# CITY OF VAUGHAN

## EXTRACT FROM COUNCIL MEETING MINUTES OF APRIL 11, 2018

Item 10, Report No. 4, of the Finance, Administration and Audit Committee, which was adopted without amendment by the Council of the City of Vaughan on April 11, 2018.

## 10 MAPLEWOOD BOOSTER PUMPING STATION UPGRADE WORKS

**The Finance, Administration and Audit Committee recommends approval of the recommendation contained in the following report of the Deputy City Manager, Public Works, dated April 3, 2018:**

## Purpose

To seek Council's approval to create a new capital project for the Maplewood Booster Pumping Station upgrade works to improve service level delivery in the Pressure District 9 (PD9) servicing area (boundary of Keele Street, Dufferin Avenue, Kirby Road and Teston Road).

## Recommendations

1. That Council approve a new capital project having a budget of $1.3 million, funded by the Water Reserve (70%) and the City-Wide Development Charges (30%) for the implementation of upgrade works to the Maplewood Booster Pumping Station.

2. That inclusion of this matter on a Council agenda with respect to amending the 2018 capital budget be endorsed as meeting the requirements for sufficient notice pursuant to Section 2(1) (c) of By-Law 394-2002 as amended.

## Report Highlights

- Staff are experiencing major operational issues with the existing pumping station
- In 2017, a condition assessment was completed that recommended immediate need for upgrades to the Maplewood Booster Pumping Station
- Proceeding with the station improvement now will address operational issues and improve service delivery within the current PD9 service area

## Background

The Maplewood Booster Pumping Station was constructed in 1998 and is located at the south-east corner of Keele Street and Kirby Road. This station is the only source of water supply for PD9 which contains approximately 1300 residential units; an area which has the boundaries of Keele Street, Dufferin Avenue, Kirby Road and Teston Road.

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Over the past two years, staff have received approximately 65 complaints of low water pressure in PD9. In response to this, City staff have had to utilize fire flow pumps at the booster station to increase pressure for properties at higher elevations. This scenario is not a recommended operational practice as the fire flow pumps should only be utilized in the event of an emergency. Vaughan Fire and Rescue Services are aware of the pressure issues in PD9 and have a plan in place in case of an emergency.

## Previous Reports/Authority

None

## Analysis and Options

### Upgrade works to the Maplewood Booster Pumping Station are recommended to improve service delivery

A condition assessment of the pumping station was completed over a seven (7) month period and concluded in May 2017. The report recommended upgrade works including mechanical equipment, such as new variable frequency drive (VFD) pumps, process piping, valves, flow meters, as well as electrical instrumentation and a larger backup generator. Subsequently, a detailed investigation in October 2017 was conducted to better understand the stations operating capacity to meet pressure objectives. This study supported the initial recommendations found in the earlier report, and added recommendations related to pump reconfiguration to meet the operational needs of the service area, planned growth and the requirement for a detailed design. This preliminary design work and subsequent cost estimates were completed recently.

### A new capital project is required to implement the upgrades identified in the design report

The upgrade works are complex and challenging as they are related to the existing pump capacity, generator, associated electrical and instrumentation works. The equipment is specialized and must meet Technical Standards Safety Authority (TSSA) certification and other regulatory requirements. During budget preparations for 2018, staff were confirming the design and cost estimates.

### Replacement of the existing pumps with a VFD pump will ensure energy efficiency, associated cost savings and enhance system operations

Operational costs are expected to decrease with the installation of variable frequency

drive (VFD) pumps since the pumps will operate according to demand (typically mornings and evenings are high demand). This optimization will reduce pump wear and tear and extend the life of the asset. Moreover, this type of pump uses less electricity, reduces water pressure surges, lowers instances of water hammer, will lead to an overall reduced risk of watermain breaks as well as reduce associated operation and maintenance costs.

**These upgrades will provide increased pressure for residential water needs and support future growth within the service area**

Currently, the residents in higher elevations within PD9 are experiencing intermittent low pressure during peak water demands. The upgrade works will maintain water pressure within the acceptable range to these higher elevations. In addition, the upgrade works will ensure water supply needs to support future growth in the servicing area including the proposed North Maple Regional Park development. It has been determined through a water demand analysis that 30% of the costs of upgrading the booster station are attributed to future growth.

## Financial Impact

A new capital project with a budget of $1.3 million is required to implement the necessary upgrade works at Maplewood Booster Pumping Station. Funding will be provided in the amounts of $390,000 from the City-Wide Development Charges fund and $910,000 from the Water Reserve.

## Broader Regional Impacts/Considerations

None identified

## Conclusion

To maintain an acceptable level of service related to water pressure to the residents and businesses as well as to support the future growth in the existing PD9 servicing area, it is necessary to complete the required upgrade works to the Maplewood Booster Pumping Station now. It is recommended that a new capital project of $1.3 million be allocated in the amounts of $390,000 from City Wide Development Charges fund and $910,000 from the Water Reserve.

This report has been prepared in consultation with Development Engineering, Finance and Infrastructure Planning and Corporate Asset Management.

# CITY OF VAUGHAN

## EXTRACT FROM COUNCIL MEETING MINUTES OF APRIL 11, 2018

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**For more information,** please contact: Jennifer Rose, Director, Environmental Services ext. 6116.

## Attachments

None

## Prepared by

Deepak Panjwani, Manager, Program and System Planning, ext. 6110

Item:

# FINANCE, ADMINISTRATION AND AUDIT COMMITTEE

**DATE:** Tuesday, April 03, 2018 **WARD(S):** 1

## TITLE: Maplewood Booster Pumping Station Upgrade Works

**FROM:**
Stephen Collins, Deputy City Manager, Public Works

**ACTION:** DECISION

## Purpose

To seek Council's approval to create a new capital project for the Maplewood Booster Pumping Station upgrade works to improve service level delivery in the Pressure District 9 (PD9) servicing area (boundary of Keele Street, Dufferin Avenue, Kirby Road and Teston Road).

## Recommendations

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## Background

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Over the past two years, staff have received approximately 65 complaints of low water pressure in PD9. In response to this, City staff have had to utilize fire flow pumps at the booster station to increase pressure for properties at higher elevations. This scenario is not a recommended operational practice as the fire flow pumps should only be utilized in the event of an emergency. Vaughan Fire and Rescue Services are aware of the pressure issues in PD9 and have a plan in place in case of an emergency.

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