



## STAFF REPORT

THE CORPORATION OF THE TOWN OF COBOURG

# Public Works, Planning, and Development Standing Committee

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Report to: Mayor, Deputy Mayor, and Councillors  
From: Darryl Ashe, Acting Manager, Environmental Services  
Standing Committee Date: June 5 2024  
Report Number: PW-2024-012  
Council Meeting Date: June 26, 2024  
Subject: **Procurement of Digester Mixing Pump Plant 1**

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### 1. Recommendation:

THAT Council approve the purchase of one Vaughan Chopper Pumps in the amount of \$55,511 (price includes non-refundable HST) which is within the approved 2024 capital budget of \$150,000.

### 2. Executive Summary:

Digester mixing pumps are required to ensure proper mixing of the digested sludge and to facilitate optimal sludge catabolism and methane gas production.

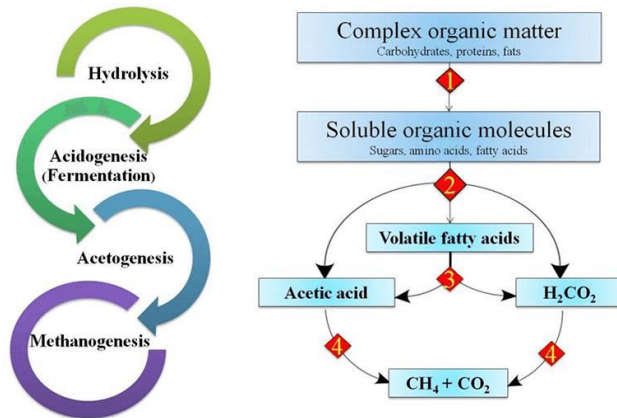
Plant #1 utilizes two (2) Vaughan Chopper Pumps to recirculate the sludge which are over 20 years and need to be replaced. Plant #1 plans to replace one of these pumps in 2024 and the second in 2025.

To prevent costly plumbing changes, the Digester Mixing Pump is being replaced with the same make and model as the existing unit.

The total cost of the pump and installation will not exceed the 2024 Council approved capital budget of \$150,000.

### 3. Background

Plant #1 has a large Primary Digester that employs anaerobic microorganisms to breakdown (i.e., Catabolize) the raw sludge. A by-product of this breakdown is methane gas. The methane is captured in a floating roof on the Secondary Digester, where it is stored. The stored methane is burned in a boiler that is used to maintain the temperature of the Primary Digester at 35°C (i.e., optimum growth temperature for anaerobic microorganisms).



### 4. Discussion:

To keep the anaerobic microorganisms in contact with the sludge and to ensure the sludge temperature is uniform throughout the digester, it must be thoroughly mixed. Plant #1 utilizes two (2) Vaughan Chopper Pumps to recirculate the sludge. The two pumps are alternated weekly, but one pump must always be in operation 24 hours per day, 365 days per year. Additionally, it is necessary to use the second Vaughan Pump to mix the stored biosolids prior to them being land applied to ensure that the biosolids are homogeneous.

The existing pumps have been in service for over 20 years and need to be replaced. Plant #1 plans to replace one of these pumps in 2024 and the second in 2025.



## 5. Financial Impact and Budget

To prevent costly plumbing changes, the Digester Mixing Pump is being replaced with the same make and model as the existing unit. This will ensure identical face-to-face measurements and allow the new pump to slide directly into the space vacated by the old pump without having to alter the piping.

John Brooks Company Ltd. Is the sole distributor for Vaughan Chopper pumps in Ontario so the pumps must be sole sourced through John Brooks:

Vaughan Model HE8N10CS-139 Chopper Pump:	\$39,993.77
60 HP Motor, 1150 RPM, 575/3/60:	<u>\$14,557.18</u>
Combined Cost of Pump + Motor:	\$54,550.95
Non-Refundable HST:	<u>\$ 960.10</u>
Total Cost:	<b><u>\$55,511.05</u></b>

The Vaughan Pump is extremely heavy and located on the lower level of the building. It will be necessary to hire a local contractor with specialized lifting equipment to remove and dispose of the old pump as well as lower the new pump into place. The costs associated with this additional work/equipment is not anticipated to exceed \$20,000 for a total project estimate of \$75,511.05. Council has approved \$150,000 for this project in the Environmental Services 2024 Capital Budget.

## 6. Relationship to Council's Strategic Plan Priorities 2023 to 2027 and beyond:

Thriving Community

Provide the physical infrastructure to support a healthy community that will enable each of us to flourish and reach our full potential

Service Excellence

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Sustainability

Enhance our Financial and Asset Management Plans to provide appropriate levels of services and ensure long-term sustainability

**7. Public Engagement:**

N/A

**8. Attachments:**

N/A

**Report Approval Details**

Document Title:	Digester Mixing Pump Plant 1.docx
Attachments:	
Final Approval Date:	May 13, 2024

This report and all of its attachments were approved and signed as outlined below:

**Laurie Wills, Director of Public Works - May 7, 2024 - 3:26 PM**

**Tracey Vaughan, Chief Administrative Officer - May 13, 2024 - 2:43 PM**