A. Recommendations

THAT Council receive Staff Report FAF.20.134, entitled “Sole Source Surge Protection Devices”;

AND THAT Council authorize the sole procurement of surge protection devices from Innosys Power Inc. for Town facilities requiring protection.

B. Overview

This report requests that Staff be authorized to sole source comprehensive surge protection devices from Innosys Power Inc. to be installed in Town facilities requiring protection.

C. Background

In December of 2017, the Town experienced a power surge through one of the water distribution booster stations. The power surge caused significant damage to the pump variable frequency drives, a number of fuses, and the back-up generator transfer switch. Since the only apparent damage to this facility happened to semi-conductor solid state devices, it was thought that the possible cause was a fast-accidental voltage spike, caused by lightning, static electricity, or a magnetic field. Electrical spikes and surges harm equipment differently; however, the damage is still the same. Although the electrical panels had surge protectors installed, they were not affective in protecting the equipment from a voltage spike. The cost of repairs for this single event exceeded $20,000. The damaged equipment caused an area of the Town to have reduced water pressure and insufficient fire flow volumes until all the affected electrical equipment was replaced. Staff did pursue action from the electricity supplier when the damage was incurred; however, the cost to repair the work did not warrant following through with a claim to the Town’s Insurance provider.

Staff are concerned that Town’s infrastructure could be vulnerable to a similar incident. Town staff have been working with Runge and Associates Inc. to assess the current state of the surge protection in the Town’s critical water and wastewater infrastructure, and to make recommendations to ensure the Town’s facilities are adequately protected. Although most of
the Town’s facilities have some level of surge protection, it is insufficient to protect the equipment for a similar type of fast-accidental voltage spike.

Runge and Associates have recommended a comprehensive surge protection device that provides category A, B and C surge protection.

Category A equipment consists of low voltage control systems and offers protection for the low voltage controls, such as Programmable Logic Controls (PLC) / computer controllers from the high voltage switching such as variable frequency drives and soft starter drives.

Category B equipment consists of motor control centers (MCC), switchboards, breaker panels, splitter troughs and other components that are part of the internal electrical distribution system and offers protection against interaction of these components.

Category C protection includes the protection of devices from the incoming power to the facility. The surges may come from the power supply due to grid switching, poor quality power or from lightning strikes to HVAC units on roofs, telephone lines or internet cable lines.

A sole lightning strike can totally disable a facility, destroy MCCs, pump motors, PLCs, SCADA equipment, transfer switches, HVAC units etc. This potentially could be a catastrophic failure for a facility and severely impact the Town’s ability to provide essential services such as safe drinking water.

D. Analysis

POL.COR.07.05, Purchasing of Goods and Services policy notes Sole Sourcing will be permitted if one or more of the following circumstances apply:

1. One supplier/contractor possessing the unique ability or capability to meet the requirements of the Town due to a patent, sales/distributor agreement or copyright.

Staff are recommending sole sourcing to Innosys Power Inc. for the provision of comprehensive surge protection devices for the Town’s existing and future facilities that require surge protection. If approved by Council, the standardized use of surge protection devices in Town facilities will be added to the Town’s Engineering Standards.

Innosys Power Inc. is the sole Canadian distributor for Total Power Solution surge protectors and power quality products. Total Power Solutions is the industry leader in quality, technical support and warranties. These devices are backed by third party independent testing for peak surge current rating; include up to a thirty year “free replacement” warranty on surge protection devices that may fail due to defects in materials, workmanship or any electrical anomaly, including lightning; and come complete with a “dry” contact for connection to a PLC/ auto-dialer/SCADA system for “failure” alarm annunciation. These devices provide an enhanced transient filter capability that other devices are not able to provide. The device is sacrificial. In the event of a surge, the unit is sacrificed, sparing the equipment down the line. Innosys provides pre and post installation inspection of the units at no additional cost to ensure that the units are installed and operating correctly.
Region of Niagara and City of Ottawa use these devices in their facilities and the units are highly recommended by the Town’s Electrical Engineer, Runge & Associates.

Staff recommend sole sourcing Innosys Power Inc. for surge protection devices to allow for standardization of this equipment across all Town facilities requiring protection. The Town’s water and wastewater facilities are susceptible to many types of electrical disturbances due to their location on the power grid system.

In addition, the Town will purchase the surge protection devices for use in the Town’s water and wastewater facilities directly and hire a contractor to install the devices to avoid the contractor mark-up on the devices as part of the Electrical System Protection project. These units will be included as a requirement at the Beaver Valley Community Centre and L. E. Shore Memorial Library as part of the Standby Generator project.

E. The Blue Mountains Strategic Plan

Goal #4: Promote a Culture of Organizational & Operational Excellence
Objective #3 To Consistently Deliver Excellent Customer Service
Objective #5 Constantly Identify Opportunities to Improve Efficiencies and Effectiveness

Goal #5: Ensure Our Infrastructure is Sustainable
Objective #2 Avoid Unexpected Infrastructure Failure and Associated Costs and Liability
Objective #3 Implement Best Practices in Sustainable Infrastructure
Objective #4 Ensure that Infrastructure is Available to Support Development

F. Environmental Impacts

Provision of Safe Drinking Water and ability to adequately treat wastewater.

G. Financial Impact

For the current purchases of these items the Town has two established budgets:

1) The Water and Wastewater Electrical System Protection was approved in the 2019 Capital Budget. The total budget for the project was $480,700 which is being funded by the Water Asset Replacement Reserve Fund and the Wastewater Asset Replacement Reserve Fund

2) Back-up Generators was approved in the 2019 Capital Budget. The total budget was $170,000 and included two generators; one at the Beaver valley Community Centre and the other at the LE Shore Memorial Library. This project is funded from the Capital Replacement Levy.

As future facility capital budgets are presented to Council if this equipment is required the budget will include the cost of this type of surge protection.
H. In Consultation With

Shawn Carey, Director of Operations
Sam Dinsmore, Deputy Treasurer / Manager of Accounting and Budgets
Ruth Prince, Director of Finance & IT Services/Treasurer
Steve Conn, Fire Chief

I. Public Engagement

The topic of this Staff Report has not been subject to a Public Meeting and/or a Public Information Centre as neither a Public Meeting nor a Public Information Centre are required. Comments regarding this report should be submitted to Allison Kershaw, managerwww@thebluemountains.ca or Serena Wilgress, purchasing@thebluemountains.ca

J. Attached

None.

Respectfully submitted,

Serena Wilgress
Manager of Purchasing & Risk Management

Allison Kershaw
Manager of Water and Wastewater Services

Ruth Prince
Director of Finance & IT Services

Shawn Carey
Director of Operations

For more information, please contact:
Allison Kershaw managerwww@thebluemountains.ca 519-599-3131 extension 226
Serena Wilgress purchasing@thebluemountains.ca 519-599-3131 extension 278