



CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Hamilton Water Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	August 12, 2020
SUBJECT/REPORT NO:	Water Treatment Plant Clearwell Improvement (PW20026) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Stuart Leitch (905) 546-2424 Ext. 7808
SUBMITTED BY:	Cari Vanderperk Acting Director, Water and Wastewater Planning and Capital Public Works Department
SIGNATURE:	

RECOMMENDATION(S)

- (a) That the single source procurement, pursuant to Procurement Policy #11 – Non-competitive Procurements, for construction services for the clearwell improvements at the Woodward Water Treatment Plant at the upset limit of \$1,300,000 be awarded to Bennet Mechanical Installations (2001) Ltd. and funded from Project ID No. 5141166110;
- (b) That the General Manager of Public Works, or their designate, be authorized and directed to negotiate, enter into and execute a Contract and any ancillary documents required to give effect thereto with Bennet Mechanical Installations (2001) Ltd. in a form satisfactory to the City Solicitor;
- (c) That the single source procurement, pursuant to Procurement Policy #11 – Non-competitive Procurements, for consultancy services including project management, contract administration during construction, site inspection and commissioning / warranty services for the clearwell improvements at the Woodward Water Treatment Plant at the upset limit of \$300,000 be awarded to AECOM Canada Ltd. and funded from Project ID No. 5141166110; and,
- (d) That the General Manager of Public Works, or their designate, be authorized and directed to negotiate, enter into and execute a Contract and any ancillary

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

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

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

**SUBJECT: Water Treatment Plant Clearwell Improvement
(PW20026) (City Wide) - Page 2 of 5**

documents required to give effect thereto with AECOM Canada Ltd. in a form satisfactory to the City Solicitor.

EXECUTIVE SUMMARY

In early July 2020, Hamilton Water issued a mandatory water use restriction to the residents and businesses of the City, effectively banning non-essential outside water use. This was due to an early summer heatwave combined with construction delays associated with unexpected drain valve repairs required within Phase 1 of the Woodward Water Treatment Plant Process Upgrades. The drain valve has been repaired; however, a capacity risk still remains in the water treatment process and this report seeks approval to mitigate this risk as quickly as possible.

The Woodward Water Treatment Plant Process Upgrades (Phase 1) project commenced September 2018 and is currently scheduled for completion by January 2021. Phase 1 represents an approximate \$27M upgrade and is being delivered through the following contracts:

- AECOM was competitively procured through a Request for Proposals (C11-04-17) to provide design and construction administration services.
- Bennett Mechanical Installation (2001) Ltd. was competitively procured through a Request for Tenders (C13-23-18) for construction.

Currently, the Woodward Water Treatment Plant capacity is restricted when one of the clearwells is out of service. This capacity restriction results from the water filtration process sequence, where one half of the filters supply one clearwell and vice versa. Effectively, when one of the clearwells is out of service, only one half of the filters can be used to process potable drinking water. In order to eliminate this capacity restriction, staff recommend construction of a channel that interconnects the separate filtered water conduits, which will allow all of the filters to process potable water even if one of the clearwells is out of service.

In order to construct the interconnecting channel in the most efficient and timely manner, which will help mitigate possible future water use restrictions, this report recommends single source procurement for both the contractor (Bennett Mechanical Installations (2001) Ltd.), and the consultant (AECOM Canada Ltd.), whom are already mobilized on the site for Phase 1 construction and contract administration. The value of this additional work is estimated to be \$1,600,000, and it is anticipated to add approximately five months to the construction schedule, extending the completion of Phase 1 construction from January 2021 to June 2021.

Alternatives for Consideration – See Page 5

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: This report is recommending that \$200,000 be added to the consultant (AECOM) Contract C11-04-17 from Project ID No. 5141166110 (Water Treatment Plant – Process Upgrades) for project management, contract administration during construction, site inspection and commissioning / warranty services. In order to create efficiencies, a Procurement Policy #11 – Non-competitive procurement with AECOM was initiated in July 2020 at a value of \$100,000 in order to complete the design only. Should the construction works recommended in this report not be approved under Policy #11, the prepared design documents will be available to utilize for a future competitively procured contract.

This report is recommending that the construction works be initiated through a contract change order, following approval of Report PW20026. The additional construction works are currently estimated to be valued at \$1,300,000. Bennett Mechanical Installation (2001) Ltd.'s current approved purchase order under Contract C13-23-18 includes sufficient budget contingency to cover this additional work, so no additional funds are required.

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

The scope of Phase 1 of the Water Treatment Plant Process Upgrades includes the following improvements:

- Chemical/Lower Stores building architectural upgrades
- Flocculation mixers replacement
- Flocculation tank concrete restoration
- Filter inlet and backwash valve/gate replacement
- Replacement of spent granulated activated carbon filter media
- Filter #7 underdrain replacement
- Clearwell gates replacement
- Clearwell expansion joint repairs
- Clearwell drain valve replacement
- Filter gallery piping restoration

**SUBJECT: Water Treatment Plant Clearwell Improvement
(PW20026) (City Wide) - Page 4 of 5**

Currently, the Woodward Water Treatment Plant capacity is restricted when one of the clearwells is out of service. The existing water treatment process does not allow filtration galleries to supply both clearwells. Effectively, when one of the clearwells is out of service, only one half of the filters can be used to process potable drinking water. In order to eliminate this capacity restriction, staff recommend construction of a channel that interconnects the separate filtered water conduits, which will allow all of the filters to process potable water even if one of the clearwells is out of service.

During the construction project for Phase 1, the work included taking each clearwell out of service (at different times) for necessary repairs. The shutdowns commenced in early winter, and both clearwells were scheduled to be available for use by early June 2020 ahead of the high-water demand period that typical begins in mid summer. However, an unexpected failure of a clearwell 1 drain valve occurred that required repair and delayed the return to service for that clearwell to July 10, 2020. The early summer heatwave combined with the potable water production capacity associated with this construction delay (resulting from additional scope), required Hamilton Water to issue a Mandatory Water Use Restriction to the residents and businesses of the City, effectively banning non-essential outside water use from July 4, 2020 until July 10, 2020. If the proposed interconnect between the filtered water conduits had been in place, it is unlikely that a community water restriction would have been necessary, despite the early summer heat wave.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

This report is in accordance with By-law 17-064 Procurement Policy #11 – Non-Competitive Procurements.

RELEVANT CONSULTATION

The following groups have been consulted:

- Finance, Corporate Services
- Procurement, Corporate Services has provided guidance as to adherence to the Procurement Policy.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

The construction of the interconnect between the filtered water conduits at the Woodward Water Treatment Plant will provide several benefits including:

- Reduce the risk of future community water use restrictions in the event one of the clearwells is out of service;

**SUBJECT: Water Treatment Plant Clearwell Improvement
(PW20026) (City Wide) - Page 5 of 5**

- Proceeding with the works via single source procurement ensures that the construction works can be completed by June 2021, ahead of next summer's high-water demand;
- The current contractor (Bennett) and consultant (AECOM) have intimate constructability and technical knowledge of the Water Treatment Plant and are already mobilized and able to complete this assignment;
- Improves drinking water production security in advance of Phase 2 of the Water Treatment Plant Process Upgrades which is anticipated to commence in 2024.

ALTERNATIVES FOR CONSIDERATION

A capital project for the construction of the interconnection between the filtered water conduits at the Water Treatment Plant, including construction administration could be initiated through the 2021 Water, Wastewater and Storm Rate Budget (Rate Budget) process. After approval of the 2021 Rate Budget, this work could then be competitively procured. This option is not recommended as it would delay the work, resulting in construction completion in late 2022 (at the earliest), extending the period that the Water Treatment Plant operates with the potable water production capacity risk that currently exists. In addition, this option fails to take advantage of the potential cost savings that can be realized by using a consultant and contractor that are already mobilized and possess intimate constructability and technical knowledge of the Water Treatment Plant as a result of the work that they have completed to date.

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

N/A