CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF DECEMBER 9, 2014

Item 1, Report No. 41, of the Committee of the Whole, which was adopted without amendment by the Council of the City of Vaughan on December 9, 2014.

1 EMERGENCY PURCHASE – ALARM SYSTEM FOR SEWAGE PUMPING STATIONS AND WATER BOOSTER STATIONS

The Committee of the Whole recommends approval of the recommendation contained in the following report of the Commissioner of Public Works, dated December 2, 2014:

Recommendation

The Commissioner of Public Works, in consultation with the Director of Purchasing Services, recommends:

1. That this report be received for information.

Contribution to Sustainability

Sewage pumping stations and water booster stations are necessary parts of the City's infrastructure in order to provide residents and businesses with a safe and healthy lifestyle. Failure of one of these pieces of critical infrastructure could pose a threat to public health, safety or welfare.

Economic Impact

The value of the goods and services purchased under Section 10 "Emergency Purchases" of the City's Purchasing Policy was $174,000, and was funded from the Water/Wastewater Operating Budget. Funds were included in the 2014 Water/Wastewater Budget to upgrade the system, so this emergency purchase of goods and services will not have a negative impact on the 2014 budget.

Communications Plan

N/A

Purpose

As per the requirements of the City's Purchasing Policy, Section 10.3, this report is being presented to advise Council of the emergency purchase of goods and services during the hiatus period.

Background - Analysis and Options

Public Works operates a total of 15 "critical infrastructure" locations that comprise of sewage pumping stations, water booster stations, and a methane flare stack

Public Works is responsible for the operation and maintenance of 15 'critical infrastructure' stations, summarized as: 11 sewage pumping stations; 2 water booster stations, 1 methane flare station and 1 diesel generator station. A brief overview of the purpose of this infrastructure is summarized below:

- Pumping Stations lift and pump wastewater from a lower elevation to a higher elevation and are typically installed where drainage by gravity is not possible
- Water Booster Stations supply an increase in water pressure, in areas where low or inadequate water pressure is available

…/2

- The Vaughan Methane Flare Station is used for burning off flammable methane gas emitted from decomposing garbage at the old Vaughan landfill site
- Camlaren Diesel Generator Station is used as an emergency power-supply (to supply the Camlaren and Sevilla Pump Stations) should the power grid fail. Most of the other stations have an on-site generator for back-up power

Due to their very nature, any failure of this equipment requires immediate notification to Public Works staff so investigation and repairs can take place

The infrastructure described above is identified on the City's 'critical infrastructure' list.
Failure to properly operate / maintain these stations exposes the City to significant liability and environmental risk. Pump failures, for example, could result in wastewater discharge into the environment and/or back-ups inside residential/commercial/industrial buildings. Booster Station failures would result in low water pressure for an affected area and the diminished water pressure would not meet the minimum water pressure requirements as required by the MOE or VFRS for fire suppression. Failures at the methane flare station could result in explosive gases travelling underground into nearby buildings/businesses.

Based on the criticality of the above infrastructure, it is imperative that the City be knowledgeable when significant issues or failures occur at these locations, as the impact of a failure would be a threat to public health, safety or welfare.

The computerized notification system in place at the time was operated by a third party, and had started to fail

After an electrical storm on June 30, 2014, the current third-party operated Supervisory Control and Date Acquisition (SCADA) system failed, and alarms were not being sent to staff when failures of the infrastructure took place. Despite the service provider changing out components in the monitoring system, the alarming ability was not reliable and failed to meet its intended purpose.

As an emergency remedy, Wastewater staff physically visited each pumping station on a 3 hour basis, 24 hours a day, 7 days per week. These inspections started in July and ended in October. During these inspections, they have found a number of high sewage levels in the wet wells due to blockages and pump failures, yet no alarms we received by the City due to the failure of the third party monitoring system.

During the early days of the system failure, a number of potential solutions were reviewed with in-house staff, but were determined to be not acceptable either due to the time involved in setting up a complete new system, or the significant capital costs.

As per the City's Purchasing Policy, staff took steps to find a solution as soon as possible, and a consulting firm was retained to provide expertise as to how to best remedy the problem, at the lowest cost

The City's Purchasing Policy defines emergency as follows:

"emergency" means an event or circumstance where the immediate purchase of goods, services or construction is necessary to prevent or alleviate serious delay, a threat to public health, safety or welfare, the disruption of essential services or serious damage to public or private property or any other expenditure that is necessary to respond to any such event and may include, but is not limited to, an emergency declared under the Emergency Management and Civil Protection Act."

In accordance with the above, Eramosa Engineering Inc. (Eramosa), was immediately retained to review the system and advise as to how the City could restore its capability to be notified when pump or generator failures occurred at these critical locations, yet keep the overall cost as low as possible. Eramosa is one of the service providers used by the Region of York, and other large municipalities, to maintain their SCADA systems, and they have extensive knowledge in this field.

A City-owned alarm dialer system was installed at all of the critical infrastructure locations, allowing the City's on-call staff to receive notification of critical component failures

The solution implemented is commonly known as an alarm dialer system, which sends out specific alarms via telephone to a designated telephone number(s). The system is configured to send a specific message about generator failures, pump failures, etc. so that on-call staff can respond immediately.

The alarm dialer system will continue to be in use, even if the City moves ahead with the installation of its own SCADA system sometime in the future.

Relationship to Vaughan Vision 2020/Strategic Plan

The emergency purchase of goods and services meets the following Vaughan Vision 2020 Goals and Themes:

Goal:	Service Excellence:
Theme:	Promote Community Health, Safety & Wellness
Goal:	Organizational Excellence
Theme:	Manage Corporate Assets

Regional Implications

N/A

Conclusion

As part of the City's Purchasing Policy, emergency purchases are permitted, provided a report is presented to Council within 60 days. Given the nature of the potential liability to the City if the critical infrastructure should fail and staff were not notified, an emergency purchase of goods and services was made. The emergency purchase of goods and services took place during the summer hiatus when there were no Council meetings, and there was a further hiatus period due to the municipal elections. Accordingly, this report is being provided to Council now.

Attachments

N/A

Report prepared by:

Caroline Kirkpatrick
Acting Manager of Environmental & Technical Services

Brian T. Anthony
Director of Public Works

COMMITTEE OF THE WHOLE – DECEMBER 2, 2014

EMERGENCY PURCHASE – ALARM SYSTEM FOR SEWAGE PUMPING STATIONS AND WATER BOOSTER STATIONS

Recommendation

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Report prepared by:

Caroline Kirkpatrick
Acting Manager of Environmental & Technical Services

Brian T. Anthony
Director of Public Works

Respectfully submitted,

Paul Jankowski
Commissioner of Public Works

Brian T. Anthony, CRS-S, C. Tech
Director of Public Works