December 2019.

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 2019 calendar year (Inspection date: October 15, 2019):

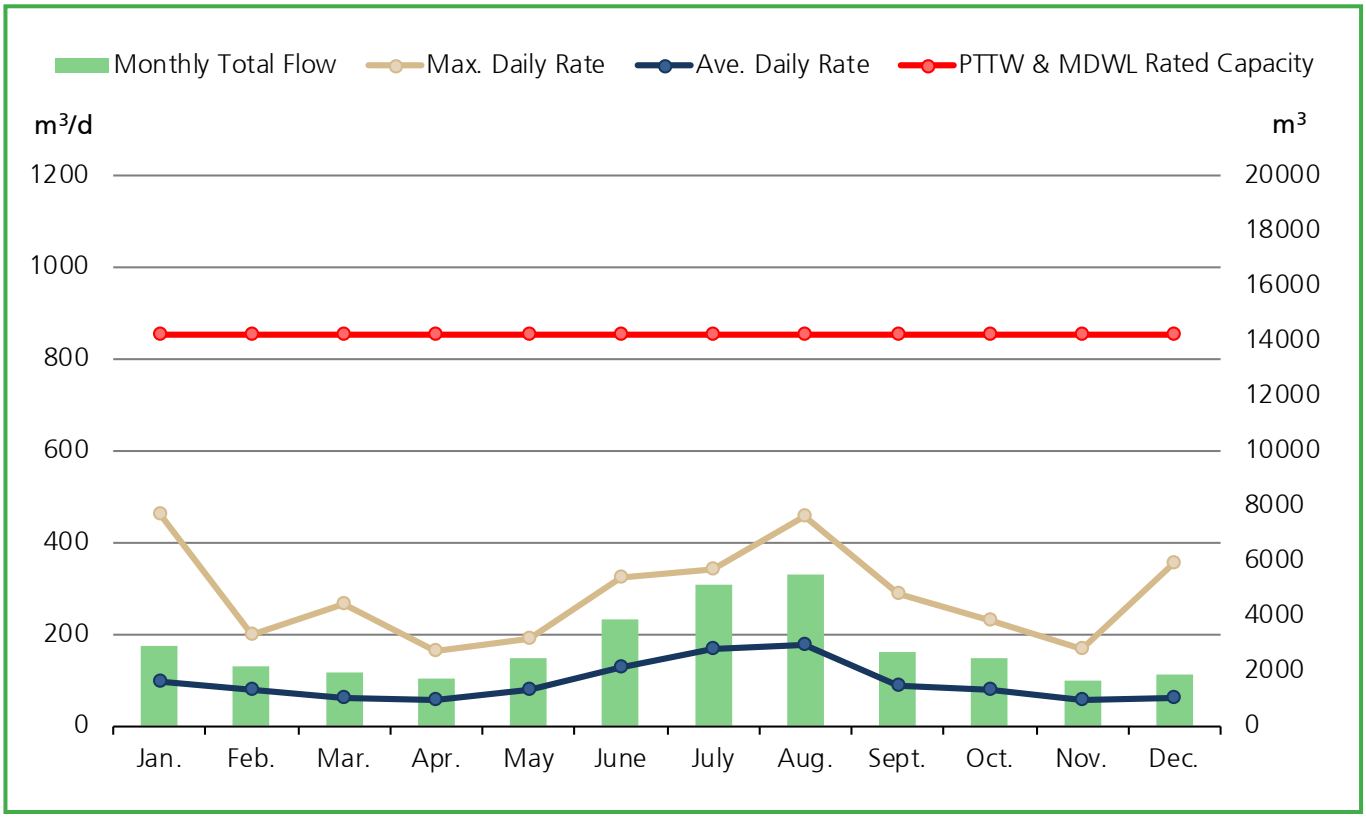
#	Finding Type	Finding	Status

We are pleased to report that there were no Inspection Findings or Self-Declared Non-Compliances.

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: CARLISLE WELLS (FDC01 & FDC02) - 2019 MONTHLY PRODUCTION (SUMMARY)

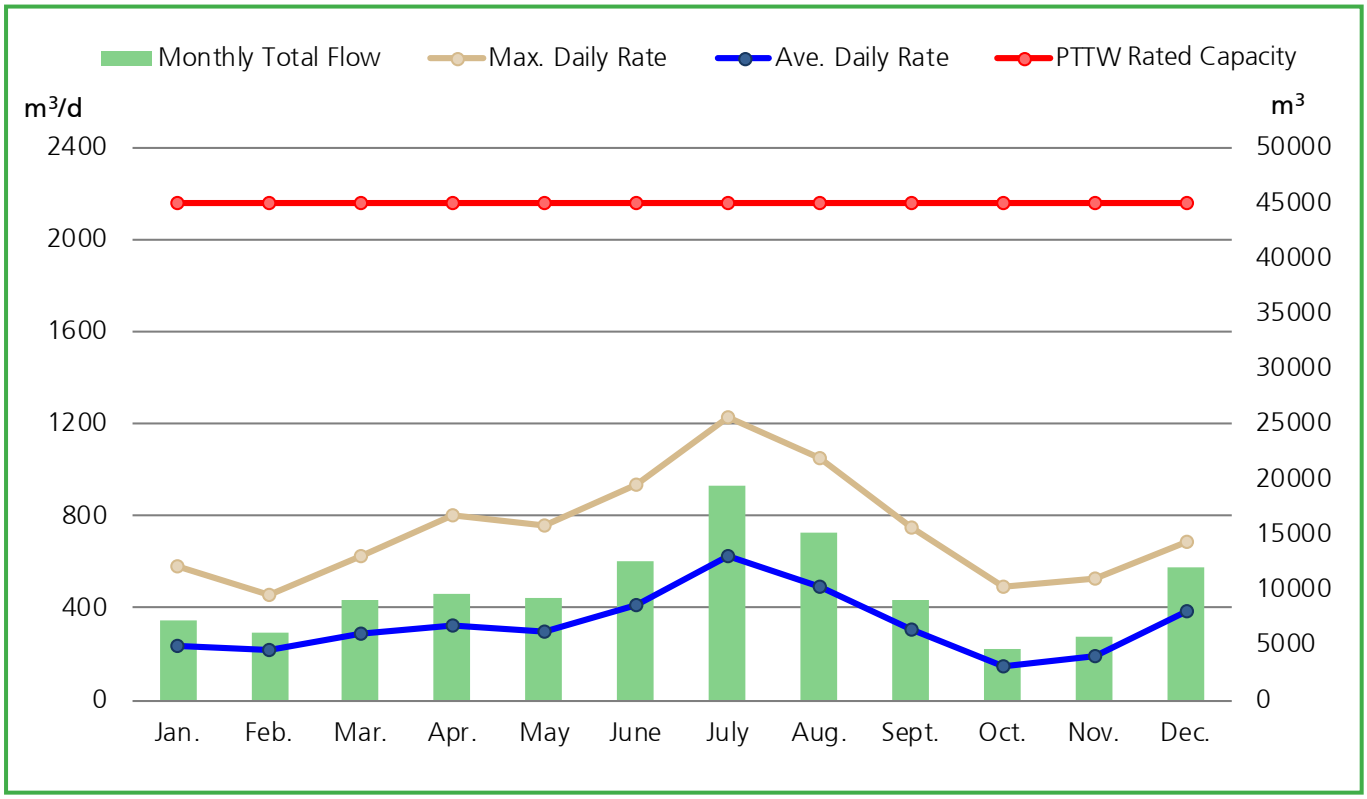


MAINTAINED COMPLIANCE

TABLE 5-1: CARLISLE WELLS (FDC01 & FDC02) - 2019 MONTHLY PRODUCTION (SUMMARY)

FDC01 & 02	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	2,931	2,166	1,924	1,726	2,443	3,870	5,136	5,501	2,667	2,436	1,644	1,875
Average Daily Rate	m^3/d	95	77	62	58	79	129	166	177	89	79	55	60
Maximum Daily Rate	m^3/d	459	197	263	161	191	321	339	455	287	228	167	355
PTTW & MDWL Daily Rated Capacity	m^3/d	851	851	851	851	851	851	851	851	851	851	851	851

FIGURE 5-2: CARLISLE WELL (FDC03R) - 2019 MONTHLY PRODUCTION (SUMMARY)



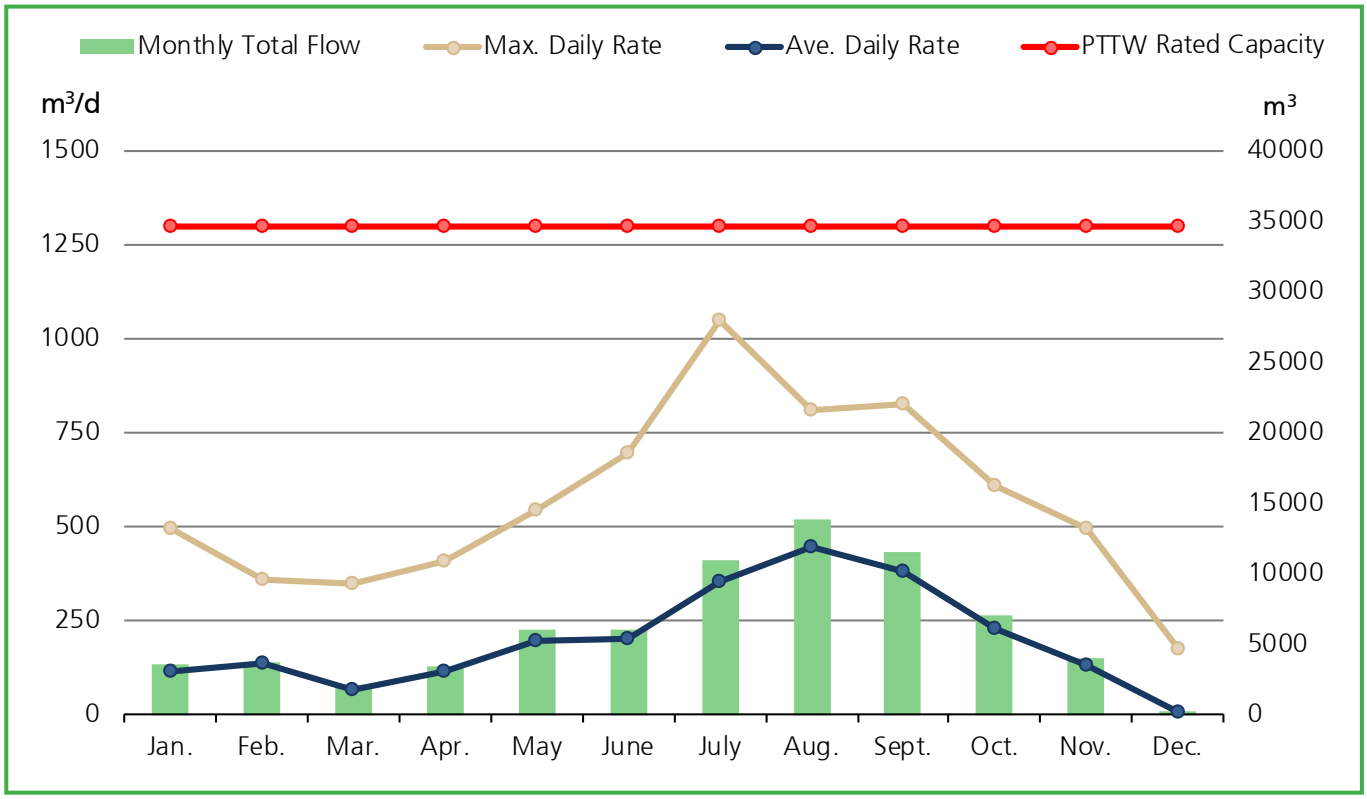
MAINTAINED COMPLIANCE

TABLE 5-2: CARLISLE WELL (FDC03R) - 2019 MONTHLY PRODUCTION (SUMMARY)

FDC03R	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	7,286	6,073	9,002	9,633	9,165	12,484	19,344	15,160	9,088	4,605	5,805	12,085
Average Daily Rate	m^3/d	235	217	290	321	296	416	624	489	303	149	193	390
Maximum Daily Rate	m^3/d	581	453	625	802	761	940	1,229	1,047	751	488	527	684
PTTW Daily Rated Capacity	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

Note: Carlisle DWS FDC03R and FDC05 have a combined rated capacity of 3456m^3/day as per MDWL.

FIGURE 5-3: CARLISLE WELL (FDC05) - 2019 MONTHLY PRODUCTION (SUMMARY)



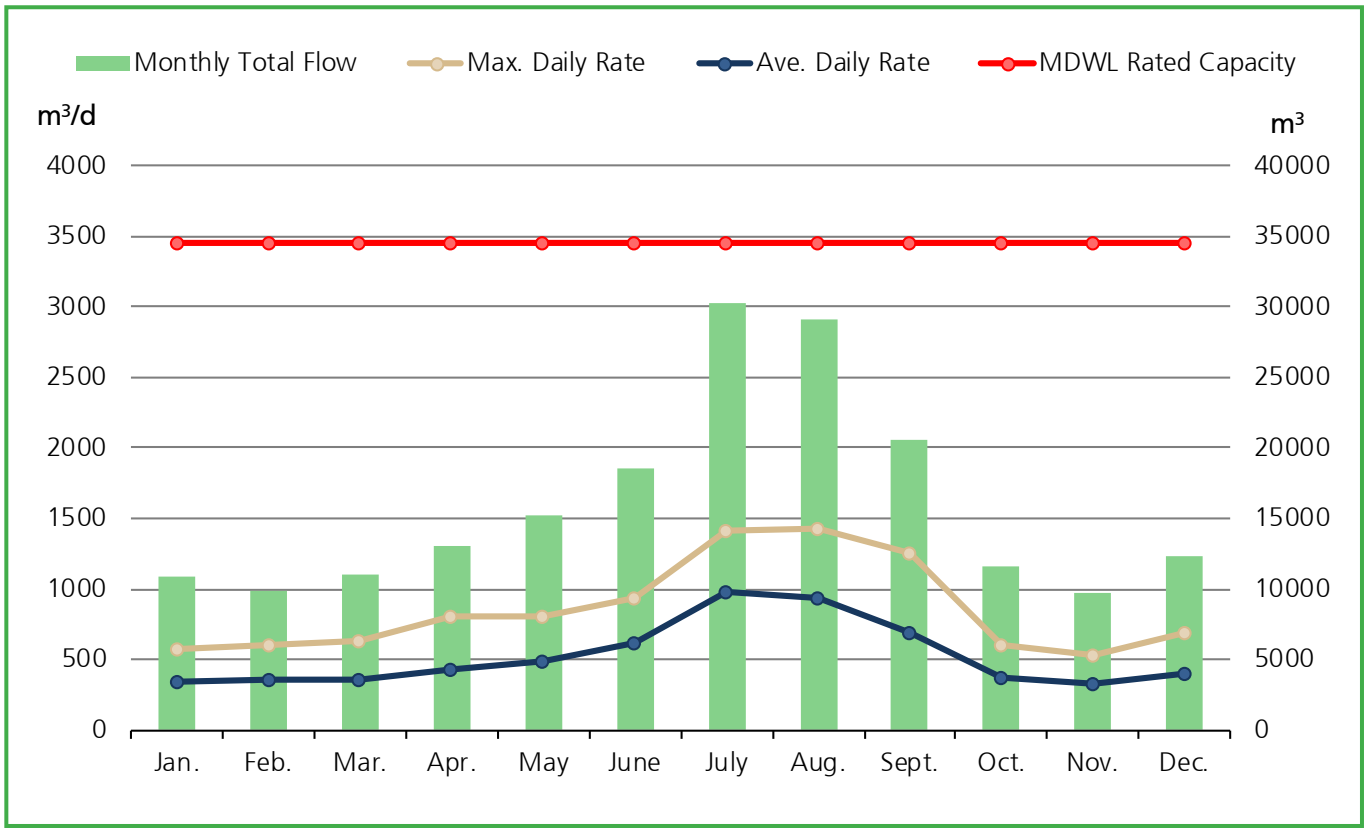
MAINTAINED COMPLIANCE

TABLE 5-3: CARLISLE WELL (FDC05) - 2019 MONTHLY PRODUCTION (SUMMARY)

FDC05	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	3,551	3,746	2,067	3,392	6,036	6,079	10,967	13,889	11,487	7,016	3,956	176
Average Daily Rate	m^3/d	115	134	67	113	195	203	354	448	383	226	132	6
Maximum Daily Rate	m^3/d	495	361	350	405	545	697	1,050	810	823	607	496	176
PTTW Daily Rated Capacity	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

Note: Carlisle DWS FDC03R and FDC05 have a combined rated capacity of 3456m^3/day as per MDWL.

FIGURE 5-4: CARLISLE WELL (FDC03R & FDC05) - 2019 MONTHLY PRODUCTION (SUMMARY)



MAINTAINED COMPLIANCE

TABLE 5-4: CARLISLE WELL (FDC03R & FDC05) - 2019 MONTHLY PRODUCTION (SUMMARY)

FDC03R & FDC05	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	10,837	9,819	11,070	13,025	15,200	18,563	30,311	29,049	20,575	11,621	9,761	12,261
Average Daily Rate	m^3/d	350	351	357	434	490	619	978	937	686	375	325	396
Maximum Daily Rate	m^3/d	581	601	625	802	812	940	1,414	1,433	1,247	607	527	684
PTTW Daily Rated Capacity FDC03R	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
PTTW Daily Rated Capacity FDC05	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
MDWL Daily Rated Capacity	m^3/d	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456

WATER QUALITY DATA

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	53	0	0	N/A	N/A
RAW - FDC02	53	0	0	N/A	N/A
RAW - FDC03(R)	52	0	0	N/A	N/A
RAW - FDC05	48	0	0	N/A	N/A
TREATED - FDC01	53	0	0	53	0 to 4
TREATED - FDC02	53	0	0	53	0 to 1
TREATED - FDC03(R)	52	0	0	52	0 to 1
TREATED - FDC05	48	0	0	48	0 to 6
DISTRIBUTION	208	0	0	208	0 to 13

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

NOTE: If results are obtained from continuous monitors, then 8,760 is reported 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 – 0.22	NTU
TURBIDITY - RAW - FDC02	53	0.06 – 0.32	NTU
TURBIDITY - RAW - FDC03(R)	8,760	0.03 – 0.35	NTU
TURBIDITY - RAW - FDC05	8,760	0.02 – 0.13	NTU
FREE CHLORINE - TREATED - FDC01 AND FDC02	8,760	1.27 – 2.87	mg/L
FREE CHLORINE - TREATED - FDC03(R) AND FDC05	8,760	1.38 – 2.48	mg/L
FREE CHLORINE - DISTRIBUTION	365	1.25 – 2.30	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	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
ARSENIC	2019-04-30 to 2019-10-29	0.0001 to 0.0002	mg/L	0
BARIUM	2019-04-30 to 2019-10-29	0.0856 to 0.0858	mg/L	0
BORON	2019-04-30 to 2019-10-29	<0.010 to 0.019	mg/L	0
CADMIUM	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
CHROMIUM	2019-04-30 to 2019-10-29	<0.0001 to 0.0002	mg/L	0
FLUORIDE	2019-04-30 to 2019-10-29	0.08	mg/L	0
MERCURY	2019-04-30 to 2019-10-29	<0.05	mg/L	0
NITRATE AS N	2019-01-23 to 2019-10-29	1.39 to 3.27	mg/L	0
NITRITE AS N	2019-01-23 to 2019-10-29	<0.01	mg/L	0
SELENIUM	2019-04-30 to 2019-10-29	0.0002	mg/L	0
SODIUM	2019-04-30 to 2019-10-29	16.9 to 21.6	mg/L	0
URANIUM	2019-04-30 to 2019-10-29	0.443 to 0.477	ug/L	0
CARLISLE WELL FDC02 - TREATED				
ANTIMONY	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
ARSENIC	2019-04-30 to 2019-10-29	0.0001 to 0.0002	mg/L	0
BARIUM	2019-04-30 to 2019-10-29	0.0870 to 0.0905	mg/L	0
BORON	2019-04-30 to 2019-10-29	0.011 to 0.018	mg/L	0
CADMIUM	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
CHROMIUM	2019-04-30 to 2019-10-29	0.0002 to 0.0006	mg/L	0
FLUORIDE	2019-04-30 to 2019-10-29	0.07 to 0.08	mg/L	0
MERCURY	2019-04-30 to 2019-10-29	<0.05	mg/L	0
NITRATE AS N	2019-01-23 to 2019-10-29	2.29 to 2.99	mg/L	0
NITRITE AS N	2019-01-23 to 2019-10-29	<0.01	mg/L	0
SELENIUM	2019-04-30 to 2019-10-29	0.0002	mg/L	0
SODIUM	2019-04-30 to 2019-10-29	20.6 to 31.1	mg/L	0
URANIUM	2019-04-30 to 2019-10-29	0.374 to 0.416	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	2019-04-30 to 2019-10-29	0.0001 to 0.0002	mg/L	0
ARSENIC	2019-04-30 to 2019-10-29	0.0004 to 0.0005	mg/L	0
BARIUM	2019-04-30 to 2019-10-29	0.0772 to 0.0816	mg/L	0
BORON	2019-04-30 to 2019-10-29	0.019 to 0.024	mg/L	0
CADMIUM	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
CHROMIUM	2019-04-30 to 2019-10-29	<0.0001 to 0.0004	mg/L	0
FLUORIDE	2019-04-30 to 2019-10-29	0.07 to 0.08	mg/L	0
MERCURY	2019-04-30 to 2019-10-29	<0.05	mg/L	0
NITRATE AS N	2019-01-23 to 2019-10-29	0.01 to 0.77	mg/L	0
NITRITE AS N	2019-01-23 to 2019-10-29	<0.01	mg/L	0
SELENIUM	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
SODIUM	2019-04-30 to 2019-10-29	53.9 to 55.5	mg/L	0
URANIUM	2019-04-30 to 2019-10-29	0.683 to 0.697	ug/L	0
CARLISLE WELL FDC05 - TREATED				
ANTIMONY	2019-04-30 to 2019-10-29	<0.0001 to 0.0001	mg/L	0
ARSENIC	2019-04-30 to 2019-10-29	0.0005 to 0.0008	mg/L	0
BARIUM	2019-04-30 to 2019-10-29	0.0758 to 0.0823	mg/L	0
BORON	2019-04-30 to 2019-10-29	0.019 to 0.023	mg/L	0
CADMIUM	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
CHROMIUM	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
FLUORIDE	2019-04-30 to 2019-10-29	0.08	mg/L	0
MERCURY	2019-04-30 to 2019-10-29	<0.05	mg/L	0
NITRATE AS N	2019-01-23 to 2019-10-29	<0.01 to 0.26	mg/L	0
NITRITE AS N	2019-01-23 to 2019-10-29	<0.01	mg/L	0
SELENIUM	2019-04-30 to 2019-10-29	<0.0001	mg/L	0
SODIUM	2019-04-30 to 2019-10-29	51.6 to 59.6	mg/L	0
URANIUM	2019-04-30 to 2019-10-29	0.555 to 0.613	ug/L	0

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

LOCATION TYPE	NO. OF POINTS SAMPLED	NO. OF LEAD SAMPLES TAKEN	NO. OF pH AND ALKALINITY 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	N/A
PLUMBING-R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISTRIBUTION	4	2	4	7.25 to 7.44	322 to 328	0.0006 to 0.0008	0	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	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROETHANE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
BENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
CARBON TETRACHLORIDE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
CHLOROBENZENE	2019-04-30 to 2019-10-29	<0.3	ug/L	0
DICHLOROMETHANE	2019-04-30 to 2019-10-29	<0.5	ug/L	0
ETHYLBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TETRACHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TOLUENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TRICHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
VINYL CHLORIDE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
XYLENE	2019-04-30 to 2019-10-29	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2019-04-30	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2019-04-30	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2019-04-30	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2019-04-30	<0.15	ug/L	0
ALACHLOR	2019-04-30	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2019-04-30	<0.01	ug/L	0
AZINPHOS-METHYL	2019-04-30	<0.05	ug/L	0
BENZO[A]PYRENE	2019-04-30	<0.004	ug/L	0
BROMOXYNIL	2019-04-30	<0.33	ug/L	0
CARBARYL	2019-04-30	<0.05	ug/L	0
CARBOFURAN	2019-04-30	<0.01	ug/L	0
CHLORPYRIFOS	2019-04-30	<0.02	ug/L	0
DIAZINON	2019-04-30	<0.02	ug/L	0
DICAMBA	2019-04-30	<0.20	ug/L	0
DICLOFOP-METHYL	2019-04-30	<0.40	ug/L	0
DIMETHOATE	2019-04-30	<0.06	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	2019-04-30	<1	ug/L	0
DIURON	2019-04-30	<0.03	ug/L	0
GLYPHOSATE	2019-04-30	<1	ug/L	0
MALATHION	2019-04-30	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2019-04-30	<0.00012	mg/L	0
METOLACHLOR	2019-04-30	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2019-04-30	<0.02	ug/L	0
PARAQUAT	2019-04-30	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2019-04-30	<0.05	ug/L	0
PENTACHLOROPHENOL	2019-04-30	<0.15	ug/L	0
PHORATE	2019-04-30	<0.01	ug/L	0
PICLORAM	2019-04-30	<1	ug/L	0
PROMETRYNE	2019-04-30	<0.03	ug/L	0
SIMAZINE	2019-04-30	<0.01	ug/L	0
TERBUFOS	2019-04-30	<0.01	ug/L	0
TRIALLATE	2019-04-30	<0.01	ug/L	0
TRIFLURALIN	2019-04-30	<0.02	ug/L	0
CARLISLE WELL FDC02 - TREATED				
1,1-DICHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROETHANE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
BENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
CARBON TETRACHLORIDE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
CHLOROBENZENE	2019-04-30 to 2019-10-29	<0.3	ug/L	0
DICHLOROMETHANE	2019-04-30 to 2019-10-29	<0.5	ug/L	0
ETHYLBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TETRACHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TOLUENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TRICHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
VINYL CHLORIDE	2019-04-30 to 2019-10-29	<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	2019-04-30 to 2019-10-29	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2019-04-30	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2019-04-30	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2019-04-30	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2019-04-30	<0.15	ug/L	0
ALACHLOR	2019-04-30	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2019-04-30	<0.01	ug/L	0
AZINPHOS-METHYL	2019-04-30	<0.05	ug/L	0
BENZO[A]PYRENE	2019-04-30	<0.004	ug/L	0
BROMOXYNIL	2019-04-30	<0.33	ug/L	0
CARBARYL	2019-04-30	<0.05	ug/L	0
CARBOFURAN	2019-04-30	<0.01	ug/L	0
CHLORPYRIFOS	2019-04-30	<0.02	ug/L	0
DIAZINON	2019-04-30	<0.02	ug/L	0
DICAMBA	2019-04-30	<0.20	ug/L	0
DICLOFOP-METHYL	2019-04-30	<0.40	ug/L	0
DIMETHOATE	2019-04-30	<0.06	ug/L	0
DIQUAT	2019-04-30	<1	ug/L	0
DIURON	2019-04-30	<0.03	ug/L	0
GLYPHOSATE	2019-04-30	<1	ug/L	0
MALATHION	2019-04-30	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2019-04-30	<0.00012	mg/L	0
METOLACHLOR	2019-04-30	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2019-04-30	<0.02	ug/L	0
PARAQUAT	2019-04-30	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2019-04-30	<0.05	ug/L	0
PENTACHLOROPHENOL	2019-04-30	<0.15	ug/L	0
PHORATE	2019-04-30	<0.01	ug/L	0
PICLORAM	2019-04-30	<1	ug/L	0
PROMETRYNE	2019-04-30	<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	2019-04-30	<0.01	ug/L	0
TERBUFOS	2019-04-30	<0.01	ug/L	0
TRIALLATE	2019-04-30	<0.01	ug/L	0
TRIFLURALIN	2019-04-30	<0.02	ug/L	0
CARLISLE WELL FDC03(R) - TREATED				
1,1-DICHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROETHANE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
BENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
CARBON TETRACHLORIDE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
CHLOROBENZENE	2019-04-30 to 2019-10-29	<0.3	ug/L	0
DICHLOROMETHANE	2019-04-30 to 2019-10-29	<0.5	ug/L	0
ETHYLBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TETRACHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TOLUENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TRICHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
VINYL CHLORIDE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
XYLENE	2019-04-30 to 2019-10-29	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2019-04-30	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2019-04-30	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2019-04-30	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2019-04-30	<0.15	ug/L	0
ALACHLOR	2019-04-30	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2019-04-30	<0.01	ug/L	0
AZINPHOS-METHYL	2019-04-30	<0.05	ug/L	0
BENZO[A]PYRENE	2019-04-30	<0.004	ug/L	0
BROMOXYNIL	2019-04-30	<0.33	ug/L	0
CARBARYL	2019-04-30	<0.05	ug/L	0
CARBOFURAN	2019-04-30	<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	2019-04-30	<0.02	ug/L	0
DIAZINON	2019-04-30	<0.02	ug/L	0
DICAMBA	2019-04-30	<0.20	ug/L	0
DICLOFOP-METHYL	2019-04-30	<0.40	ug/L	0
DIMETHOATE	2019-04-30	<0.06	ug/L	0
DIQUAT	2019-04-30	<1	ug/L	0
DIURON	2019-04-30	<0.03	ug/L	0
GLYPHOSATE	2019-04-30	<1	ug/L	0
MALATHION	2019-04-30	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2019-04-30	<0.00012	mg/L	0
METOLACHLOR	2019-04-30	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2019-04-30	<0.02	ug/L	0
PARAQUAT	2019-04-30	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2019-04-30	<0.05	ug/L	0
PENTACHLOROPHENOL	2019-04-30	<0.15	ug/L	0
PHORATE	2019-04-30	<0.01	ug/L	0
PICLORAM	2019-04-30	<1	ug/L	0
PROMETRYNE	2019-04-30	<0.03	ug/L	0
SIMAZINE	2019-04-30	<0.01	ug/L	0
TERBUFOS	2019-04-30	<0.01	ug/L	0
TRIALLATE	2019-04-30	<0.01	ug/L	0
TRIFLURALIN	2019-04-30	<0.02	ug/L	0
CARLISLE WELL FDC05 - TREATED				
1,1-DICHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,2-DICHLOROETHANE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
BENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
CARBON TETRACHLORIDE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
CHLOROBENZENE	2019-04-30 to 2019-10-29	<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	2019-04-30 to 2019-10-29	<0.5	ug/L	0
ETHYLBENZENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TETRACHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TOLUENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
TRICHLOROETHYLENE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
VINYL CHLORIDE	2019-04-30 to 2019-10-29	<0.2	ug/L	0
XYLENE	2019-04-30 to 2019-10-29	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2019-04-30	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2019-04-30	<0.25	ug/L	0
2,4-DICHLOROPHENOXY ACETIC ACID (2,4-D)	2019-04-30	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2019-04-30	<0.15	ug/L	0
ALACHLOR	2019-04-30	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE METABOLITES	2019-04-30	<0.01	ug/L	0
AZINPHOS-METHYL	2019-04-30	<0.05	ug/L	0
BENZO[A]PYRENE	2019-04-30	<0.004	ug/L	0
BROMOXYNIL	2019-04-30	<0.33	ug/L	0
CARBARYL	2019-04-30	<0.05	ug/L	0
CARBOFURAN	2019-04-30	<0.01	ug/L	0
CHLORPYRIFOS	2019-04-30	<0.02	ug/L	0
DIAZINON	2019-04-30	<0.02	ug/L	0
DICAMBA	2019-04-30	<0.20	ug/L	0
DICLOFOP-METHYL	2019-04-30	<0.40	ug/L	0
DIMETHOATE	2019-04-30	<0.06	ug/L	0
DIQUAT	2019-04-30	<1	ug/L	0
DIURON	2019-04-30	<0.03	ug/L	0
GLYPHOSATE	2019-04-30	<1	ug/L	0
MALATHION	2019-04-30	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2019-04-30	<0.00012	mg/L	0
METOLACHLOR	2019-04-30	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2019-04-30	<0.02	ug/L	0

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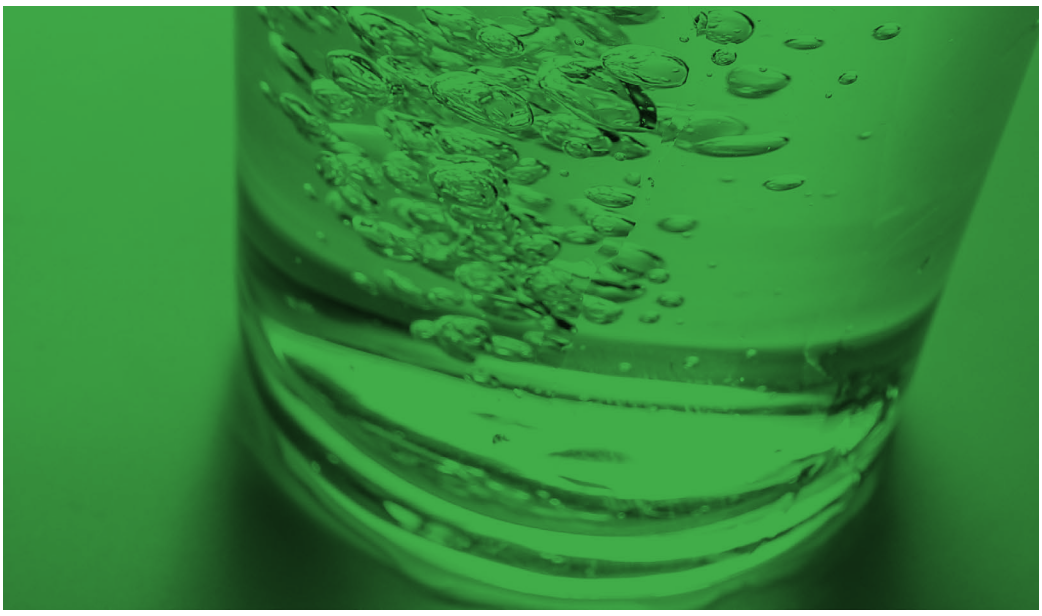
Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
PARAQUAT	2019-04-30	<1	ug/L	0
POLYCHLORINATED BIPHENYLS (PCB)	2019-04-30	<0.05	ug/L	0
PENTACHLOROPHENOL	2019-04-30	<0.15	ug/L	0
PHORATE	2019-04-30	<0.01	ug/L	0
PICLORAM	2019-04-30	<1	ug/L	0
PROMETRYNE	2019-04-30	<0.03	ug/L	0
SIMAZINE	2019-04-30	<0.01	ug/L	0
TERBUFOS	2019-04-30	<0.01	ug/L	0
TRIALLATE	2019-04-30	<0.01	ug/L	0
TRIFLURALIN	2019-04-30	<0.02	ug/L	0
DISTRIBUTION				
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	13.2	ug/L	0
HALOACETIC ACIDS	2019-01-23 to 2019-10-29	<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.

Parameters Exceeding Prescribed Half-Standard

There were no Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03)



LYNDEN DRINKING WATER SYSTEM
WATER QUALITY ANNUAL REPORT

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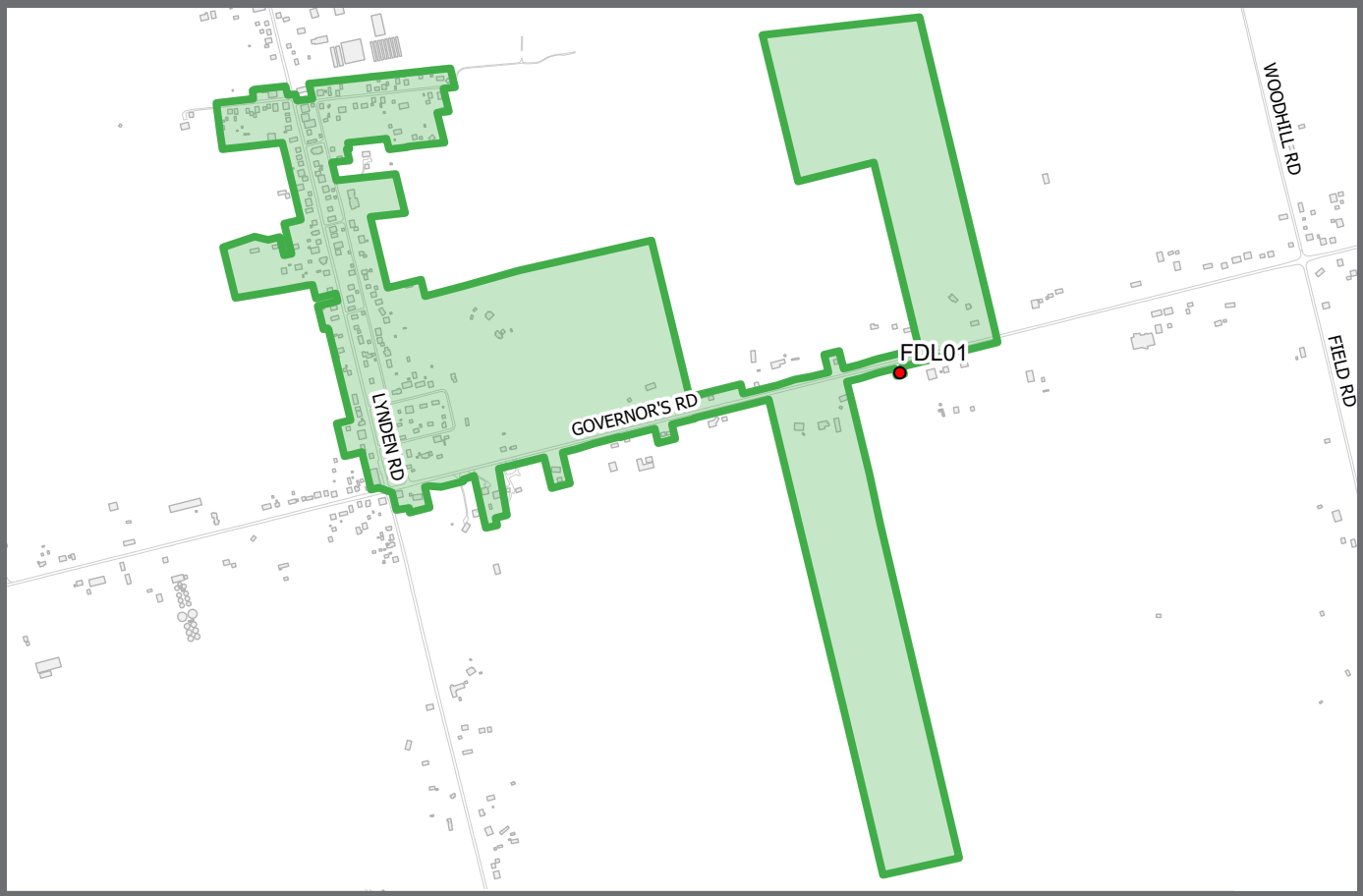


LYNDEN DRINKING WATER SYSTEM

BCOS
BEYOND COMPLIANCE OPERATING SYSTEM

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre

General Information

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, 2019 to December 31, 2019

The Lynden ground water supply system consists of one well, one well station, treatment, sampling and analysis which services a population of approximately 390 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 sodium hypochlorite (chlorine) 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.

Provision of Drinking Water to Other Municipalities

The following is a list of municipal drinking water systems which receive drinking water from the Lynden System:

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

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

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

Water Treatment Chemicals Used During This Reporting Period

- Sodium Hypochlorite

Breakdown of Significant Monetary Expenses

The following table highlights the significant expenses that were incurred for the installation of required equipment in 2019. There were no significant expenses related to the replacement or repair of equipment in 2019.

Lynden Additional Water Supply $3,848,000

Adverse Test Results and Reportable Incidents

The following table outlines 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 (y-m-d)	Location of Adverse	Adverse Water Quality Incident	Resolution
2019-07-04	Lynden Sampling Station A	Total Coliforms = 9 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.
2019-11-01	Lynden Entry Point	Lead = 0.0287 mg/L (Regulatory requirement is ≤ 0.010 mg/L)	→ Ongoing resolution. Drinking Water Advisory is still in effect. The adverse was not confirmed.

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

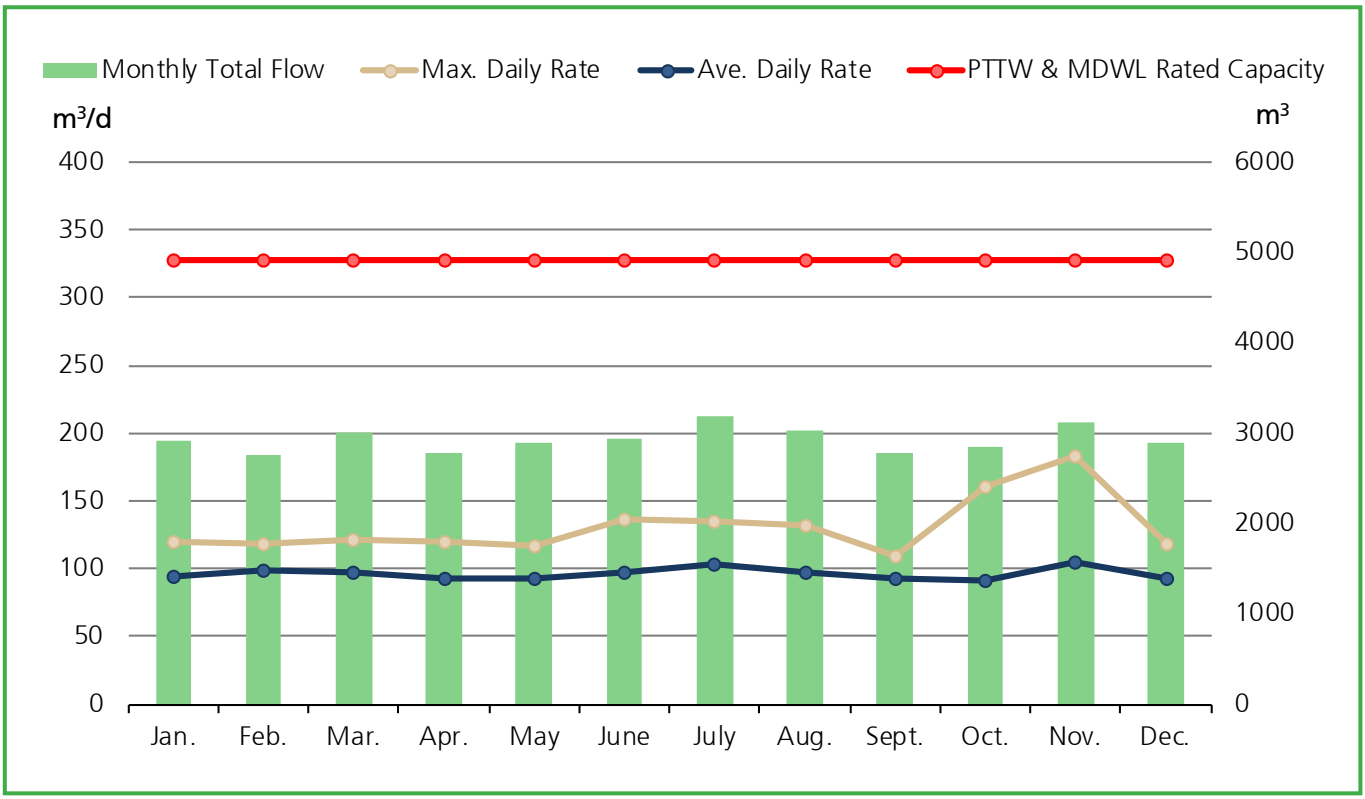
A summary of findings that were either issued during the MECP inspection or self-declared during the 2019 calendar year (Inspection date: July 25, 2019):

#	Finding Type	Finding	Status
1	Non-compliance	The City is advised to ensure that the required information (e.g. rated capacity) is listed in the Summary Report going forward as per O. Reg 170, Schedule 22, section 22-2.	→ Included in the 2019 Annual Summary Report
2	Recommendation	The owner had not implemented a program for the flushing of watermains as per industry standards.	→ Actions pending
3	Recommendation	Records did not confirm that disinfectant residuals were routinely checked at the extremities and "dead ends" of the distribution system.	→ Actions pending

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: LYNDEN WELL (FDL01) - 2019 MONTHLY PRODUCTION (SUMMARY)



MAINTAINED COMPLIANCE

TABLE 6-1: LYNDEN WELL (FDL01) - 2019 MONTHLY PRODUCTION (SUMMARY)

FDL01	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	2,908	2,758	3,016	2,770	2,899	2,934	3,195	3,019	2,789	2,844	3,130	2,890
Average Daily Rate	m^3/d	94	99	97	92	94	98	103	97	93	92	104	93
Maximum Daily Rate	m^3/d	120	119	121	120	116	136	136	133	109	161	183	118
PTTW & MDWL Daily Rated Capacity	m^3/d	327	327	327	327	327	327	327	327	327	327	327	327

WATER QUALITY DATA

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	53	0	0	52	0 to 12
DISTRIBUTION	155	0	0 to 9	153	0 to 17

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

NOTE: If results are obtained from continuous monitors, then 8,760 is reported 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 – 0.30	NTU
FREE CHLORINE - TREATED	8,760	0.42 – 2.68	mg/L
FREE CHLORINE - DISTRIBUTION	365	0.40 – 2.18	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	24	2019-01-09 to 2019-12-18	<0.0001 to 0.0045	mg/L
LEAD - DISTRIBUTION	72	2019-01-09 to 2019-12-18	<0.0001 to 0.0003	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	2019-05-01 to 2019-10-31	<0.0001 to 0.0001	mg/L	0
ARSENIC	2019-05-01 to 2019-10-31	0.0001 to 0.0004	mg/L	0
BARIUM	2019-05-01 to 2019-10-31	0.605 to 0.805	mg/L	0
BORON	2019-05-01 to 2019-10-31	0.454 to 0.462	mg/L	0
CADMIUM	2019-05-01 to 2019-10-31	<0.0001 to 0.0001	mg/L	0
CHROMIUM	2019-05-01 to 2019-10-31	0.0004 to 0.0040	mg/L	0
FLUORIDE	2019-05-01 to 2019-10-31	0.64 to 0.66	mg/L	0
MERCURY	2019-05-01 to 2019-10-31	<0.05	mg/L	0
NITRATE AS N	2019-01-24 to 2019-10-31	0.02	mg/L	0
NITRITE AS N	2019-01-24 to 2019-10-31	<0.01	mg/L	0
SELENIUM	2019-05-01 to 2019-10-31	<0.0001	mg/L	0
SODIUM	2019-05-01 to 2019-10-31	58.1 to 60.9	mg/L	0
URANIUM	2019-05-01 to 2019-10-31	<0.002 to 0.006	ug/L	0

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

LOCATION TYPE	NO. OF POINTS SAMPLED	NO. OF LEAD SAMPLES TAKEN	NO. OF pH AND ALKALINITY 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	N/A
PLUMBING-R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISTRIBUTION	2	1	2	8.66 to 8.69	94	0.0008	0	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
LYNDEN WELL TREATED				
1,1-DICHLOROETHYLENE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
1,2-DICHLOROETHANE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
BENZENE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
CARBON TETRACHLORIDE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
CHLOROBENZENE	2019-05-01 to 2019-10-31	<0.3	ug/L	0
DICHLOROMETHANE	2019-05-01 to 2019-10-31	<0.5	ug/L	0
ETHYLBENZENE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
TETRACHLOROETHYLENE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
TOLUENE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
TRICHLOROETHYLENE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
VINYL CHLORIDE	2019-05-01 to 2019-10-31	<0.2	ug/L	0
XYLENE	2019-05-01 to 2019-10-31	<0.3	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2019-05-01	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2019-05-01	<0.25	ug/L	0
2,4-D	2019-05-01	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2019-05-01	<0.15	ug/L	0
ALACHLOR	2019-05-01	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2019-05-01	<0.01	ug/L	0
AZINPHOS-METHYL	2019-05-01	<0.05	ug/L	0
BENZO[A]PYRENE	2019-05-01	<0.004	ug/L	0
BROMOXYNIL	2019-05-01	<0.33	ug/L	0
CARBARYL	2019-05-01	<0.05	ug/L	0
CARBOFURAN	2019-05-01	<0.01	ug/L	0
CHLORPYRIFOS (DURSBAN)	2019-05-01	<0.02	ug/L	0
DIAZINON	2019-05-01	<0.02	ug/L	0
DICAMBA	2019-05-01	<0.20	ug/L	0
DICLOFOP-METHYL	2018-2019-05-01-16	<0.40	ug/L	0

...continued on next page

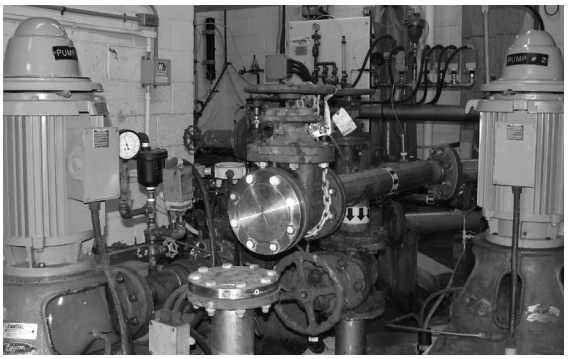
Summary of Organic parameters required by Regulation 170/03 and tested during this reporting period. (continued)...

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DIMETHOATE	2019-05-01	<0.06	ug/L	0
DIQUAT	2019-05-01	<1	ug/L	0
DIURON	2019-05-01	<0.03	ug/L	0
GLYPHOSATE	2019-05-01	<1	ug/L	0
MALATHION	2019-05-01	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2019-05-01	<0.00012	mg/L	0
METOLACHLOR	2019-05-01	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2019-05-01	<0.02	ug/L	0
PARAQUAT	2019-05-01	<1	ug/L	0
PCBSTOTAL	2019-05-01	<0.05	ug/L	0
PENTACHLOROPHENOL	2019-05-01	<0.15	ug/L	0
PHORATE	2019-05-01	<0.01	ug/L	0
PICLORAM	2019-05-01	<1	ug/L	0
PROMETRYNE	2019-05-01	<0.03	ug/L	0
SIMAZINE	2019-05-01	<0.01	ug/L	0
TERBUFOS	2019-05-01	<0.01	ug/L	0
TRIALLATE	2019-05-01	<0.01	ug/L	0
TRIFLURALIN	2019-05-01	<0.02	ug/L	0

DISTRIBUTION

TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	56.8	ug/L	0
HALOACETIC ACIDS	2019-01-24 to 2019-10-31	<5.3 to 9.2	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.

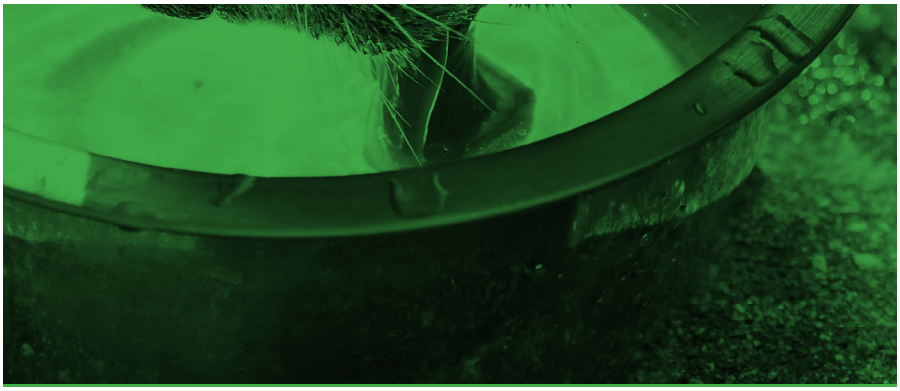


Parameters Exceeding Prescribed Half-Standard

Summary of 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
DISTRIBUTION - TOTAL TRIHALOMETHANES	2019-07-17	86	ug/L
DISTRIBUTION - TOTAL TRIHALOMETHANES	2019-10-31	55	ug/L
TREATED - BARIUM	2019-01-24	0.605	mg/L
TREATED - BARIUM	2019-05-01	0.612	mg/L
TREATED - BARIUM	2019-07-17	0.608	mg/L
TREATED - BARIUM	2019-10-31	0.805	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)



INFORMATION REPORT

TO:	Chair and Members Audit, Finance and Administration Committee
COMMITTEE DATE:	March 26, 2020
SUBJECT/REPORT NO:	Agreement for Continued Supply of Raw Water to 690 Strathearne Avenue North (FCS18049(e)) (Ward 4) **(Outstanding Business List Item)**
WARD(S) AFFECTED:	City Wide
PREPARED BY:	John Savoia (905) 546-2424 Ext. 7298
SUBMITTED BY: **SIGNATURE:**	Brian McMullen Director, Financial Planning, Administration and Policy Corporate Services Department

COUNCIL DIRECTION

At the February 13, 2019 meeting of Council (Council Minutes 19-003, Item 10.1), Council directed staff to report back on an agreement for the continued supply of raw water to 690 Strathearne Avenue North.

INFORMATION

Report FCS18049(e) provides an update to Council regarding a new Raw Water Supply Agreement (Agreement) that recently has been fully executed between the City and ArcelorMittal Long Products Canada (AMLPC) for the continued supply of raw water to AMLPC's manufacturing facility located at 690 Strathearne Avenue North.

In April 2018, Council authorized and directed staff to negotiate and enter into, on behalf of the City, a raw water supply agreement with the owner of 690 Strathearne Avenue North, currently AMLPC, for the continued supply of raw water by the City. The Agreement must incorporate the following terms and conditions:

- That AMLPC remains fully responsible for the repair and maintenance costs associated with the raw water pump station (located at the City's Woodward Avenue Water Treatment Plant site) supplying raw water to 690 Strathearne Avenue North;

- That AMLPC remains fully responsible for the repair and maintenance of the water meter chamber, pipeline and all works and / or infrastructure required in connection to the raw water supply;

- That the variable raw water rates charged to AMLPC ensure, at a minimum, full cost recovery;

- That the fixed daily water charges, based on the size of the water meter, be billed to AMLPC at the same rates that the City charges to its water consumers within the City of Hamilton; and

- That an easement be granted to AMLPC associated with the AMLPC-owned pipeline that conveys the raw water supplied to 690 Strathearne Avenue North with related annual charges for easement rights be commensurate with the current market value of those rights.

An ongoing consideration regarding the supply of raw water from the City to a single industrial customer is with respect to the bonusing provisions within the *Municipal Act* (Section 106). The new agreement must fundamentally mirror the original 1965 agreement to ensure the City is not responsible for ongoing operating and capital costs associated with this unique supply, nor can the City have liability exposure, if and when, the raw water supply is interrupted.

After nearly two years of negotiations, a new Agreement, attached as Appendix “A” to Report FCS18049(e), has been executed.

The terms of the Agreement include:

- Term of 20 years from the date of execution of the Agreement;

- Charges for raw water are as follows:

    (i) Fixed Charges – are based on the size of the water meter and will be charged at the same rates that City charges to its consumers within the City;

    (ii) Variable (Consumption) Charges – raw water consumption will be charged on a per cubic metre basis at 7.5% of the rate Hamilton charges for the supply of potable water;

- In lieu of an easement agreement, AMLPC has been granted a licence under which AMLPC shall have the right to have their pipeline that conveys the raw water supplied to 690 Strathearne Avenue North occupy City property;

- AMLPC shall pay an annual Licence Fee, plus applicable sales taxes, during each year of the Term in accordance with the following chart:

Timeframe	Amount of Annual Licence Fee
January 15, 2020 to January 14, 2025	$18,500.00
January 15, 2025 to January 14, 2030	$19,425.00
January 15, 2030 to January 14, 2035	$20,400.00
January 15, 2035 to January 14, 2040	$20,420.00

- By August 31, 2020, AMLPC has agreed to the installation of a backflow prevention device satisfactory to the City;

- AMLPC to pay $443 K towards the costs of electrical upgrades required for the Raw Water Pumping Station;

- AMLPC to pay for the actual costs needed to bring the Raw Water Pumping Station to a reasonable level of repair;

- AMLPC continues to be fully responsible for all operating, repair and maintenance costs associated with the Raw Water Pumping Station; and

- There continues to be no liability obligation to the City in connection with interruption / disruption of raw water supply or the provision of notice.

In September 2019, a legal proceeding was commenced by AMLPC seeking injunctions against the City that would have the effect of requiring the City to continue the supply of raw water to AMLPC despite the absence of a contract. The execution of the Agreement was contingent on the termination of the existing litigation through the issuance of a consent order.

The 2020 Rate Supported Budget includes $125 K in revenues related to the supply of raw water to AMLPC.

Historical Background

In 1965, the City had entered into an agreement with the former Steel Company of Canada (Stelco) to supply chlorinated raw water from a raw water pumping station (historically known as the Stelco Pumping Station) (Raw Water Pumping Station), located at the City's Woodward Avenue Water Treatment Plant (WTP). In addition, in 1966, the same two parties entered into an easement agreement which allowed Stelco to construct, maintain and operate a watermain for the conveyance of the chlorinated raw water from the Raw Water Pumping Station to Stelco's property located at 690 Strathearne Avenue North ("Easement") to two Stelco facilities, #2 Rod Mill and Stelwire over City lands.

Both the Raw Water Agreement and the Easement expired on April 26, 1985. However, the original two parties and their successors, namely the City and AMLPC, have to date continued to act in accordance with the same terms and conditions as are contained in the original Raw Water Agreement and Easement.

In 2004, Stelco closed the #2 Rod Mill and the mill was dismantled. Subsequently, the property was sold to the Hamilton Port Authority and the property's connection to the raw water pipeline was severed. AMLPC's 2005 purchase of Stelco's former Stelwire operation located at 690 Strathearne Avenue North resulted in AMLPC's wire plant being the sole customer of this chlorinated raw water supply from the City. This acquisition also led to AMLPC becoming the owner of the watermain connecting the Stelco Pumping Station to AMLPC's operations. AMLPC has indicated to staff that the raw water supply is an essential requirement to the viability of their wire plant in Hamilton (for further details refer to Report FCS18049(a)).

Over the past decade, the City had raised significant concerns regarding the Raw Water Pumping Station's reliability and repair and the associated capital maintenance requirements that this facility would require to maintain its operation.

Report FCS18049(e) addresses Outstanding Business List Item No. 19-B (Agreement for the Supply of Raw Water to 690 Strathearne Avenue North). This item can be removed from the Audit, Finance and Administration Committee Outstanding Business List.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report FCS18049(e) – City of Hamilton / ArcelorMittal Long Products Canada GP Raw Water Supply Agreement

JS/dt

This Agreement made as of the 7th[th] day of February, 2020

BETWEEN:

CITY OF HAMILTON
(hereinafter called "Hamilton")

OF THE FIRST PART,

-and-

ARCELORMITTAL LONG PRODUCTS CANADA G.P
(hereinafter called "AMLPC")

OF THE SECOND PART,

WHEREAS Hamilton is a municipal corporation governed in accordance with the *Municipal Act, 2001, c. 25 as amended* ("the Act"), under which it exercises the following statutory authority:

1. Pursuant to sections 8, 9 and 10 of the Act, Hamilton is authorized to regulate matters within its jurisdiction, which includes regulation within its geographical boundaries over water distribution, production, treatment and storage;

2. Pursuant to section 23 of the Act, Hamilton is authorized to enter into an agreement with any person to construct, maintain and operate a private water or sewage works; and,

3. Pursuant to section 391 (1) of the Act, Hamilton is authorized to impose fees or charges on persons for services or activities provided or done by or on behalf of it; costs payable by it for services or activities provided or done by or on behalf of any other municipality or local board, and for the use of its property including property under its control;

AND WHEREAS AMLPC owns and operates a manufacturing facility at 690 Strathearne Avenue North, City of Hamilton (the "**Delivery Point**"), and owns and operates an existing water main Pipeline, used to deliver in, on, under or across rights of way and lands of Hamilton, Raw Water from the Raw Water Pumping Station to the Delivery Point;

AND WHEREAS AMLPC and Hamilton wish to enter into an Agreement for the continued supply of Raw Water to the Delivery Point which will incorporate a licence that will authorize the continued presence of the Pipeline on City lands;

AND WHEREAS on April 25, 2018, Council of the City of Hamilton approved Item 9 of the Audit, Finance and Administration Committee Report 18-005 and authorized entering into an Agreement with AMLPC for the continued supply of Raw Water by Hamilton to the Delivery Point;

NOW THEREFORE IN CONSIDERATION OF THE MUTUAL COVENANTS CONTAINED HEREIN AND THE PROVISION OF OTHER GOOD AND VALUABLE CONSIDERATION BY EACH PARTY HERETO TO THE OTHER (THE RECEIPT AND ADEQUACY OF WHICH IS ACKNOWLEDGED) THE PARTIES HERETO HAVE AGREED AS FOLLOWS:

CITY HAM / AMPLC NT/FP

ARTICLE 1. INTERPRETATION

1.01 Definitions

In this Agreement, unless the context otherwise specifies or requires, the following terms shall have the respective meanings specified or referred to below and grammatical variations of such terms shall have corresponding meetings:

"Agreement" means this Raw Water Supply Agreement and includes any Schedules.

"Business Day" means a day that is not Saturday, Sunday, statutory or civic holiday or other day on which Hamilton has elected to be closed for business.

"Council" means the municipal council for the city of Hamilton.

"Delivery Point" means the Delivery Point defined in the Recitals to this Agreement.

"Effective date" means February 7, 2020.

"Emergency" means an unforeseen situation where immediate action must be taken to preserve the environment, public health, safety or an essential service of the Parties.

"Future delivery point" has the meaning ascribed in section 2.04.

"Licensed Lands" means the lands owned by Hamilton upon which the Pipeline is currently located and existing.

"Maximum Flow Rate" means a maximum flow rate of 6.94 cubic metres per minute.

"New Construction" means the construction of new structures or the installation of new landscaping, but does not include normal repairs and maintenance, nor does it include reconstruction and landscaping replacement that involves the replacement of old structures or landscaping with new structures or landscaping in the same location and which are substantially the same as the structures or landscaping being replaced.

"Maximum Daily Volume" means a maximum of Ten-thousand (10,000) cubic metres per day.

"Parties" means both Hamilton and AMLPC and "Party" means either Hamilton or AMLPC.

"Pipeline" means collectively, the pipeline used to supply Raw Water from the Raw Water Pumping Station to the delivery point, in existence as of the Effective date, which pipeline is located on lands belonging to AMLPC and on the Licensed Lands. The Pipeline includes the active Pipeline, any decommissioned pipeline and any abandoned pipeline which may formerly have been used to supply Raw Water to the Delivery point, aboveground markers and a metering chamber (but not the water meter itself within the metering chamber), a valve chamber, a backflow preventer and any heated enclosure used in connection therewith that may hereinafter be installed, connections to the Pipeline, and four pumps located in the Raw Water Pumping Station.

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"Qualified Person" means an employee of AMLPC or a contractor employed by AMLPC that is competent, trained, experienced and licensed in the Province of Ontario and is in good standing with the applicable licensing authority to perform the work assigned.

"Raw water" means water drawn from Lake Ontario screened but not filtered or otherwise treated, except for the occasional addition of chlorine to prevent the growth of algae and for zebra mussel control, and for primary disinfection of microbial organisms.

"Raw Water Pumping Station" means the dedicated pumping station building owned by Hamilton, and located at 900 Woodward Avenue at Hamilton's Woodward Avenue Water Treatment Plant site together with its electrical appurtenances outlined in red on the attached Schedule "A", which as of the Effective Date, is used to pump Raw Water from the Water Treatment Plant, through the Pipeline, to the Delivery Point.

"Sewer Use By-law" means By-law 14-090 of the City of Hamilton as amended from time to time.

"Term" means the twenty-year duration of this agreement which commences on February 7, 2020 and ends at midnight on February 6, 2040.

"Water and Wastewater/Storm Fees and Charges By-law" means the City of Hamilton Water and Wastewater/Storm Fees and Charges By-law, as amended from time to time, which By-law is currently By-law 19-291 of the City of Hamilton but which is anticipated to be amended on at least an annual basis throughout the Term.

(b) Compliance with Laws

Compliance with applicable laws is a fundamental obligation of both parties under this Agreement, and such compliance is applicable to every obligation hereunder whether special reference to compliance with laws is specifically expressed. The rights, privileges, duties and obligations arising out of this Agreement shall be subject to any applicable statute, regulation, law, order and direction of any governmental authority having jurisdiction over the Parties and now or hereafter in effect during the Term.

(c) Time of the Essence

Time shall be of the essence in this Agreement

(d) Applicable Law

This Agreement shall be governed by and construed in accordance with the laws of the Province of Ontario. References to currency are references to Canadian dollars.

(e) Interpretation not affected by headings, etc.

Grammatical variations of any terms defined herein shall have similar meanings; words importing the singular number shall include the plural and vice versa; words importing the masculine gender shall include the feminine and neutral genders and vice versa. The division of this Agreement into separate sections, subsections, and paragraphs and the insertion of headings and marginal notes and references are for convenience of reference only and shall not affect the construction or interpretation of this Agreement.

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ARTICLE 2. PIPELINE AND RAW WATER PUMPING STATION

2.01 Pipeline

(a) All right, title and interest in the Pipeline is, has always been and shall remain vested with AMLPC.

(b) AMLPC is responsible for the operation, maintenance and repair of the Pipeline and all operating costs, including electricity, in relation thereto.

2.02 Raw Water Pumping Station

All right, title and interest in the Raw Water Pumping Station is, has always been and shall remain vested with Hamilton.

2.03 Connection Rights

(a) It is the intention of Hamilton and AMLPC that the Raw Water supplied under this Agreement shall be solely for the supply of Raw Water to the Delivery Point to be used for manufacturing processes at AMLPC's Hamilton manufacturing site.

(b) All water supplied by Hamilton pursuant to this Agreement shall be supplied through the Pipeline.

(c) In the event that, subsequent to the execution of this Agreement, AMLPC desires to add a service line and/or lateral main to the Pipeline and/or desires Hamilton to supply and deliver Raw Water through the Pipeline to a future/other delivery point other than that which is in place as of the Effective Date (collectively "Future Delivery Point"):

(i) AMLPC shall make a request in writing to Hamilton for consent to add a Future Delivery Point to the pipeline;

(ii) Hamilton may approve such request, provided that,

(1) delivery of Raw Water to a Future Delivery Point will not affect Hamilton's ability to supply water to Hamilton's ratepayers in the same manner as then currently provided, in Hamilton's sole and absolute discretion;

(2) an engineer confirms on AMLPC's behalf that the delivery of Raw Water to a Future Delivery Point will not result in withdrawing Raw Water beyond the Maximum Flow Rate and the Maximum Daily Volume; and,

(3) AMLPC shall be responsible for all capital costs associated with the installation of any pipelines/service lines/lateral mains, related infrastructure and water meter(s) required to serve a Future Delivery Point,

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(iii) any such approval shall only become effective if this Agreement shall be formally amended in writing to reflect such approval, failing which any purported approval shall be null and void.

2.04 Grant of Licence

(a) For the duration of the Term, AMLPC shall have a licence under which AMLPC shall have the right to have the Pipeline occupy the Licensed Lands. The said licence is an integral part of this Agreement, and the said licence shall terminate immediately upon the expiration or other termination of the Term. The licence is exclusive with respect to the physical location of the actual Pipeline, but shall otherwise be non-exclusive with respect to the Licensed Lands in general.

(b) Included within the licence granted in (a) above is the right to have access to the Licensed Lands for the purpose of inspection and maintenance, including the right of replacement of the Pipeline, provided always that AMLPC shall be required to obtain any and all applicable permits from Hamilton prior to the commencement of any work.

(c) AMLPC shall pay an annual Licence Fee, plus applicable sales taxes, during each year of the Term in accordance with the following chart:

Timeframe	Amount of annual Licence Fee
January 15, 2020 to January 14, 2025	$18,500.00
January 15, 2025 to January 14, 2030	$19,425.00
January 15, 2030 to January 14, 2035	$20,400.00
January 15, 2035 to January 14, 2040	$20,420.00

(d) The annual licence fee shall be invoiced in full with the monthly raw water bill for the first year, on the commencement of the Term and shall be invoiced in full thereafter with the January raw water bill in each subsequent year of the Term.

(e) AMLPC specifically acknowledges that it has examined the Licensed Lands and that it accepts the Licensed Lands as is and is fully satisfied with their condition.

(f) AMLPC shall be responsible for all realty taxes, including local improvement rates, duties, charges and assessments that may be levied, charged, or assessed against the Licensed Lands during the Term, which amounts shall be payable to Hamilton as an additional Licence Fee. AMLPC shall have the right to register appeals and request reconsiderations of assessments under the Assessment Act in relation to the Licensed Lands.

ARTICLE 3. OBLIGATIONS OF AMLPC

3.01 Payment of Charges

(a) AMLPC shall pay to Hamilton all amounts charged in accordance with this Agreement, including the cost for the raw water delivered by Hamilton through the Pipeline in accordance with invoices issued to it by the invoiced due date.

(b) The charge for Raw Water supplied to AMLPC for each billing period will be calculated in accordance with the Water and Wastewater/Storm Fees and Charges By-law, as amended from time to time, as follows:

(i) Fixed Charges – Are based on the size of the water meter(s) and will be charged at the same rates that Hamilton charges to its consumers within the City of Hamilton.

(ii) Variable (Consumption) Charges – Raw Water consumption will be charged on a per cubic metre basis at 7.5% of the rate Hamilton charges for the supply of potable water.

(iii) Wastewater Charges – A fee will be charged on a per cubic metre basis for the quantity of sewer discharge of water that has originated from a source other than Hamilton's potable water supply. The formula used to determine surcharge discharge fees is as follows: Discharge fee payable on a quarterly basis = quantity of discharge × wastewater/storm treatment charge per cubic metre that from time to time Hamilton charges to its customers.

For added certainty, and without limiting the generality of the foregoing, it is agreed that the fees and charges set out in (i) through (iii) above will be adjusted on an annual basis, usually in January of any given calendar year, to correspond to the rates set by Council annually in the Water/Wastewater Fees and Charges By-law. The charges for Raw Water in accordance with the foregoing are deemed to be charges for the supply of Raw Water only, and do not include any cost recovery for costs for which AMLPC provides any other payment pursuant to this Agreement, or otherwise constitute any form of double-charging.

(c) AMLPC shall pay to Hamilton the sum of Four-hundred and forty-three thousand, four-hundred and thirty-two dollars ($443,432.00) for the electrical upgrade to the Raw Water Pumping Station, which amount shall be paid in full as a lump sum not later than 30 days following the date that Hamilton switches over from the pre-upgrade electrical system to the post-upgrade electrical system. It is acknowledged that the foregoing payment is intended to reimburse Hamilton for its costs in performing the said electrical upgrade.

(d) In the event that AMLPC alleges that the charges in (c) above do not accurately reflect Hamilton's actual costs for performing the said electrical upgrade, the charge may be submitted to an auditor licensed under the Public Accounting Act who shall consider the charge and shall submit its recommendation to both parties. All expenses in connection with the work of the auditor shall be the responsibility of AMLPC alone. Neither party shall be obliged to accept the results of the audit recommendation, and either party may choose to seek resolution of the matter by having recourse to the dispute resolution provisions of this Agreement, however none of the foregoing shall delay the making of the payment pursuant to (c) above.

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3.02 Suitability of Pipeline

AMLPC warrants that the Pipeline is in good working order and is suitable for the purposes of the delivery of Raw Water Delivery Point as set out in this Agreement.

3.03 Backflow Prevention Requirement

(a) AMLPC shall install a backflow prevention device to protect against any backflow conditions related to the Raw Water Supply. AMLPC will install a backflow prevention device, RP-BFP (Reduced Pressure Backflow Prevention Device), based on the directives of Premises Isolations as defined in the CSA B64.10-17 norm. The foregoing relies on clause 5.4 of the Selection Guide of the aforesaid B64.10-17 norm and more specifically is based on table 2 therein for which the applicable CSA standard designation is B 64.4.

(b) The Reduced Pressure Backflow Prevention Device shall be installed no more than three (3) metres downstream of the existing City of Hamilton water meter for the Pipeline. The installation shall occur on or before August 31, 2020.

(c) The installed backflow prevention device must be inspected annually by a licensed master plumber with a Backflow Prevention Device tester's certificate, retained by AMLPC at its sole cost and expense, and verified to be functional. Inspection reports will be submitted to Hamilton Water staff for review no later than December 31st of each calendar year that this Agreement remains in effect, except for the year 2020.

(d) Prior to August 31, 2020, Hamilton will consider whether it is a feasible option to relocate the backflow preventer into the Raw Water Pumping Station and the terms under which this option might be fulfilled. Hamilton shall consider the issue in good faith and with an open mind, but it shall be in the absolute discretion of Hamilton to either accept or reject any such option. AMLPC shall bear the full costs of any engineering studies in connection with the consideration of any such option, as well as any other costs in connection with the installation of the backflow preventer in the Raw Water Pumping Station, including the ongoing maintenance and other costs that may be incurred by Hamilton in connection therewith. The approval of any such option by Hamilton shall prevail over (a), (b), and (c) above to the extent of any inconsistency.

3.04 Maximum Flow Rate and Maximum Daily Volume

(a) At no time during the Term of this Agreement shall AMLPC withdraw Raw Water from the Pipeline at a rate that exceeds the Maximum Flow Rate or at a volume that exceeds the Maximum Daily Volume.

(b) In the event that Hamilton determines, based on measurement in accordance with section 6.02, that AMLPC is in contravention of (a) above:

(i) AMLPC shall take such measures as are necessary and appropriate to ensure compliance with the Maximum Flow Rate and Maximum Daily Volume amounts; and,

(ii) Without limiting any other rights it may have under this Agreement, or otherwise awaiting compliance by AMLPC, Hamilton may take any measures it deems appropriate,

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in its sole and absolute discretion, to reduce the supply or reduce the flow rate of Raw Water to AMLPC.

(c) Either Party, may upon 60 calendar days' written notice to the other Party, request a review of the Maximum Flow Rate or the Maximum Daily Volume, as defined by this Agreement. If the parties are willing to change either the Maximum Flow Rate or the Maximum Daily Volume, this Agreement shall require amendment to the corresponding definitions. It is acknowledged that any change to these amounts shall be subject to Hamilton's ability to supply water to Hamilton's ratepayers as then currently being provided, in Hamilton's sole and absolute discretion.

3.05 Repair and Maintenance Costs

AMLPC covenants and agrees to be fully responsible for:

(a) the maintenance and repair of the Pipeline in connection to Hamilton's supply of Raw Water; and,

(b) reimbursement to Hamilton of all Hamilton's direct costs and expenses exclusively related to the maintenance and repair of the Raw Water Pumping Station, and any sizing and resizing of equipment or infrastructure as may be required in case of replacement. It is recognized that sizing and resizing, including without limitation the potential resizing referenced in section 3.09(a)(i), shall be determined with reference to the rights of AMLPC under this agreement and its other requirements hereunder.

3.06 Operating Costs

AMLPC covenants and agrees to be fully responsible for:

(a) all operating and electrical costs related to the Pipeline, the water meter chamber, and all of its works and/or infrastructure in connection with the Pipeline; and,

(b) all direct operating costs (including without limitation all electrical costs, grounds maintenance costs, cleaning costs, and communications costs) exclusively related to the supply and delivery of Raw Water from the Raw Water Pumping Station to the Delivery Point.

3.07 Standard of Care

(a) In addition to its general obligations under section 1.01(b), when undertaking the construction, administration, operation, repair, replacement or maintenance works pursuant to this Agreement, AMLPC shall:

(i) use the same standard of care that is used by Hamilton in relation to its construction, administration, operation, repair, replacement or maintenance of its waterworks system;

(ii) ensure that any personnel used by AMLPC or any contractor or subcontractor of AMLPC shall be a Qualified person; and,

(iii) not subcontract or delegate the work without the prior written consent of Hamilton, which consent shall be granted or withheld acting reasonably. Despite any such consent, Hamilton may at any time require AMLPC by notice to replace any contractor or staff person employed by AMLPC performing work if such person or contractor is unsuitable for the task or will be unavailable to perform the task in a timely manner. In the event that Hamilton provides such notice to AMLPC, AMLPC shall immediately withdraw the applicable person or persons from work, and shall use all reasonable efforts promptly to make a replacement or replacements.

(b) It is acknowledged that the approval of Hamilton to the use of any subcontractor for the performance of any work pursuant to this Agreement or otherwise, shall not relieve AMLPC from any liability under this Agreement and AMLPC shall always remain principally liable for any acts or defaults of its employees or contractors.

3.08 Wastewater Discharge

Without limiting the generality of section 1.01(b), AMLPC shall comply with the requirements of the Sewer Use By-law in respect of all sewer discharges to Hamilton sewage works, as the By-law may be amended from time to time. It is acknowledged that the foregoing shall, among other things, require the payment of fees in relation to sewage discharges, which shall be calculated and applied in the same manner as occurred immediately prior to the execution of this Agreement.

3.09 Necessary repairs to the Raw Water Pumping Station

(a) Without limiting the generality of section 3.05(b), AMLPC shall pay for Hamilton's actual costs as they are incurred needed to bring the Raw Water Pumping Station to a reasonable level of repair, it being acknowledged that the Raw Water Pumping Station is not now in a reasonable level of repair and that necessary work has been identified that includes but is not necessarily limited to the following:

(i) Process Mechanical Work

Review and repair of all existing piping, supports, isolation valves, check valves and appurtenances. Provision of redundant alarm functionality in the sump pump system. Provision of SCADA integration, antivibration and communication functionality. Review and performance of any necessary repairs to satisfy capacity and operational needs, including potential resizing of components.

(ii) Process Electrical Work

Review and repair of exterior transformers, including elimination of possible PCB contamination. Review and repair of any obsolete breaker parts or components, or other electrical components that may be oversized or antiquated. Updating of communications abilities to current standards and identification of components and conduits.

(iii) Health and Safety Work

The completion of a designated substances survey in relation to the entire building, including any required remediation that is identified, an arc flash survey to label all

necessary electrical components, review and repair of emergency lighting, and evaluation and repair of all exterior chambers associated with the Pipeline for integrity.

(iv) Building and Grounds Work

The completion of repair work to the building roof including recoating the roof decking from inside the building. The completion of vegetation removal around the building, repair of cracks in the building walls, and sealing the building foundation. Resurfacing the flashing associated with the building including the sealing of all joints.

(b) Despite sections 3.05(b) and 3.09(a)(ii), AMLPC's total contribution to any necessary remediation or adjunct costs incurred or to be incurred in respect of any PCB soil contamination is limited to the total sum of Twenty-thousand dollars ($20,000).

3.10 Alternative to reimbursement of Hamilton Costs

When work is to be done by Hamilton for which it is entitled to obtain reimbursement from AMLPC, Hamilton may authorize such work to be performed in the first instance by AMLPC if:

(a) AMLPC assumes all costs and responsibility, including Construction Liens and Occupational Health and Safety, for any such work; and,

(b) the parties are both in agreement that such arrangements would reduce AMLPC's ultimate costs and would otherwise be appropriate in all the circumstances.

ARTICLE 4. COVENANTS AND RESPONSIBILITIES OF HAMILTON

During the Term of this Agreement, subject to the terms of this Agreement, Hamilton will supply and deliver Raw Water to the Delivery Point that meets the following requirements:

(a) the Raw Water shall have been screened with occasional chlorination treatment if deemed necessary to prevent zebra mussels or similar invasions, and for primary disinfection of microbial organisms; and,

(b) the supply of Raw Water will achieve the Maximum Daily Volume and the Maximum Flow Rate.

ARTICLE 5. INTERRUPTION OF SUPPLY

5.01 General

Hamilton shall have no obligation or liability to AMLPC for any interruption of supply of Raw Water occasioned by the causes described in this Article.

5.02 Force Majeure

Without limiting the generality of section 13.11, in the event that Hamilton is prevented from carrying out its obligations for supply and delivery of Raw Water under this Agreement by reason of any industrial disturbance, insurrection, riot, embargo, fire or explosion, act of God or war or by order of any legislative or federal authority or commission having jurisdiction over it, or by any other similar events over which Hamilton has no control and cannot reasonably prevent, Hamilton shall, to the extent to which it is so prevented from carrying out any such obligation, be relieved from same while such disability continues.

5.03 Temporary Interruption of Supply

Hamilton may temporarily discontinue the delivery of Raw Water to the Delivery Point in the event of planned maintenance work affecting the delivery, or if an Emergency exists in the City of Hamilton, as determined in Hamilton's sole discretion, acting reasonably. Hamilton may also temporarily discontinue the delivery of Raw Water to the Delivery Point in any other instance when Hamilton determines that it is necessary to discontinue delivery. Any such discontinuance will be of the minimum duration reasonably possible in the circumstances, and Hamilton will use reasonable efforts to provide AMLPC with appropriate notice of any such discontinuation given the circumstances of each event.

5.04 Emergency Backup

In the event Hamilton discontinues or interrupts the delivery of Raw Water to the Delivery Point pursuant to this Article, AMLPC shall, at its sole cost and expense, be responsible for supplying and generally meeting its requirements for water until the regular Raw Water supply is restored pursuant to this Agreement and shall tolerate and accept such discontinuation of service without any claim against Hamilton therefor.

ARTICLE 6 BILLING

6.01 Billing

Hamilton will invoice AMLPC for Raw Water and all other costs and charges permitted hereunder on a monthly basis.

6.02 Measurement

As of the Effective Date, it is acknowledged that the supply of Raw Water from Hamilton to AMLPC is measured through a single water meter located in one chamber. It is agreed and acknowledged that this is adequate for purposes of this Agreement, however if the parties successfully make an agreement on another feasible option for the relocation of the backflow preventer pursuant to section 3.03(d), it is acknowledged that the water meter will move inside the Raw Water Pumping Station.

6.03 Interest on overdue accounts

AMLPC shall pay interest on overdue accounts calculated at the same rate as charged on overdue accounts to consumers within the City of Hamilton.

ARTICLE 7 EXCLUSION OF LIABILITY

7.01 Exclusion of Liability

(a) The parties expressly agree and acknowledge that Hamilton shall not be liable to anyone, including AMLPC for any expense, cost, loss or damage (including any direct, indirect, special, remote, consequential and/or exemplary or punitive damages, regardless of the form of action, whether in contract, tort or otherwise), sustained directly or indirectly by reason of any variation, interruption or temporary discontinuance of the Raw Water supply delivered under this Agreement or the failure to supply such Raw Water or to supply sufficient Raw Water to AMLPC pursuant to this Agreement or the failure to provide reasonable notice of any variation, interruption or discontinuance of supply, for any reason whatsoever, whether such failure is a result of gross negligence or willful disregard of Hamilton or its servants, agents or employees, or otherwise, including, but not limited to, by reason of the construction, administration, operation, repair, replacement or maintenance of its water works system, and Hamilton shall not be responsible or liable for any loss or damage suffered by AMLPC that is related to or that would not arise but for this Agreement and anything done under or by reason of this Agreement. For added certainty, and without limiting the generality of the foregoing, it is agreed that due to weather and other circumstances beyond the control of Hamilton, the pressure at the Delivery Point may vary and Hamilton shall not be liable in any way whatsoever responsible for such variations in pressure.

(b) The parties expressly agree and acknowledge that AMLPC shall not be responsible for the decommissioning of the Raw Water Pumping Station as more particularized in 10.04(b) of this Agreement.

ARTICLE 8. INDEMNITY

8.01 Indemnity to Hamilton

(a) AMLPC shall and does hereby for all times covenant to defend, indemnify and save harmless Hamilton, its elected officials, officers, employees and agents, from and against any and all actions, causes of action, interest, claims, demands, costs, damages, expenses, loss or other proceedings however arising which Hamilton may bear, suffer or be put to by reason of this Agreement or the operation of the Pipeline, the lack of repair or maintenance of the Pipeline, the exercise by AMLPC of its rights as a licensee under this Agreement, or any other cause arising out of the Agreement or the exercise of AMLPC's rights hereunder, except to the extent such proceedings are due to the gross negligence of Hamilton, its elected officials, officers, employees or agents.

ARTICLE 9 INSURANCE

9.01 AMLPC Insurance

(a) Throughout the term of the Agreement (including any renewal thereof), AMLPC shall maintain and keep in full force and effect at its own expense (including the cost of deductibles), the following policies of insurance:

(i) Commercial General Liability Insurance, written on IBC Form 2100 or its equivalent, including but not limited to bodily and personal injury liability, property damage, and non-owned automobile and having an inclusive limit of not less than Ten Million ($10,000,000) per occurrence and in the aggregate and endorsed to include the City of Hamilton as additional insured;

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(ii) Property insurance covering against damage and loss of properties owned by Hamilton and used in connection with the Licensed Premises granted in this agreement; and,

(iii) Sudden & Accidental Pollution coverage under either the Commercial General Liability policy or under a separate policy of Pollution liability, which Pollution policy shall carry a limit of not less than Ten Million ($10,000,000) per occurrence endorsed to include Hamilton as additional insured.

The policies shall require at least thirty (30) days' written prior notice of any change to or amendment, cancellation, expiration or termination of the coverage under such policies to be given to Hamilton herein and be in a form satisfactory to Hamilton. The insurer shall be licensed to do business in Ontario, and such insurer and the insurance coverage shall be acceptable to Hamilton acting reasonably and prudently. AMLPC shall deliver to Hamilton a certificate of insurance originally signed by authorized insurance representatives, or, if required by Hamilton, a certified copy of the policy prior to the execution of this Agreement. Certificate Holder will be addressed as City of Hamilton, City Hall, 71 Main Street West, Hamilton, Ontario L8P 4Y5, Attn: Public Works, Director of Hamilton Water. All certificates, cancellation, nonrenewal or adverse change notices should be mailed to this address.

(b) All insurance coverages to be provided by AMLPC herein shall be primary and not call into contribution any other insurance coverages available to Hamilton and such coverage shall preclude subrogation claims against Hamilton and any other person insured under the policy. Insurance requirements and coverage herein shall not limit, reduce, or waive any of AMLPC's obligations to indemnify Hamilton pursuant to this Agreement herein or the liabilities assumed by AMLPC under this Agreement. AMLPC shall not do or omit to do anything that may breach, limit, restrict, or prejudice the terms or conditions of the insurance coverages referred to herein.

9.02 AMLPC Contractor Insurance

It is the responsibility of AMLPC to ensure that its contractors and subcontractors, providing maintenance or other services related to the works and/or infrastructure described in this Agreement, obtain and maintain insurance coverage which includes at a minimum, Commercial General Liability insurance covering against any and all claims for bodily injury, including death, personal injury , and property damage with a minimum limit of coverage of not less than Two Million Dollars ($2,000,000) per occurrence and Four Million Dollars ($4,000,000) in the aggregate endorsed to include Hamilton and AMLPC as additional insureds.

9.03 Hamilton Insurance

Throughout the term of the Agreement (including any renewal thereof), Hamilton shall effect at its own expense (including the cost of deductibles), and maintain and keep in force Commercial General Liability Insurance, written on IBC Form 2100 or its equivalent, including but not limited to bodily and personal injury liability, property damage, and non-owned automobile and having an inclusive limit of not less than Ten Million, ($10,000,000) per occurrence and in the aggregate. Hamilton shall deliver to AMLPC a certificate of insurance originally signed by an authorized insurance representative, at the time of the execution of this Agreement.

ARTICLE 10. TERM

10.01 Term of Agreement

The Term of this Agreement shall commence on the Effective Date and shall remain in effect for a period of twenty (20) years, unless terminated earlier in accordance with this Agreement. Upon the expiration or other termination of the Term, subject to section 13.07 of this Agreement, all rights of AMLPC pursuant to this Agreement shall immediately cease.

10.02 Early Termination by AMLPC

(a) In the event that the supply of Raw Water from Hamilton pursuant to this Agreement is no longer required by AMLPC, then upon providing Hamilton with not less than six (6) months notice in accordance with the notice provisions contained in section 12 of this Agreement, AMLPC may terminate this Agreement and this Agreement shall terminate in accordance with such notice.

(b) Where AMLPC avails itself of its right of termination in accordance with (a) above, it shall be entitled to a partial refund of the electrical upgrade chargeback collected pursuant to section 3.01(c) of this Agreement, as adjusted to take account of any reduction in the electrical upgrade chargeback in accordance with section 3.01(d), calculated in accordance with the following chart:

Year(s) in which termination becomes effective	Percentage to be refunded
2020-2021	85%
2022-2023	70%
2024-2025	55%
2026 or later	No Refund

(c) Half of any refund entitlement pursuant to (b) above shall be payable within 30 days of the approval of the decommissioning plan described in section 10.04(a), but the remaining refund entitlement shall not be payable unless and until AMLPC has fully complied with its obligations pursuant to section 10.04. The said remaining refund shall be held back without interest until completion of the said obligations has occurred to the satisfaction of Hamilton, acting reasonably, at which time it shall be payable forthwith.

10.03 Early Termination by Hamilton

(a) In the event that during the Term, there is not sufficient capacity in Hamilton's waterworks system to continue to supply AMLPC the volumes and rates of Raw Water required under this Agreement, in Hamilton's sole opinion acting reasonably, then upon Hamilton providing AMLPC with not less than two (2) years notice, in accordance with the notice provisions contained in section 12 of this Agreement, Hamilton may terminate this Agreement and this Agreement shall terminate in accordance with such notice.

(b) In the event that Hamilton exercises its rights pursuant to (a) above, Hamilton shall have no responsibility or other obligation in respect of any loss, expense or damage sustained directly or indirectly by AMLPC arising from such termination.

(c) Where Hamilton avails itself of its right of termination in accordance with (a) above, AMLPC shall be entitled to a partial refund of the electrical upgrade chargeback collected pursuant to

section 3.01(c) of this Agreement, as adjusted to take account of any reduction in the electrical upgrade chargeback in accordance with section 3.01(d), calculated in accordance with the following chart:

Year(s) in which termination becomes effective	Percentage to be refunded
2020-2021	85%
2022-2023	70%
2024-2025	55%
2026 or later	No Refund

(d) Half of any refund entitlement pursuant to (c) above shall be payable within 30 days of the approval of the decommissioning plan described in section 10.04(a), but the remaining refund entitlement shall not be payable unless and until AMLPC has fully complied with its obligations pursuant to section 10.04. The said remaining refund shall be held back without interest until completion of the said obligations has occurred to the satisfaction of Hamilton, acting reasonably, at which time it shall be payable forthwith.

10.04 Termination and Removal or Abandonment

(a) Upon the expiry of the Term, or early termination of this Agreement by either AMLPC or Hamilton pursuant to this Article or otherwise, or in the event the use of all or any portion of the Pipeline is terminated, abandoned or decommissioned for any reason, AMLPC shall, at its sole cost and expense, do the following:

(i) Within sixty (60) calendar days of the effective date of termination, AMLPC shall provide detailed plans to Hamilton which specify the method of decommissioning of the Pipeline, including details of all proposed restoration works, which plans shall comply with the following rules:

(1) With respect to portions of the Pipeline that are located on a public highway, AMLPC may leave the Pipeline in situ according to such instructions as the City may give regarding plugging with grout or such other matters related to the methodology of decommissioning, as it may direct;

(2) With respect to portions of the Pipeline that are not located on a public highway, the default obligation of AMLPC shall be to physically remove the Pipeline running over Hamilton lands, and the plans shall reflect this default obligation. Despite the foregoing, within its plans AMLPC may propose an alternate means of decommissioning the Pipeline that does not necessarily include physical removal, but in either case, the plans shall require AMLPC to restore the lands disturbed by the removal or decommissioning of the Pipeline, as the case may be.

(3) The plans shall provide a detailed work plan and timeline.

(ii) Hamilton will consider the plans filed pursuant to (i) above and shall either approve or reject the plans within within 60 days of the date of filing. If the plans are rejected by Hamilton, Hamilton shall describe the deficiencies in the plans that require modification.

(iii) Within ninety (90) days of the approval by Hamilton of the said plans, or such other time as agreed upon in writing by Hamilton or contained within the approved plans, AMLPC

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shall implement the approved plans in accordance with the methods and according to the timeline contained therein.

(b) In the case of the Raw Water Pumping Station, Hamilton shall assume sole responsibility for its decommissioning.

(c) If, during the Term, Hamilton erects New Construction on any portion of the Licensed Lands that do not have the status of a public highway, and such New Construction has the effect of causing increased costs to AMLPC in the performance of its obligations under section 10.04(a)(i)(2), Hamilton shall be responsible for the increase in costs attributable to the erection of such New Construction.

ARTICLE 11. DISPUTE RESOLUTION

11.01 High Level Negotiation

If a dispute arises under this Agreement which is not resolved by the operational personnel involved, the AMLPC's Plant Director of its Hamilton East, Wire Mills facility and Hamilton s Director of Hamilton Water shall be notified and shall meet within fifteen (15) Business Days of the notification in attempt to resolve the dispute. In the event that they are unable to resolve the dispute, they shall notify AMLPC's General Manager of Wire Mills, and Hamilton's General Manager of Public Works who shall meet as promptly as possible to attempt to resolve the dispute.

11.02 Mediation and Arbitration

In the event of any dispute or disagreement between the Parties as to the meaning or interpretation of anything contained in this Agreement or as to the performance or non-performance hereof or as to the respective rights and obligations of the Parties under this Agreement, that is not resolved pursuant to the process provided for under subsection 11.01, the Parties may mutually agree to refer such dispute or disagreement to mediation or arbitration.

11.03 Procedure for Mediation or Arbitration

The procedure upon mediation or arbitration pursuant to the provisions of subsection 11.02 shall be as follows:

(a) Within twenty (20) calendar days after the written request of either of the Parties for mediation or arbitration, in the event the Parties are unable to agree upon a single, mutually acceptable mediator/arbitrator, each of them shall appoint one mediator/arbitrator and the two so appointed shall, within twenty (20) calendar days after the expiration of the twenty (20) day period select a third. If either of the Parties fails to name a mediator/arbitrator within twenty (20) days after the written request for mediation/arbitration, the mediator/ arbitrator appointed shall be the only mediator/arbitrator. If the two mediators/arbitrators so appointed are unable to agree on a third mediator/arbitrator within twenty (20) calendar days after the expiration of the first twenty (20) calendar day period mentioned above, application shall be made as soon as reasonably possible to any judge of the Ontario Superior Court of Justice for the appointment of a third arbitrator.

(b) The mediator(s)/arbitrator(s) so appointed shall have all the powers accorded to arbitrators by the *Arbitration Act, 1991*, SO 1991, c17. The decision of the

mediator(s)/arbitrator(s) (or of a majority of the mediator(s)/arbitrator(s)) shall be final and binding on the Parties.

(c) Either Party may appeal an arbitration award to the courts of the Province of Ontario on a question of law.

(d) Either Party may apply to a court of competent jurisdiction for (i) an interim measure of protection or (ii) any order for relief which the arbitrator(s) do not have the jurisdiction to provide.

(e) The cost of the mediator(s)/arbitrator(s) referred to in this section shall be shared equally between AMLPC and Hamilton.

11.04 Performance to Continue

In the case of a dispute between the Parties, each Party agrees to fulfill its contractual obligations under the terms of this Agreement to the best of their abilities until the dispute is resolved.

ARTICLE 12. NOTICE

12.01 Notice, Delivery of notice in writing, and Addresses

Any notice required to be given under this Agreement shall be in writing, and shall be delivered by personal delivery, fax or by prepaid mail to the following address:

AMLPC: 690 Stratheame Ave. N.
Hamilton, Ontario
L8H 7N8
Fax : TBD

Attn: General Manager, Wire Mills

Hamilton: 77 James Street North, Suite 400
Hamilton, ON
L8R 2K3
Fax: 905-546-3658

Attn: Director of Hamilton Water

12.02 Delivery of the notice

Notice will be deemed to have been given:

(a) in the case of postage-prepaid mail, five Business Days after the notice is mailed; or
(b) in the case of personal delivery or fax, one Business Day after the notice is delivered.

12.03 Postal disruption

Despite subsection 12.02(a), in the event of a postal disruption, notice by postage-prepaid mail will not be deemed to be received and the Party giving notice will provide notice by personal delivery, by fax, or by e-mail.

CITY HAM / AMPLC NT/FP

12.04 Special Provisions Respecting Notification of an Interruption in Supply of Raw Water

The Parties agree to work together to develop a communication strategy that will better satisfy the needs of the parties when notice needs to be given in respect of an interruption in the supply of Raw Water. If the parties conclude that such arrangements are feasible and appropriate, they may record the arrangements in a separate document that shall be deemed to be part of this Agreement when signed and approved by appropriate staff having authority. The said separate document shall thereafter prevail over section 5.03 and the normal notice provisions contained in this Article to the extent that its requirements differ therefrom.

12.05 Data sharing protocol

The Parties agree to work together to consider whether it is feasible to implement a data sharing protocol to transfer data from the SCADA System (SCADA is an acronym for supervisory control and data acquisition, a computer system for gathering and analyzing real time data) of the Raw Water Pumping Station to AMLPC or for AMLPC to install its own system within the Raw Water Pumping Station for the transfer of data to their operations. If the parties conclude that such an arrangement is feasible and appropriate, they may record the arrangements in a separate document that shall be deemed to be part of this Agreement when signed and approved by appropriate staff having authority.

12.06 Changes in Address

The parties may change their addresses in section 12.01 through notice given in accordance with this Article.

ARTICLE 13. GENERAL PROVISIONS

13.01 Binding Agreement

This Agreement shall not be in force, or bind any of the Parties, until executed by both AMLPC and Hamilton. This Agreement shall enure to the benefit of and be binding upon the Parties and their successors.

13.02 No Assignment

The rights of either party to this Agreement are not capable of being sold or assigned without the approval of the other party, which approval may be either given or withheld in the discretion of the party from whom approval is required, acting reasonably.

13.03 Amendments Must Be Equally Formal

This Agreement may not be amended except by an instrument in writing of equal formality signed by the Parties to this Agreement or by their successors or assigns as limited in this Agreement.

13.04 Independent Legal Advice

The Parties acknowledge that they have read, understood and obtained independent legal advice respecting this Agreement and the terms thereof.

13.05 Waiver

AMLPC and Hamilton agree that any actions of either or both Parties in contravention of this Agreement shall not be relied upon as a waiver of any term of this Agreement and no approvals given by any employee of either Party shall constitute a waiver by the respective Party of its rights under this Agreement.

13.06 Further Assurances

AMLPC and Hamilton agree that they will, upon the reasonable request of each other, make, do, execute or cause to be made, done or executed all such further and other lawful acts, deeds, things, devices and assurances whatsoever to effect all of the terms, provisions and conditions of this Agreement.

13.07 Survival

The rights and obligations of the Parties, which by their very nature, extend beyond the termination of this Agreement including, without limitation, the following sections and subsections, and all applicable cross-referenced sections and subsections, will survive any expiry or termination of this Agreement and continue in full force and effect: Article 7 (Exclusion of Liability), Article 8 (Indemnity), Section 10.04 (Termination and Removal or Abandonment), and this section 13.07.

13.08 Invalid or Unenforceable

If any term of this Agreement is found to be invalid, illegal, or unenforceable by a court having the jurisdiction to do so, that term is to be considered to have been severed from this Agreement and the rest of this Agreement shall remain in force unaffected by the severance of that term.

13.09 References to Law

All references to statutes or by-laws in this Agreement shall include amendments thereto, regulations thereof, and successor legislation thereafter.

13.10 MFIPPA

AMLPC acknowledges that Hamilton is bound by the *Municipal Freedom of Information and Protection of Privacy Act (Ontario)*, and that the information provided to Hamilton in connection with this Agreement may be subject to disclosure in accordance with the provisions of that Act.

13.11 Force Majeure

Notwithstanding anything contained in this Agreement, neither Party shall be liable for any failure or delay on its part to perform any of the terms, conditions, covenants or obligations of this Agreement to the extent that such failure or delay is the result of a cause beyond its reasonable control including such things as unavailability of material, equipment, utilities, services, an act of God, a fire, an act of the public enemy, an act of Her Majesty in her sovereign capacity, laws, a flood, a quarantine restriction, an epidemic, a labour dispute, a riot, a civil commotion, vandalism, malicious mischief or other similar cause beyond its control and not avoidable by the exercise of reasonable foresight (excluding the inability to pay for the performance of such obligation) and which occurs without the default or negligence of the Party seeking relief. The Party being delayed shall be entitled to extend the time for fulfillment of such obligation by a time equal to the duration of such delay and the other Party shall not be entitled to any

compensation for any loss or inconvenience occasioned thereby. The Party delayed shall however, use commercially reasonable efforts to fulfill the obligation in question as soon as reasonably possible.

13.12 Entire Agreement

This Agreement and the documents and instruments to be executed and delivered under it constitute the entire agreement between the Parties and supersede any previous agreement or arrangement, oral or written, between the Parties. This Agreement and the documents and instruments to be executed and delivered under it, contain all the covenants, representations, and warranties of the respective Parties. There are no oral representations or warranties between the Parties of any kind.

IN WITNESS WHEREOF the Parties have, by the signature of their representatives duly authorized in that behalf, entered into this Agreement.

THE CITY OF HAMILTON,
PER:

Mayor

Clerk

Approved as to form
Legal Services

ARCELORMITTAL LONG PRODUCTS CANADA G.P,
PER:

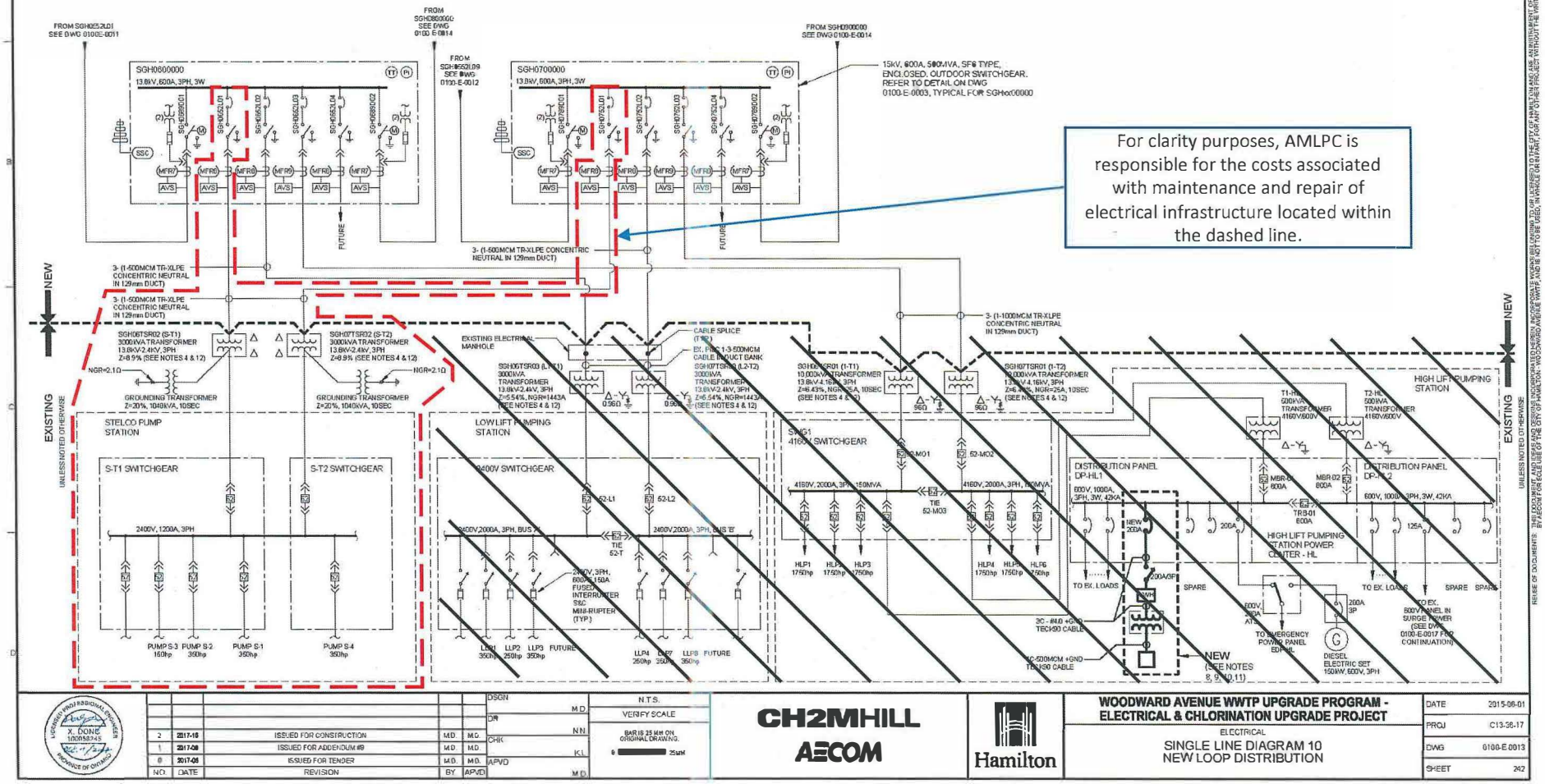
Nadia Thibault, Director, Legal Affairs & Compliance

Francois Perras, President and Chief Executive Officer

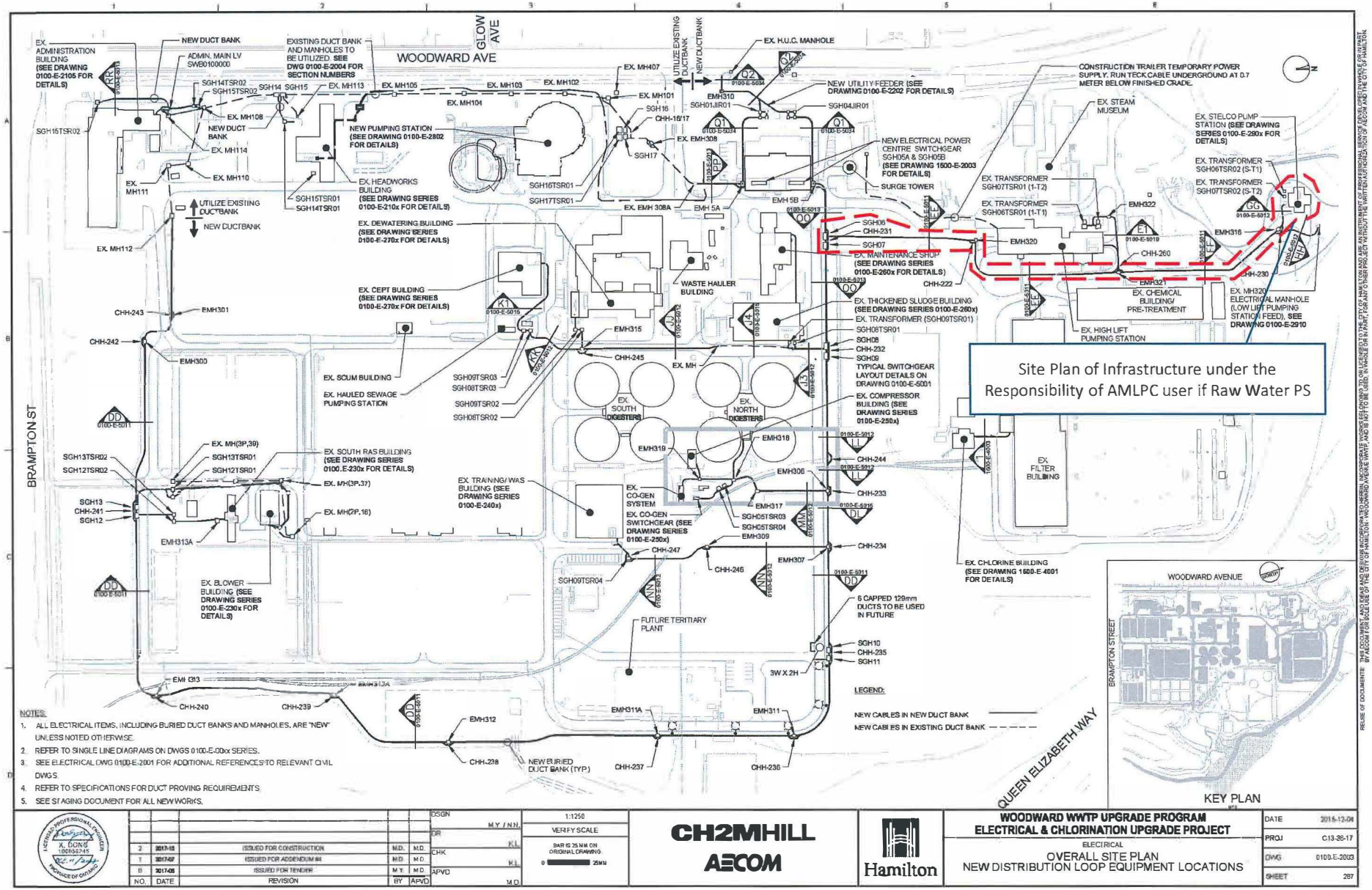
OFFICE OF THE CLERK
APPROVED BY COUNCIL
DATE April 23, 2018
AUTHORITY AF&A 18-005 2t 9
YEAR/FILE 2020-14635

Schedule A

Electrical Single Line Diagram
Raw Water Pumping Station
(formerly referred to as Stelco PS)



AMPLC
NT/FP



NOTES:

1. ALL ELECTRICAL ITEMS, INCLUDING BURIED DUCT BANKS AND MANHOLES, ARE "NEW" UNLESS NOTED OTHERWISE.
2. REFER TO SINGLE LINE DIAGRAMS ON DWGS 0100-E-00xx SERIES.
3. SEE ELECTRICAL DWG 0100-E-2001 FOR ADDITIONAL REFERENCES TO RELEVANT CIVIL DWGS.
4. REFER TO SPECIFICATIONS FOR DUCT PROVING REQUIREMENTS.
5. SEE STAGING DOCUMENT FOR ALL NEW WORKS.

NO.	DATE	REVISION	BY	APVD
2	2017-10	ISSUED FOR CONSTRUCTION	M.D.	M.D.
1	2017-07	ISSUED FOR ADDENDUM #1	M.D.	M.D.
0	2017-05	ISSUED FOR TENDER	M.Y.	M.D.

DSGN M.Y. / N.N.
DR K.L.
CHK K.L.
APVD M.D.

1:1250
VERIFY SCALE
BAR IS 25 MM ON ORIGINAL DRAWING
0 25MM

CH2MHILL
AECOM

Hamilton

WOODWARD WWTP UPGRADE PROGRAM
ELECTRICAL & CHLORINATION UPGRADE PROJECT
ELECTRICAL
OVERALL SITE PLAN
NEW DISTRIBUTION LOOP EQUIPMENT LOCATIONS

DATE	2015-12-04
PROJ	C13-36-17
DWG	0100-E-2003
SHEET	287

REUSE OF DOCUMENTS: THIS DOCUMENT, AND IDEAS AND DESIGNS INCORPORATED HEREIN, INCORPORATE WORKS DEVELOPED TO THE CITY OF HAMILTON AND ARE AN INSTRUMENT OF PROFESSIONAL SERVICE DEVELOPED IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF AECOM AND THE CITY OF HAMILTON.

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NT/FP

Hamilton

INFORMATION REPORT

TO:	Chair and Members Emergency and Community Services Committee
COMMITTEE DATE:	March 26, 2020
SUBJECT/REPORT NO:	Ontario Works Funding Update - Employment Services (HSC20005(a)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Brenda Bax (905) 546-2424 Ext. 4120 Jodi Rushton (905) 546-2424 Ext. 6305
SUBMITTED BY: **SIGNATURE:**	Bonnie Elder Director, Ontario Works Division Healthy and Safe Communities Department

COUNCIL DIRECTION

Not Applicable

INFORMATION

In February 2019, the Province announced its plan to transform Ontario's employment services by introducing a new model to manage the Employment Services System more effectively to meet the needs of its job seekers, businesses and communities. The new employment services model will be implemented in 2020 in three prototype communities including Hamilton-Niagara, the Region of Peel and Muskoka-Kawarthas. The Hamilton-Niagara area includes Hamilton, Niagara, Haldimand-Norfolk and Brant.

The new Employment Services System includes the selection of a Service System Manager (SSM) within each prototype community who will plan and deliver employment services at a local level and receive funding based on achieving results. On February 14, 2020, the Province announced the Fedcap Consortium as the Service System Manager for the Hamilton-Niagara area.

The Province also announced that as of October 2020, delivery responsibility for employment services to social assistance recipients in the prototype communities will transfer to the new SSM. As a result, some Ministry of Children, Community and Social

Services (MCCSS) 100% funding will be transferred from these prototype communities to the Ministry of Labour, Training, and Skills Development (MLTSD) for the purposes of delivering employment services. The 100% Provincial funding transfer amounts from the City of Hamilton's Ontario Works (OW) budget to MLTSD are as follows:

2020	2021
$1.1 million (pro-rated from October to December)	$4.5 million

This transfer has no net levy impact and is not considered a reduction in funding. It is a transfer of funding between provincial ministries with a goal to support clients in an integrated employment system.

These provincial decisions have an impact on 34 City of Hamilton staff, as well as customers and various community partners. The Director of the Ontario Works Division has assigned a project team within current staffing resources to develop a transition plan to wind down employment services. This staff team is working with Human Resources, Labour Relations and CUPE 5167 to support this transition.

While specific activities to support the transition of employment are still being finalized, staff will be taking a phased approach over the coming months. As directed by the province, Ontario Works will continue to be responsible for life stabilization activities for individuals receiving financial assistance from Ontario Works. Staff will also continue to refer individuals to the existing community employment system for employment counselling and job placement services.

Appendix "A" to Report HSC20005(a) provides an overview of the transition plan, including the number of staff and OW individuals affected by these changes.

While specific details of how the new SSM in Hamilton will manage the system are unknown at this time, staff are committed to working with Fedcap and community service providers to support a seamless transition for Ontario Works and Ontario Disability Support individuals.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report HSC20005(a) – Transition Plan Overview

Transition Plan Overview

<table>
<tr><th>Employment program/ service</th><th>Program Description</th><th>Number of City staff delivering the service</th><th>Other Stakeholders involved in the service</th><th>Transition plan</th></tr>
<tr><td>Helping Hands</td><td>Provides skilled training through a 26-week volunteer work placement. Ontario Works individuals acquire training and work experience (e.g. cleaning, rug shampooing, snow shovelling, lawn maintenance). These services are provided to customers with a disability or senior citizens.

All customers complete a financial test, and some pay small fee for services based on their assets.</td><td>8</td><td>33 Ontario Works individuals currently participating

210 active customers

<table><tr><th>Ward</th><th># of Customers</th></tr><tr><td>1</td><td>20</td></tr><tr><td>2</td><td>32</td></tr><tr><td>3</td><td>19</td></tr><tr><td>4</td><td>18</td></tr><tr><td>5</td><td>25</td></tr><tr><td>6</td><td>20</td></tr><tr><td>7</td><td>25</td></tr><tr><td>8</td><td>18</td></tr><tr><td>9</td><td>3</td></tr><tr><td>10</td><td>13</td></tr><tr><td>11</td><td>0</td></tr><tr><td>12</td><td>0</td></tr><tr><td>13</td><td>10</td></tr><tr><td>14</td><td>6</td></tr><tr><td>15</td><td>1</td></tr></table></td><td>No new Ontario Works individual referrals to the program.

New customer referrals are on hold which is current practice.

Staff will continue to work with the 33 Ontario Works individuals throughout the transition and refer individuals to the community employment system/provider when appropriate.

Staff will refund any annual costs that customers have paid in 2020.

Staff will focus on supporting customers through the transition and will meet with them to review alternative services and assist with completing applications for similar services.</td></tr>
</table>

Transition Plan Overview

Employment program/ service	Program Description	Number of City staff delivering the service	Other Stakeholders involved in the service	Transition plan
Employment Counselling	Work with Ontario Works individuals to develop employment action plans including resumes, issuing employment benefits to support employment goals, referral and approval of training, interview preparation and connections to internal and external programs.	20	975 Ontario Works individuals and 142 Ontario Disability Support Program dependent adults and spouses are currently receiving these supports. 8 Employment Ontario agencies involved in addition to other agencies such as Adult Basic Education Association (ABEA), Path, Threshold, City School, Immigrants Working Centre (IWC), Adult learning centres, March of Dimes, etc.	Staff will continue to support Ontario Works and Ontario Disability Support Program individuals with their life stabilization activities and will refer clients to community employment services providers.
Facilitated Workshops	Facilitated workshops are offered on workplace hazardous materials, first aid, and food handling with a focus on pre-employment and life skills.	1	11 Ontario Works individuals currently receiving this service	Staff will continue to support Ontario Works and Ontario Disability Support Program individuals with their life stabilization activities and will refer clients to community

Transition Plan Overview

Employment program/ service	Program Description	Number of City staff delivering the service	Other Stakeholders involved in the service	Transition plan
				employment services providers.
Community Placement (Volunteering)	Short-term and long-term placement of Ontario Works individuals with non-profit agencies.	2	87 Ontario Works individuals currently receiving this service	Correspondence will be sent to community providers to notify them that Ontario Works is no longer providing Community Placement services.
Self-Employment	Work with the City of Hamilton's Small Business Enterprise Centre to assist individuals in their business development.	1	6 Ontario Works individuals currently receiving this service	Staff will update local policies and transfer some of this responsibility to other Ontario Works staff.
Job Placement	Job match with open job orders which have been received through building relationships with employers. Job retention and training support are also provided.	2	70 Ontario Works individuals currently receiving this service	Staff will continue to support the OW individuals throughout the transition. Individuals will be referred to community supports.

Hamilton

CITY OF HAMILTON
HEALTHY AND SAFE COMMUNITIES DEPARTMENT
Housing Services Division

TO:	Chair and Members Emergency and Community Services Committee
COMMITTEE DATE:	March 26, 2020
SUBJECT/REPORT NO:	Canada-Ontario Housing Benefit (HSC20013) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Danielle Blake (905) 546-2424 Ext. 6077 Brian Kreps (905) 546-2424 Ext.1782
SUBMITTED BY: **SIGNATURE:**	Edward John Director, Housing Services Division Healthy and Safe Communities Department

RECOMMENDATION(S)

(a) That the General Manager of the Healthy and Safe Communities Department or his designate be authorized and directed to deliver and administer the Canada-Ontario Housing Benefit (COHB) and to execute all ancillary agreements and documents as may be required, with content satisfactory to the General Manager and in a form satisfactory to the City Solicitor;

(b) That the General Manager of the Healthy and Safe Communities Department be authorized and directed to approve and revise any municipal program guidelines, approve any exceptions to the municipal program guidelines as special or unanticipated circumstances arise, as necessary to deliver and administer the Canada-Ontario Housing Benefit; and,

(c) That the Outstanding Business List items identified as Opportunities and Flexibility of Existing Housing Programs and Hamilton Housing Benefits be considered complete and removed from the Outstanding Business List.

EXECUTIVE SUMMARY

The Canada-Ontario Housing Benefit will be available starting April 1, 2020. This will be portable housing benefit that will be paid directly to the household and applied towards the cost of a private market rental unit or an unsubsidized Community Housing unit. The COHB is calculated using 80 per cent of Average Market Rent (AMR) for the Service Manager (SM) area and 30 per cent of the Adjusted Family Net Income (AFNI) for the household and is renewed annually. Social assistance recipients will have a separate

maximum benefit calculation to avoid a reduction in social assistance entitlements after receiving the COHB. This calculation offers deeper affordability support than other housing allowance programs administered by the City but is not as deep as Rent-Geared-to-Income (RGI) assistance.

The COHB will be delivered by the Province of Ontario. As Service Manager, the City of Hamilton's role will be to identify and select eligible households and assist with completion of the application and submit it to the Ministry of Finance (MOF). Each Service Manager has been allocated a portion of the total funding. Hamilton's allocation for the 2020-21 benefit year (Year 1) is $1,151,337. Based on the province's average annual benefit estimation of $3,400/year/household, this should support between 320-350 households in Hamilton. The allocation for Year 2 (2021-22) is $1,508,594.

In order to prevent unused funding being reallocated by the Province, Housing Services is implementing a campaign to allocate all available portable housing benefits as early in the fiscal year as possible. The campaign, entitled the 350 Keys Challenge, will be an integrated strategy to ensure all portable housing benefits are assigned to eligible households within 60 days of the program's start on April 1, 2020. This strategy will work with Violence Against Women and homeless-serving agencies to target eligible households who meet both Provincial and local priorities. These will include Special Priority Person households (victims of abuse), households experiencing homelessness and households whose rent supplements are ending in 2020.

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The benefit itself is administered by the Province of Ontario so the City will not receive any program funding. The City will receive administrative funding of $250 per approved household, up to a maximum of 5% of the annual allocation. This will total approximately $53,000 for Hamilton from April 1, 2020 to March 31, 2021. The funding is intended to cover costs associated with assisting applicants through the process. The City will be reimbursed for any funds paid to successful applicants for first and last month's rent.

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

On November 22, 2017, the Federal Government released Canada's first National Housing Strategy. The Strategy's vision is to ensure Canadians have access to housing that meets their needs and is affordable. One of the programs announced under the Strategy was a portable housing benefit.

In December 2019, the federal Minister of Families, Children and Social Development and the Ontario Minister of Municipal Affairs and Housing jointly announced the creation of the Canada Ontario Housing Benefit (COHB) starting April 1, 2020. Financial allocations were also provided to Service Managers.

On February 12, 2020, the Ministry of Municipal Affairs and Housing released the program guidelines.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The *Housing Services Act, 2011* requires Service Managers to operate a Centralized Waiting List (CWL) for Rent-Geared-to-Income (RGI) assistance. In Hamilton this is the Access to Housing, (ATH) list. The COHB program guidelines state that in order to receive the benefit, households must be on or eligible to be on the CWL.

The program guidelines lay out priority groups the Province has identified to be served through the program. Service Managers (SM) may identify who among the priority groups they wish to serve. Hamilton will focus on two of the provincial priority groups – Special Priority Persons (victims of abuse) and households experiencing homelessness. These groups are consistent with Hamilton's approved ATH housing priorities for offers of RGI assistance.

The *Act* also establishes the eligibility criteria for households to receive RGI assistance, rules for the order in which people may be offered RGI assistance and what is considered an offer of housing. While the COHB offers deep affordability, it is not as deep as RGI. Therefore, it will not be counted as an offer of housing under the provincial rules. Given the long waits for RGI housing, COHB will be offered to eligible priority households as a quicker alternative.

RELEVANT CONSULTATION

Finance and Administration staff will provide support and guidance in establishing and maintaining appropriate financial processes for receiving and accounting for the COHB administrative funding component.

Legal Services staff reviewed the Transfer Payment Agreement and noted areas of potential risk to the municipality.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

The Canada Ontario Housing Benefit (COHB) is a new tool to address the need for affordable housing in Hamilton. Hamilton's stock of Rent-Geared-to-Income housing available through the ATH waitlist is stagnant and few households are moving out. Year over year, fewer people are being housed through the ATH waitlist. In 2015, 818 households were housed from ATH. By 2019, that number was down to 469.

Because the COHB is not tied to an RGI unit, it can help applicants access affordable housing quicker. It can be applied to a private market rental unit where someone is currently living or be applied to a new unit. It is also portable and moves with the person whether that is to another unit or another city in Ontario. These attributes were part of the reason the Special Priority Person-Portable Housing Benefit (SPP-PHB) was created in 2017. The COHB replaces the SPP-PHB but retains its flexibility.

Outstanding Business List items described as Opportunities and Flexibility of Existing Housing Programs and Hamilton Housing Benefit inquired about opportunities in existing housing programs that can be used to assist the households waiting on the centralized social housing wait-list and expanding permanent portable housing benefits. The COHB represents a long term portable housing benefit that will be used to address the needs of households on the ATH waitlist. Housing Services is also exploring opportunities to build on the COHB model to expand options for households in need of affordable housing. The Province allows Service Managers to offer a municipally-funded portable housing benefit directly to households. As social housing providers redevelop properties or seek to achieve a greater income mix, they will occasionally relinquish RGI subsidies. These RGI subsidies could be repurposed into funding for a municipally-funded and delivered portable housing benefit.

Housing Services is expanding options by using Canada Ontario Community Housing Initiative (COCHI) funding for rent supplements federally-funded projects that have reached the end of their operating agreement. Providing rent supplements to these units continues affordability for existing tenants and increases options for ATH waitlist applicants when units become vacant. COCHI is a reinvestment of savings to the federal government as federally-funded housing providers' operating agreements end.

ALTERNATIVES FOR CONSIDERATION

None

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Healthy and Safe Communities

Hamilton is a safe and supportive city where people are active, healthy, and have a high quality of life.

APPENDICES AND SCHEDULES ATTACHED

None

10.7

CITY OF HAMILTON
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Transportation Planning and Parking Division

TO:	Chair and Members Planning Committee
COMMITTEE DATE:	March 24, 2020
SUBJECT/REPORT NO:	Electric Vehicle Charging Stations Update (PED18250(b)) (City Wide) **(Outstanding Business List Item)**
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Amanda McILveen (905) 546-2424 Ext. 6009
SUBMITTED BY: **SIGNATURE:**	Brian Hollingworth Director, Transportation Planning and Parking Planning and Economic Development Department

RECOMMENDATION(S)

(a) That the General Manager, Planning and Economic Development, or their designate, be authorized and directed to execute on behalf of the City a contribution agreement between the City and the Department of Natural Resources Canada (NRCan) with content acceptable to the General Manager, Planning and Economic Development and in a form satisfactory to the City Solicitor;

(b) That Council approve the locations for the installation of up to 20 Electric Vehicle Chargers as listed in Appendix "A" attached to this Report as the target locations subject to confirmation of installation feasibility;

(c) That the Director, Transportation Planning and Parking, or their designate, be authorized to make minor substitutions to the locations for installation or number of chargers per location, pending installation feasibility assessments;

(d) That the estimated cost of $252 K to purchase and install 20 chargers, after the NRCan rebate, be funded from the Parking Reserve 108021 ($172 K) and through contributions from Ward Reserves on a pro-rated basis where the chargers are installed with the upset limits as follows; Ward 1 Reserve Account

108051 ($8 K) , Ward 2 Reserve Account 108052 ($32 K); Ward 3 Reserve Account 108053 ($8 K), Ward 4 Reserve Account 108054 ($8 K); Ward 8 Reserve Account 108058 ($8 K), and Ward 13 Capital (Reserve) Account 3301609613 ($16 K);

(e) That a charge to use the Electric Vehicle stations be set at $1 per hour for the first four hours, and $4 for subsequent hours to off-set the operating costs and to encourage turn-over of spaces;

(f) That the Director, Transportation Planning and Parking, or their designate, be authorized to implement changes to Electric Vehicle charger pricing in municipal parking lots on an annual basis to reflect inflationary or other operating cost increases;

(g) That the item respecting staff report back to the Planning Committee on locations and pricing structure, including what Hamilton's comparator municipalities are charging for the use of Electric Vehicle chargers be identified as complete and removed from the Planning Committee Outstanding Business List.

EXECUTIVE SUMMARY

On September 3, 2019, Planning Committee received PED18250(a) "EV Chargers in Hamilton Municipal Parking System Lots". The following report is Staff's response to a number of directions from Council that stemmed from Report PED18250(a) and provides a staff recommendation regarding a pay-per-use fee for charging at Electric Vehicle Charging Stations (EVCS).

Following the September 3, 2019 Report, which authorized staff to submit an application to Natural Resources Canada Grant, which funds up to 50% of the cost of Electric Vehicle Charging Stations, the City of Hamilton has been conditionally approved for funding for 20 electric vehicle charging stations, subject to the successful negotiation and execution of a Contribution Agreement.

In addition to seeking Council approval to execute the agreement, this Report provides recommendations on the proposed locations for installing the 20 EV chargers and an analysis of options for charging for the use of these EV chargers.

Alternatives for Consideration – See Page 8

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The estimated cost to install the 20 electric vehicle charging stations is between $309,500 and $452,000. The cost range is largely due to

uncertainties in the cost to bring electrical power to the chargers. The NRCan agreement provides a 50% rebate for the chargers, up to a maximum of $200,000. It is proposed that the estimated cost of $252 K to purchase and install 20 chargers, after the NRCan rebate, be funded from the Parking Reserve 108021 ($172 K) and through contributions from Ward Reserves on a pro-rated basis where the chargers are installed with the upset limits as follows; Ward 1 Reserve Account 108051 ($8 K) , Ward 2 Reserve Account 108052 ($32 K); Ward 3 Reserve Account 108053 ($8 K), Ward 4 Reserve Account 108054 ($8 K); Ward 8 Reserve Account 108058 ($8 K) and Ward 13 Capital (Reserve) Account 3301609613 ($16 K).

Staffing: N/A

Legal: Legal Services will be engaged to advise on the contribution agreement.

HISTORICAL BACKGROUND

At the Council meeting of September 11, 2019, Council approved Item 6 of Planning Committee Report 19-013 regarding Electric Vehicle Charging Stations with an amendment to sub-section (b) as indicated below in italics.

(a) That staff be directed to apply for a Natural Resources Canada Grant which funds up to 50% of the cost of Electric Vehicle Charging Stations, conditional on a minimum of 20 chargers being purchased;

(b) That, if successful on the application, staff be directed to install 20 Electric Vehicle Chargers in selected Hamilton Municipal Parking System lots or other suitable locations; ***and that prior to installation, staff report back to the Planning Committee on locations and pricing structure, including what Hamilton's comparator municipalities are charging for the use of Electric Vehicle chargers; and,***

(c) That the estimated cost of $252,000 for 20 chargers, after the 50% rebate, be funded through a combination of Ward Reserve funds and the Parking Reserve Account No. 108021.

In addition, Council at its meeting on September 25, 2019 approved Item 12 of Planning Committee Report 19-014 as follows:

(i) Electric Vehicle Charging Stations in New Developments (Item 12.1)

WHEREAS, the City of Hamilton has declared a Climate Emergency and is moving towards a zero-carbon economy;

THEREFORE BE IT RESOLVED:

(a) That staff be directed to investigate options available through the planning approvals process to require an appropriate number of Electric Vehicle Charging Stations to be included as part of the parking requirement for new development, and report back to the Planning Committee; and,

(b) That staff be directed to review the City's by-laws, including the Municipal and Private Property By-law and On-Street Parking By-law, and report back with recommendations for ensuring that the City has appropriate tools and mechanisms in place to prohibit and enforce the parking of non-electric vehicles at Electric Vehicle Charging Stations in municipal parking lots and on-street parking spaces.

Item (i) (a) will be addressed through a separate report to Planning Committee while item (i) (b) is addressed as part of this report.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

N/A

RELEVANT CONSULTATION

- Energy Initiatives; and,
- Policy Planning and Zoning By-law Reform.

ANALYSIS AND RATIONALE FOR RECOMMENDATION(S)

Department of Natural Resources Canada (NRCan) - Zero Emissions Vehicles Infrastructure Program (ZEVIP)

The ZEVIP objective is to address the lack of charging and refuelling stations in Canada by increasing the availability of localized charging opportunities where Canadians live, work, and play. In order to be considered for funding, the submitted project must meet several requirements. Noted below are some of the key requisites:

- Increase localized charging opportunities in Public Places and On-Street;
- Include a minimum of 20 charging stations;
- Charging infrastructure must be installed in a parking space clearly identified for the purpose of charging electric vehicles (EVs);
- Be a permanent installation (mounted or fixed models);
- Be new and purchased equipment (not leased);

- Be for a new installation or expansion of an existing installation (not for the replacement of an existing installation); and,
- To be eligible for the funding amount, each connector must be able to charge a vehicle and support a dedicated parking space simultaneously.

Transportation Planning and Parking staff have recently received notification that the City's application for the Zero-Emission Vehicle Infrastructure Program has been conditionally approved for funding consideration. The next steps involve negotiation with NRCan of a contribution agreement.

Potential EVCS Locations and Estimated Costs

In preparation of the funding application to NRCan, several potential locations for the installation of EVCS were identified. All the potential locations identified are parking facilities under the management of the Hamilton Municipal Parking System (HMPS). The current proposed locations are identified as Appendix "A" attached to this Report. These selected locations are based upon a staff assessment of several factors including the following:

- Lot size/number of spaces;
- Occupancy data collected as part of the Parking Master Plan (PMP);
- Proximity of publicly accessible EVCS as shown on Chargehub and Plugshare (online resources);
- Proximity to other parking lots (both HMPS lots and private lots); and,
- Subjective knowledge of the City's trip generation (concentration of workforce, BIA's, entertainment, etc.).

However, the locations identified in Appendix "A" attached to this Report can be amended or removed depending on operational and installation costs, including but not limited to:

- Material;
- Labour;
- Permit fees; and,
- Installation costs (conduit, wiring, trenching and capacity of existing power supply).

If, after the detailed feasibility studies to install hydro for a particular charger location results in a cost which exceeds the maximum estimated cost or would result in the overall project cost being exceeded, alternative locations within the target ward will be discussed with the Ward Councillor.

Cost estimates for the EV chargers is based on quotes received for a recent installation of EV chargers in Ward 5. Based on these costs, staff have developed a low and high range estimate per location. The estimates by Ward reflect the upper end of the cost estimates; however, it should be noted there is a high degree of uncertainty until quotes for electrical work are received.

Pricing Structure for Use of EVCS

Many municipalities across Canada that installed EVCS undertook initial and subsequent installations with the strategy of no cost for public charging, other than applicable parking fees required at each location, during the initial years of operation in order to build awareness and increase usage. This, in combination with supportive government policies and various Provincial and Federal purchase rebate programs, expanded model availability and increased consumer familiarity and interest in the technology, were key factors that contributed to strong growth in EV sales in Canada.

Examples of municipalities that current do not implement fees for use of the EV chargers include the following:

- In the City of Burlington, there is no fee to charge a vehicle at stations in municipal lots, however the City's parking rates apply; and,
- In the City of Mississauga there is no charge for use of EV chargers in municipal parking lots beyond the base parking rate.

In Kingston, EV chargers installed by the municipality were initially free to use for the first two years of operation. This program ended in December 2019 and the City now charges for use. It was estimated that the cost of electricity for the Level-Two chargers over the two-year period was $12 K for 21 locations.

The emerging trend across Canada is to require the EV owner to remit payment based on the fees imposed by the charging station owner. Typically, these fees are set up to recover all or a portion of the costs. Through the introduction of user fees, EV owners are encouraged to charge only as required, mitigating congestion/unfair parking space usage and increasing turnover and access by others at the station.

Examples of different rate structures are as follows for "smart" Level-Two charging stations (four-hour maximum stay at EVCS):

- $2 per hour for the first two hours and $5 for subsequent hours (City of Richmond);
- $2 per hour for each hour (City of Vancouver);
- $1 per hour for the first two hours, and $5 for subsequent hours (City of Coquitlam);

- $1.50 per hour for each hour (Cities of Kingston, Waterloo, St. Catharine's, Oakville);
- $0.50 per hour for each hour (City of Kitchener); and,
- $2.50 per hour for each hour (Town of Orangeville).

In summary, although there are many municipalities that do not require payment for charging at EVCS currently, the emerging trend in municipal sectors is to charge a pay-per-use fee ranging from $1.00 per hour upwards or a flat fee of $2.50 upwards per charge.

Pay-to-use chargers or "smart" Level-Two meters are equipped with technology that create numerous benefits:

- Discoverable from smart phones. Availability status of charging station can be monitored;
- Accept electronic forms of payment, enabling the City of Hamilton to set rates that will recover operating costs, but which are also affordable to encourage the transition to EVs;
- Through the introduction of user fees, EV owners are encouraged to charge only as required, mitigating congestion/unfair parking space usage and increasing turnover and access by others at the station;
- Create metrics and related data regarding numbers of unique and return visits, lengths of stays, etc. This data can then be used to monitor uptake of EVs locally and to evaluate and support the need for future EVCS installations that could help the City of Hamilton with future EV program expansion decisions; and,
- Provide opportunities to promote local events and activities via electronic messaging available at the site.

It should be noted, that if electricity costs $0.11 per kilowatt-hour, charging an all-electric vehicle with a 120 km range (assuming a fully depleted 24 kWh battery) will cost approximately $2.64 to reach a full charge. This cost is about the same as operating an average central air conditioner for about six hours.

Municipal By-laws

Staff have reviewed the Municipal By-laws that would be utilized in the enforcing use of EVCS and are satisfied that no revisions are required at this time given the proposed locations are in off-street parking facilities. However, if, in the future on-street charging stations are implemented, a new schedule and signage would need to be created within By-law 01-218 to ensure on street spaces can be enforced adequately. For off-street locations, the current parking fines that would be applicable for offences to misuse of signed EVCS range from $33 to $50 for each offense.

It is also noted that in 2019, as part of Bill 123, Bill 123 (Chapter 18 of the Statutes of Ontario, 2019) the province created an Act to amend the *Highway Traffic Act* respecting electric vehicle charging stations. Section 30.2 of this act states that "No person shall park a vehicle in an electric vehicle charging station that is identified by a sign that satisfies the prescribed requirements unless the vehicle is an electric vehicle and the vehicle is attached to the station's charging equipment." A person who contravenes section 30.2 is guilty of an offence and on conviction is liable to a fine of $125. Although this violation is administered as a Provincial Offence under the bill, the intent of this bill could be replicated in the City of Hamilton Administrative Penalties By-law (By-law 17-225) and will be considered as a future update to such by-law.

ALTERNATIVES FOR CONSIDERATION

1. Not implement any pay per use fee for Level-Two electric charging stations in municipal parking facilities;

2. Implement free charging for a period of 24-months, following which prices would be set at $1 per hour for the first four hours, and $4 for subsequent hours; and,

3. Implement a flat fee of $2.50 per charge (maximum four-hour charge) at all existing and new Level-Two EVCS. The flat fee per charge will fund the approximate electricity cost to the municipality for a full charging vehicle (maximum four-hours).

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Community Engagement and Participation
Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

Economic Prosperity and Growth
Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

Healthy and Safe Communities
Hamilton is a safe and supportive City where people are active, healthy, and have a high quality of life.

Clean and Green
Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

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

Culture and Diversity
Hamilton is a thriving, vibrant place for arts, culture, and heritage where diversity and inclusivity are embraced and celebrated.

Our People and Performance
Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" – Proposed Electric Vehicle Charger Station Locations

AM:cr

Proposed Electric Vehicle Charger Station Locations

Name of Facility	Facility Number	Proposed Number of EVCS	Number of Parking Spaces to be Chargeable	Ward Number
City Hall	40	3	6	2
York Parkade	68	3	6	2
Convention Centre	37	4	8	2
Ottawa Street North	2B	1	2	4
Vine Street	62	1	2	2
King Street	8	1	2	2
Dundas	7DU	1	2	13
Main Street East	7	1	2	2
Dundas	4DU	1	2	13
Barton Street East	82	1	2	3
Upper James	33	1	2	8
Mulberry	36	1	2	2
Westdale on-street	-	1	2	1

10.8

Hamilton

CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Environmental Services Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	March 23, 2020
SUBJECT/REPORT NO:	Waterpark Reserve Funding Request (PW20014) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Adriana Byrne (905) 546-2424 Ext. 2156
SUBMITTED BY: **SIGNATURE:**	Craig Murdoch Director, Environmental Services Public Works Department

RECOMMENDATION

That the capital works required on the Eazy River Ride at Wild Waterworks to satisfy the Public Health Services order be funded from the Waterpark Operations Reserve (#112224) to an upset limit of $530,000.

EXECUTIVE SUMMARY

Hamilton Conservation Authority (HCA) operates Confederation Beach Park, which includes Wild Waterworks, on behalf of the City of Hamilton (City) under the authority of a management agreement.

Wild Waterworks is subject to annual inspections which include public pool inspections by Public Health Services (PHS). Following the August 2019 inspection, PHS issued an order requiring three items of non-compliance to be completed:

- That depth markings be added throughout the Eazy River ride,
- That submerged surfaces of the Little Squirt Works Spray Pad be made light or white in colour; and,
- That submerged surfaces of the Eazy River ride be made light or white in colour

It is estimated that the total cost of the capital work required to comply with the order will be approximately $530,000.

As this work was unforeseen, the full cost of this project cannot be covered by the existing approved capital budget available to the HCA for capital work at Confederation Beach Park. The work on the Little Squirt Works Spray Pad can be accommodated through the approved funds; however, the required work on the Eazy River ride exceeds current funding. Pursuant to the City's Waterpark Reserve Policy, the purpose of this report is to seek approval to fund the capital works on the Eazy River ride from the Waterpark Operations Reserve (#112224).

Alternatives for Consideration – See Page 3

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The Waterpark Reserve Policy permits that Waterpark Reserve (#112224) funds can be used for capital projects at Wild Waterworks. The minimum target balance for the reserve is $300,000; this request will not reduce the reserve below this target level.

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

In 2019, PHS issued an order requiring three items of non-compliance to be completed prior to the opening of Wild Waterworks for the 2020 operating season. The three items are: depth markings to be added throughout the Eazy River ride and submerged surfaces of both the Little Squirt Works spray pad and Eazy River ride be made light or white in colour. HCA has investigated the work required and received approval from PHS to extend the compliance deadline for the Eazy River ride work. This extension requires that all work be completed prior to Spring of 2021 rather than 2020 ensuring that the 2020 operating season is not impacted by the required work. In 2019 and 2020, the City approved a capital budget of $175,000 for capital work within Confederation Park including Wild Waterworks. As this budget is not sufficient to absorb the full cost of the work specified, a transfer from the Waterpark Reserve is being recommended.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The recommendations of this report comply with the Reserve Policy - Waterpark Reserve Policy.

RELEVANT CONSULTATION

The following were consulted in the preparation of this report:

- Hamilton Conservation Authority
- Corporate Services Department, Financial Planning Administration and Policy Division
- Healthy and Safe Communities Department, Public Health Services and Recreation Divisions
- Public Works Department, Environmental Services Division, Parks and Cemeteries Section

ANALYSIS AND RATIONALE FOR RECOMMENDATION

The Order from PHS for the upgrades needed at the waterpark and subsequent investigation of the required work came after the submission of the 2020 capital budget. Given the timing and sensitivity of the work, waiting until the 2021 capital budget process is not recommended. Doing so will delay the procurement process and not allow HCA to complete the work to meet the order deadline. The Eazy River ride in addition to the two (2) east slides would need to be closed for the 2021 season until the work could be completed which would impact user experience and reduce park revenue.

ALTERNATIVES FOR CONSIDERATION

Require Staff to Seek Alternate Funding for The Required Capital Work

Financial: This will delay the procurement process and not allow HCA to complete the work to meet the order deadline. The Eazy River ride in addition to the two (2) East Slides would need to remain closed for the season until work could be completed potentially in 2021 which would impact user experience and reduce park revenue. As park revenue is used to fund the Waterpark Reserve, it is expected that a reduced contribution to the reserve would occur. Additional expense would also be incurred in order to erect safety fencing required to isolate the public from the closed area in 2021.

Staffing: Staff would not be required for a ride that is closed, resulting in a temporary reduction of HCA staff.

Legal: N/A

Not Complete the Required Work

Financial: The Eazy River ride in addition to the two (2) East Slides would need to be closed permanently which would impact user experience and reduce park revenue. As park revenue is used to fund the Waterpark Reserve, it is expected that a reduced contribution to the reserve would occur. Additional expense would also be incurred in order to erect permanent safety fencing to isolate the public from the closed area.

Staffing: Staff would not be required for a ride that is closed, resulting in a permanent reduction in HCA staff.

Legal: N/A

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

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Hamilton is a safe and supportive City where people are active, healthy, and have a high quality of life.

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APPENDICES AND SCHEDULES ATTACHED

N/A

INFORMATION REPORT

TO:	Chair and Members Audit, Finance and Administration Committee
COMMITTEE DATE:	March 26, 2020
SUBJECT/REPORT NO:	Backlog in Processing Apportionment of Land Taxes (FCS20026) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Maria Di Santo (905) 546-2424 Ext. 5254
SUBMITTED BY: **SIGNATURE:**	Rick Male Director, Financial Services and Taxation & Corporate Controller Corporate Services Department

INFORMATION

Where a parcel of land has been severed into individual lots, Section 356 of the *Municipal Act, (2001)* allows for the apportionment of unpaid property taxes. Apportioning property taxes allows the Municipality to collect unpaid property taxes equitably amongst the newly created lots.

With on-going residential development, this is a task Taxation staff completes periodically throughout the year, as information is received from the Municipal Property Assessment Corporation (MPAC). This ensures that affected property owners receive the apportionment for the land taxes within a reasonable time. Apportionments for land taxes completed the year following the sale are typical and should be expected, as MPAC needs time to collect all relevant information pertaining to the severance and subsequent development.

Taxation staff require a Severance/ Consolidation Information Form (“SCIF”) from MPAC in order to apportion land taxes appropriately. The SCIF splits the assessment of the larger parcel of land into the newly created lots, which is used to then apportion any unpaid property taxes.

Due to an unexpected prolonged staff vacancy, there is a backlog in the number of SCIFs to be reviewed. While this backlog is being addressed, there will be apportionments of land taxes completed in 2020 that pertain to sales in 2018 or prior. As such, special consideration will be given to taxpayers affected. This special consideration is in adherence to section 9 of the Council approved Tax Collection Policy (FCS15068), which specifically states:

> ***Special Payment Arrangements / Deferrals***
> *Under the current Municipal Act, a Treasurer can only write-off taxes upon a failed tax sale or successful assessment appeal. Where special circumstances exist, the Treasurer can authorize the deferral of tax arrears and the freezing of penalty and interest charges where it is not in the City's best interest to proceed with a tax sale. This option would also be considered where in extreme cases it is in the best interest of all parties. Examples of such situations would be a private mortgage holder taking over a property significantly in arrears and disrepair, new owners assuming a brownfield property offering to remediate and clean-up of dilapidated properties, etc.*

For any apportionments completed in 2020 that pertain to sales which occurred in 2018 or prior, staff will freeze the penalty and interest charges related to the apportioned land taxes, for a period of up to 6 months, thereby allowing affected taxpayers additional time to settle the outstanding taxes. Current taxes levied would continue to be subject to regular penalty and interest charges if not paid by the due date, in accordance with By-law 13-136 "A By-law to Set Penalty and Interest Rates". For significant apportionment amounts in excess of $1,500, additional consideration may be granted, should the taxpayer agree to enrol in pre-authorized payments.

In order to process the current backlog more efficiently, a tracking system has been put in place to record all SCIFs received from MPAC. Moving forward, this tracking system will also assist in ensuring staff identify, review and complete the apportionment, if required, within 6 months of receipt of any new SCIFs, and ideally no later than the year following the sale, where feasible. A temporary position will also be posted to assist in addressing the backlog. It is expected this backlog will be addressed by the end of 2020. Once the backlog is addressed, with some minor reallocation of duties, it is expected that the existing complement would be sufficient to ensure apportionments are completed in a timely manner moving forward. Meeting dates have been set up every other month for the remainder of 2020 to approve the apportionments and allow affected taxpayers the opportunity to discuss the apportionment with staff. Section 356 of the Municipal Act requires that written notice be given to the taxpayer once the apportionment has been processed, should they wish to appeal the apportionment to the Assessment Review Board. In adherence to the Municipal Act, taxpayers can only appeal the tax apportionment calculation.

The amount of land taxes apportioned to each purchaser varies from development to development. The SCIF provided by MPAC, which is the basis for an apportionment, takes the assessment value of the original parcel of land and redistributes the value amongst the newly created individual lots. The apportioned assessment value for a newly created lot may range from an estimated 30,000 to 100,000. This would equate to annual property taxes pertaining to land being apportioned of approximately $380 to $1,300 per lot /unit (using 2018 City of Hamilton urban Residential tax rates). If the Builder paid a portion of the land taxes, this payment would be apportioned to each lot/unit, thereby reducing the outstanding amount due.

Not all apportionments are the same, nor do all SCIFs translate into a required apportionment. With any new development, it is common that there is a delay in billing the full property taxes, and that there would be a period in which property taxes pertaining to the land and structure are being billed separately. The following provides for common scenarios for property taxes pertaining to the land.

- Property Taxes in the year of sale:
    - Builder pays the total property taxes. The Builder then adjusts for the property taxes on closing with each respective purchaser. No apportionment is required.
    - Builder does not pay the total annual property taxes (or only a portion of the annual property taxes). An apportionment is required in order to collect the unpaid property taxes. As the City of Hamilton (City) is not privy to how property taxes were adjusted on closing with each respective purchaser, once the apportionment is completed, purchasers are instructed to go back to their lawyer to readjust for property taxes, if required.
- Property Taxes in the year following the sale:
    - Due to MPAC's cut-off for the annual returned roll, an apportionment would also be required if the roll returned does not yet reflect the individual lots. Typically, this would occur for sales that transpired in the last quarter of the year.
- In the case of subsequent resales, the current owner would be responsible for the full outstanding apportioned taxes, regardless of what year the apportioned land taxes pertain to. There are no time limitations for apportioning unpaid land taxes. The new owner would then need to go back to their lawyer to readjust for property taxes or make a claim through title insurance (if purchased). If a claim

is made through title insurance, the insurance company would then attempt to collect from the previous owner.

- If one of the newly created lots is assigned the roll number for the original block of land, an apportionment is required to ensure that any property tax arrears for the original block of land is not unfairly assumed by one of the purchasers.

Although the above scenarios are common outcomes of a parcel of land being split into two or more parcels, delays in processing apportionments may add to taxpayer frustration and may possibly make it more difficult in readjusting for property taxes with the Builder or previous owner, if required. Where the City may have contributed in the delay of apportioning land taxes in excess of a reasonable timeframe, special consideration will be granted. While addressing the backlog throughout 2020, staff will therefore utilize the authority granted through the Council approved Tax Collection Policy to provide for such consideration.

APPENDICES AND SCHEDULES ATTACHED

N/A

MD/rw/dw