



To: Mayor and Council

From: Jason Barlow, Manager of Water & Wastewater

Date: April 12<sup>th</sup>, 2024

Committee of the Whole Date: April 22<sup>nd</sup>, 2024

Title: WPCP 2024 Capital - High-Speed Turbo Blower Procurement

☒ For Direction

☐ For Information

☒ For Adoption

☒ Attachment (3 pages)

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**Recommendation:** THAT Council of the Corporation of the Town of Smiths Falls pass a Bylaw to sole source the purchase of a High-Speed Turbo Blower from Sulzer Ltd. for the Water Pollution Control Plant;  
**AND FURTHER** that Council authorize the Mayor and Clerk to execute a contract agreement with Sulzer Ltd. in the amount of \$194,361.91 (including net HST).

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**Purpose:** The purpose of this report is to obtain direction from Council to proceed with the sole source procurement of one (1) High-Speed Turbo Blower to replace one (1) of three (3) blowers at the Water Pollution Control Plant (WPCP).

**Background:** In 2017, the Town engaged Honeywell to conduct energy audits across the corporation. The audits resulted in recommendations to fund capital costs for energy-efficient upgrades through grants, guaranteed energy savings, and operational savings where applicable.

Several projects were identified for the WPCP, including lighting upgrades (upgrade to LED), retrofit of effluent pumps to add Variable Frequency Drives (VFD), building envelope upgrades, and UV system upgrades, all of which have been completed. However, one project that was investigated but not executed was the blower upgrade for the Aeration tanks in the secondary treatment process.

The current secondary treatment process involves three (3) rotary lobe blowers, each utilizing 150 hp motors to supply air to the Aeration tanks. This air serves to increase the dissolved oxygen (DO) content in the process tanks and provides mixing to prevent premature settling of solids. The audit recommendation suggested that a future upgrade to High-Speed Turbo Blowers, equipped with VFD controls, would offer higher efficiency and better turndown. This recommendation was also highlighted in the 2018 wastewater treatment Service Sustainability Report (SSR) report.

The recent upgrade of the Programmable Logic Controllers (PLC) infrastructure now enables the Town to integrate online analyzers and controls for a VFD High Speed Turbo Blower upgrade within the facility.

**Analysis and Options:** A summary of the efficiencies achievable through this replacement is as follows:

- Existing 150HP blower power consumption (briefly measured): 88.6 kW/h
- Proposed 100HP Sulzer HST blower average consumption: 44 kW/h (considering turn down and mixing/DO maintenance)
- Annual savings:  $(88.6 \text{ kW} - 44 \text{ kW}) * 8,760 \text{ hours} = 390.7 \text{ MWh/year}$
- Annual dollar savings:  $390,696 \text{ kWh} * \$0.13/\text{kWh} = \$50.8 \text{ K/year}$

Staff submitted an application to the Save on Energy retrofit program, and the Town has been pre-approved for a \$53,520 grant upon completion of the Blower replacement project (Attachment 1 – Save-on-energy - Notice of Pre-Approval 1033220).

The following options are provided for Council's consideration;

**Option 1 (recommended):** Authorize the sole source purchase one (1) High-Speed Turbo Blower from Sulzer at a cost of \$194,361.91 (including net HST - see Attachment 2 – Sulzer HST Blower Quotation 2024).

Sulzer's HST Blower technology, being a shaft that spins friction free on a magnetic bearing results in zero wear. In other words, the shaft floats on the magnetic bearing with no contact on the outer housing, therefore there is little to no maintenance. The application for funding through SaveOnEnergy was predicated on using this technology, hence the estimated financial incentive of \$53,520.00 from SaveOnEnergy.

Based on the lower power consumption, we estimate an annual savings of \$50,000 per year. The Town would recognize a return on investment in less than 4 years with this technology.

**Option 2 (not recommended):** Do not authorize staff to proceed with the sole source purchase from Sulzer Ltd.

Staff recommends that the Town proceed with Option 1 and procure the High-Speed Turbo Blower from Sulzer. If the purchase is authorized, the project can be completed within 28-30 weeks.

**Budget/Financial Implications:** There is \$350,000 approved in the 2024 Capital budget for this project. The approved budget is intended to fund equipment/installation costs and engineering fees associated with the project.

The procurement cost of the High-Speed Turbo Blower from Sulzer is \$194,361.91 (including net HST).

Additional associated project costs include:

- JL Richards estimated engineering costs: \$19,646.23 (including net HST)

The balance of approximately \$123,693 is required to facilitate the balance of project works which includes the installation, integration, and purchase of the remaining project components (online analyzers, electrical connections, and PLC integration).

## **Link to Strategic Plan:**

Vision – Item 1 – Investing in our Infrastructure to keep up with the growing needs of the community.

Strategic Priority #3 – Infrastructure renewal – Goal – To manage our infrastructure in a proactive manner and position the Town for growth.

## **Existing Policy:**

- Asset Management Plan
- Procurement Bylaw No. 7850-2004 (as amended), Policies respecting the procurement of goods and services

**Consultations:** WPCP staff, JL Richards & Associates, Director of Public Works & Utilities, Director of Corporate Service/Treasurer

## **Attachments:**

Attachment 1 – Save-On-Energy - Notice of Pre-Approval 1033220

Attachment 2 – Sulzer HST Blower Quotation 2024

## **Notes/Action (space for Council Member's notes):**

Respectfully Submitted:

Approved for Agenda by CAO:

Original Copy Signed  
Jason Barlow  
Manager of Water and Wastewater

Original Copy Signed  
Malcolm Morris, CMO



Notice of Pre-Approval

Application No: 1033220

February 26, 2024  
  
Town of Smiths Falls  
180 Queen Street, Smiths Falls

This is to inform you that we have reviewed your application for an incentive through the Save on Energy Retrofit Program and we find everything to be in order. This letter is a written notification that the project is pre-approved. Your application is summarized in the table below:

Site Address:	180 Queen Street, Smiths Falls
Project Track(s):	Prescriptive
Estimated Project Cost:	\$185,437.19
Estimated Peak kW Saved*:	44.600
Estimated kWh Saved*:	390696.000
Estimated Incentive:	\$53,520.00
Selected for Site Visit?	No
Selected for QA/QC (Picture Policy)?	No
M&V Required?	No

\* The review for the Pre-Project submission was completed based on the supporting documentation submitted by the Applicant and field observations and verifications where required.

Application Summary

Note that incentives may be capped per program rules.

Facility Address	Peak Demand Savings (kW)	Consumption Savings (kWh)	Incentive	Post-Project Pictures Required
180 Queen Street, Smiths Falls	44.600	390696.000	\$53,520.00	No
Total	44.600	390696.000	\$53,520.00	

Comments:

Application Status:	Pre-Approved
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Based on the Pre-Project review and assessment, your Estimated Participant Incentive is \$53,520.00

However , the actual payable incentive is recalculated after we receive the Post-Project Submission and following the Post-Project Site Visit and verification of savings (if needed). The incentive is capped at 50% of the Total Eligible Project Costs. The payable incentive cannot be more than 10% greater than the estimated Participant Incentive that is pre-approved. No additional Participant Incentive amount will be paid for Eligible Measures if the Eligible Measure type was not included in the pre-approved Pre-Project Submission.

In order to receive your incentive, please follow the steps below:

1.Complete your project as per the Pre-Approval.

Should the pre-approved scope of work for this application change during installation, please notify us immediately to ensure the revised scope is eligible.

2.Complete your Post-Project Submission.

Upon completion of your project, log into the Save on Energy Retrofit Portal and complete the Post-Project submission for your Application.

**Attention:**  
**Company:** Town of Smiths Falls  
**Phone No:** -  
**Fax No.:** -  
**E-Mail:** -

# SULZER

**From:** Maxime Dupras  
**Company:** Sulzer Pumps (Canada) Inc  
**Address:** 151 Superior Blvd. Unit 3-7  
 Mississauga, ON L5T 2L1  
**Phone No:** (905) 670-4677 Cell: (613) 296-9599  
**Fax No.:** -  
**E-Mail:** Maxime.Dupras@sulzer.com

QUOTATION	Page 1
<b>Quote No:</b>	<b>63480</b>
<b>Revision:</b>	1
<b>Date:</b>	April 15, 2024
<b>Prepared By:</b>	Chris Chong
<b>FCA:</b>	Jobsite
<b>Delivery:</b>	28 - 30 Weeks
<b>Submittals:</b>	3 - 4 Weeks ARO
<b>Finals:</b>	
<b>Warranty:</b>	Sulzer Standard
<b>Terms:</b>	Net 30 Days
<b>Funds:</b>	CAD
<b>Taxes:</b>	Extra

**Project:**

ITEM	QTY	DESCRIPTION	UNIT NET	TOTAL NET
		»»»»Design Capacity 1,800SCFM @ 55.2kPg Rise««««		
		One (1) Sulzer ABS Turbo Compressor HST 2500-U100-1-L-58, 580/3/60, 100HP (74.6kW), 34,500 RPM Max, complete with VFD Drive, Magnetic Bearing Controller, Battery Back-Up and Ethernet Communication		
		Inlet Accessories		
		One(1) Wall Mount Frame WMF		
		One(1) Inlet Filter (INF),Process Air, Horizontal INF		
		One(1) Inlet Filter Adapter IFA		
		One(1) Inlet Flanged Silencer DN 200 x DN 200 IFS		
		One(1) Inlet Bellows Joint DN 200 x DN 200 IBJ		
		One(1) Inlet Scrap Trap DN 200 IST		
		Outlet Accessories		
		One(1) Outlet Flexible Joint,DN125 OFJ		
		One(1) Outlet Combined Diffuser Cone Silencer,DN125/DN200 OCS		
		One(1) Back Flow Barrier, Flapper Type (Wafer) 200mm BFB		
		Other Accessories		
		One(1) Blow-Off Silencer,160mm BOS		
		One(1) Motor Cooling Air Silencer,160mm MCS		
		One(1) Outlet Cone Insulation - Covers OFJ & Outlet Cone OCI		
		Spare Parts		
		One(1) Inlet Filter Set		
		One(1) Cabinet Cooling Air Filter Set		
		Testing		
		One(1) Non-Witness Testing - Per Factory Standard		
		Warranty		
		One(1) Standard Warranty (2 Years)		
		Misc		
		One(1) Transport Packaging By Sea		
		One(1) Accessories Packaging		
		One(1) Freight,Town of Smith Falls		
		.....continued		
			<b>TOTAL</b>	

**Attention:**  
**Company:** Town of Smiths Falls  
**Phone No:** -  
**Fax No.:** -  
**E-Mail:** -

**From:** Maxime Dupras  
**Company:** Sulzer Pumps (Canada) Inc  
**Address:** 151 Superior Blvd. Unit 3-7  
 Mississauga, ON L5T 2L1  
**Phone No:** (905) 670-4677 Cell: (613) 296-9599  
**Fax No.:** -  
**E-Mail:** Maxime.Dupras@sulzer.com



**QUOTATION** Page 2

**Quote No:** 63436  
**Revision:** 1  
**Date:** April 25, 2023  
**Prepared By:** Chris Chong  
**CPT:** Jobsite  
**Delivery:** 28 - 30 Weeks  
**Submittals:**  
**Finals:**  
**Warranty:** Sulzer Standard  
**Terms:** Net 30 Days  
**Funds:** CAD  
**Taxes:** Extra

**Project:**

ITEM	QTY	DESCRIPTION	UNIT NET	TOTAL NET
		»»»»Design Capacity 1,800SCFM @ 55.2kPg Rise««««		
	1	Services One(1) Commissioning (Start up & Training) for HST, 2 Days Maximum 1 Trip		
			TOTAL	\$ 191,000.30
<div>           Notes:            ‡.Sulzer cannot release equipment to production until complete technical and contract approval have been achieved; please keep this in mind in regards to your project planning timeline            ‡.Taxes not Included            ‡.Payment Terms: Full 100% Net30 Days From Date of Invoice            ‡.Offer valid for 30 days from the Date of Quote            ‡.Prices limited to only the items and quantities listed, please verify all items and quantities to assure completeness. Additional items will be extra            ‡.Delivery times indicated are based on our current factory loading and subject to change at the time of order            ‡.Sulzer offers this quote subject to the attached General Terms and Conditions of Supply Sulzer Pumps Canada, August 24th, 2016            ‡.All controls, anchor bolts as required by others         </div>				
				<b>TOTAL</b>