

<b>TO:</b>	<b>CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON OCTOBER 24, 2017</b>
<b>FROM:</b>	<b>KELLY SCHERR, P.ENG, MBA, FEC MANAGING DIRECTOR OF ENVIRONMENTAL &amp; ENGINEERING SERVICES &amp; CITY ENGINEER</b>
<b>SUBJECT:</b>	<b>VAUXHALL WASTEWATER TREATMENT PLANT FLOOD PROTECTION CONSTRUCTION TENDER AWARD</b>

<b>RECOMMENDATION</b>
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That, on the recommendation of the Managing Director of Environmental and Engineering Services & City Engineer, the following actions **BE TAKEN** with respect to tender award for the construction of the Vauxhall Wastewater Treatment Plant (WWTP) Flood Protection.

- (a) The price submitted by H.I.R.A. Limited, 63 Gaylord Road, St. Thomas, ON N5P 3R9, of \$4,315,844.00 excluding HST, to construct the Vauxhall WWTP flood protection measures and effluent pumping station **BE ACCEPTED**;
- (b) The financing for these acquisitions **BE APPROVED** as set out in the Sources of Financing Report attached hereto as Appendix "A";
- (d) The Civic Administration **BE AUTHORIZED** to undertake all administrative acts that are necessary in connection with this project;
- (e) The approvals given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract or issuing a purchase order for the work to be done relating to this project; and,
- (f) The Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

<b>PREVIOUS REPORTS PERTINENT TO THIS MATTER</b>
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2016-10-04 CWC – Infrastructure Canada Phase 1 Project Requests - Clean Water and Wastewater Fund

2017-06-07 CWC - Infrastructure Canada – Phase One Investments Clean Water and Wastewater Fund Report.

<b>2015-19 STRATEGIC PLAN</b>
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This project supports the Wastewater Business Plan and the Strategic Plan with respect to building a sustainable city with robust infrastructure and a strong and healthy environment.

## BACKGROUND

### Purpose

The purpose of this report is to award the construction tender for the planned flood protection and effluent pumping station at Vauxhall WWTP.

### Context

Wastewater treatment plants in London discharge treated effluent to the Thames River and are typically located in close proximity to the River. Climate change has altered weather patterns in such a way as to increase the frequency and severity of flooding events in the Thames which increases the risk of damage to wastewater treatment facilities and impacts on the performance of treatment processes. This project will ensure that Vauxhall WWTP can continue to operate during extreme flooding events.

## DISCUSSION

A project to provide “Climate Change Resilience” at the Vauxhall WWTP was identified as a project in the Clean Water & Wastewater Fund (CWWF) application process. Climate change has altered weather patterns such that the risk of flooding events in the Thames River is increased over historical trends. Vauxhall WWTP is located within the 100- to 250-year floodplain of the Thames River and is at risk during extreme flooding events. The risks to WWTPs during extreme river flooding events is twofold:

- High water levels can inundate treatment plant buildings and tanks, leading to extensive and costly damage to buildings and equipment. This inundation can also occur through the outfall and connected internal conduits of the plant; and
- High water levels impact the hydraulics of the plant, limiting how much effluent can be discharged and limiting the level of treatment that can be provided to wastewater flows.

This projects aims to address the risks to Vauxhall WWTP associated with flooding in the Thames River by:

- Constructing a physical flood protection barrier around the plant. This barrier will be designed to protect the plant from a 1-in-250 year flood event, by keeping river water out of the facility; and
- Constructing a pumping station that will isolate the plant from the river to prevent backflow through the plant outfall and lift treated water above the river levels to enable the plant to continue treating and discharging regardless of the water level in the river.

A schedule ‘B’ municipal class environmental assessment was completed for this project and identified the pumping station and flood protection berm as the preferred solution.

### Purchasing Process

A Request for Tender (T17-104) was issued in accordance with Section 13 of the Procurement of Goods and Services Policy, and five compliant tenders were received. The lowest two compliant bids were evaluated to ensure compliance with the requirements of the RFT and to ensure that the pricing was not imbalanced in any way.

The H.I.R.A. tender was found to be compliant with the project requirements and is the lowest price bid. This contractor has previously completed work for the City, and is expected to be capable of providing the services proposed for the price tendered. It is recommended that H.I.R.A. Limited be contracted to construct the Vauxhall Effluent Pumping Station and Flood Protection Works.

### Clean Water & Wastewater Fund (CWWF) Program Update

Under CWWF Phase 1, the City applied for 23 projects. Originally, only 22 projects were approved for a total of \$38.3 million. Through the CWWF program, the City finances 25% of the work while the other 75% of the cost is claimable from the fund.

The one project that was not approved was related to design and construction of flood protection measures at the Vauxhall Pollution Control Plant. The City was subsequently approved for this project at a project cost of \$3.1 million, increasing London's total approved CWWF projects to \$41.4 million (**Table 1**). This exceeds London's projected allocation under CWWF Phase 1 which was to be approximately \$40 million in total project costs.

The \$41.4 million in eligible CWWF projects includes Federal government funding of \$20.2 million, Province of Ontario funding of \$10.1 million and the City of London funding \$10.1 million. One project will also receive a \$900 thousand grant from the Independent Electricity System Operators (IESO). Excluding this grant, the Federal contribution is 50% of the funding, while the Province of Ontario and City share equally the remaining 50%.

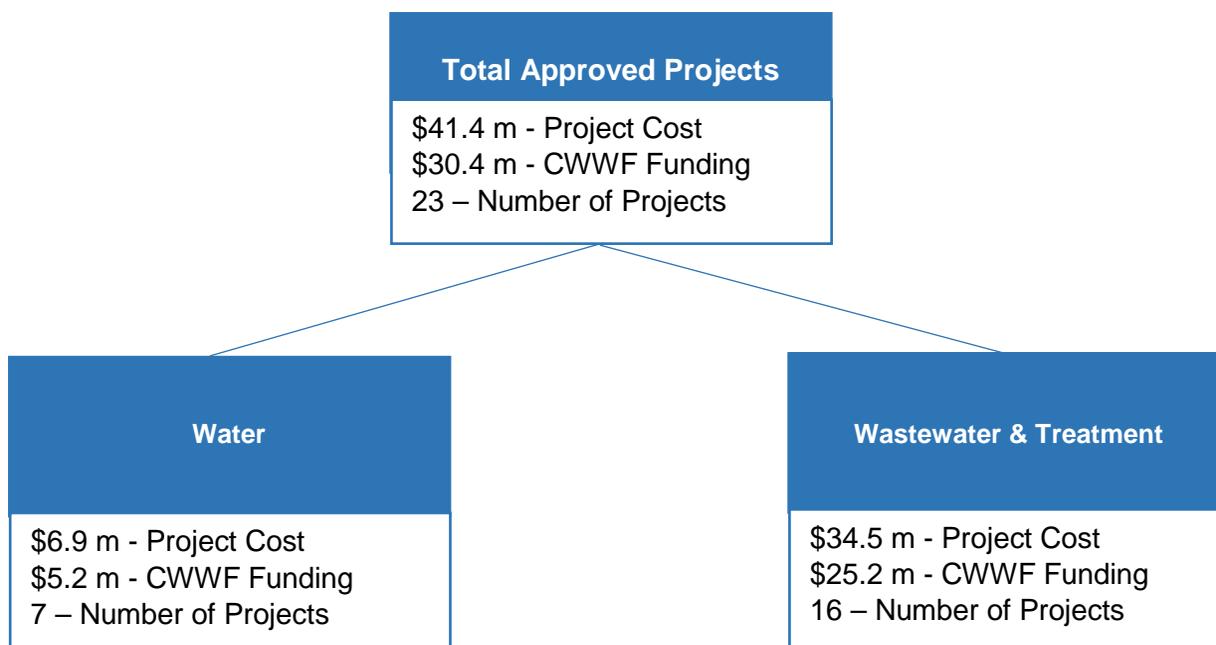
The approved projects consist of both Water (\$6.9 million) and Wastewater & Treatment (\$34.5 million) projects (**Exhibit 1**).

**Table 1**

Project ID	Project Title	Originally Approved CWWF Capital Works	Additional Approval	Revised CWWF Capital Works
LON-008	Vauxhall PCP Climate Change Resiliency	\$0	\$3,053,000	\$3,053,000
Various	All remaining CWWF Projects	\$38,342,851	-	\$38,342,851
<b>TOTAL CAPITAL WORKS</b>		<b>\$38,342,851</b>	<b>\$3,053,000</b>	<b>\$41,395,851</b>
<b>CWWF FUNDING <sup>1</sup></b>		<b>\$28,082,138</b>	<b>\$2,289,750</b>	<b>\$30,371,888</b>

1) CWWF funding represents 75% of approved capital works, after accounting for \$900,000 IESO grant.

**Exhibit 1**



## **Project Funding**

As noted above, this project was approved under the CWWF program for \$3,053,000. The current contract award to H.I.R.A. for construction activities is \$4,315,844 (excluding HST). In addition to this contract award, the Vauxhall flood protection project includes the installation of a generator at a cost of approximately \$300,000. This brings the total cost of the project to approximately \$4.7M, however the CWWF approved project is only \$3.053 million, leaving a shortfall of \$1.6 million.

A capital project to undertake these works was previously approved by Council in the 2016-2019 Wastewater budget for \$3.2 million, fully funded from the Sewage Works Reserve Fund. The CWWF project approval provides \$2.3 million of CWWF funding. After accounting for the \$1.6 million shortfall, a commitment of \$0.8 million from the Sewage Works Reserve Fund will be freed up.

There are a number of factors causing the tender prices to be higher than the budget including:

- CWWF funding time constraints have forced a significant amount of construction work to be undertaken in the winter which significantly increases concrete costs;
- increased complexity due to efforts to minimize impacts to the surrounding wooded areas and park space by compressing the construction area;
- challenges working around and removing existing buried and abandoned infrastructure; and,
- efforts taken to accommodate future upgrade projects for Phosphorus reduction and other long-term servicing requirements at Vauxhall WWTP.

There are provisions within the CWWF agreement to amend sub-project budgets within the total funding envelope. If administration finds that there is a project that has benefitted from better than expected pricing, we will request a budget amendment from Infrastructure Ontario to move any available funds to cover the above increased costs on the Vauxhall Flood Protection project.

## CONCLUSION

Extreme wet weather events and high river levels present additional risks to low lying wastewater treatment plants such as Vauxhall. These flood proofing measures will help mitigate these risks and protect this critical infrastructure.

It is recommended that H.I.R.A. Limited be contracted to construct the Vauxhall Effluent Pumping Station and Flood Protection.

### Acknowledgements

This report was prepared with the assistance of Kirby Oudekerk, Environmental Services Engineer in Wastewater Treatment Operations and Alan Dunbar, Financial Planning & Policy.

<b>PREPARED BY:</b>	<b>REVIEWED &amp; CONCURRED BY:</b>
<b>GEORDIE GAULD DIVISION MANAGER WASTEWATER TREATMENT OPERATIONS</b>	<b>SCOTT MATHERS, MPA, P.ENG. DIRECTOR-WATER AND WASTEWATER</b>
<b>RECOMMENDED BY:</b>	
<b>KELLY SCHERR, P.ENG. MANAGING DIRECTOR OF ENVIRONMENTAL &amp; ENGINEERING SERVICES &amp; CITY ENGINEER</b>	

Attachment: Appendix "A" – Sources of Financing

Cc: Kirby Oudekerk  
Chris Ginty, CPPB