CITY OF HAMILTON
PUBLIC WORKS DEPARTMENT
Hamilton Water Division

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	September 8, 2016
SUBJECT/REPORT NO:	Request for Additional Funding for the Old Dundas Road Sewage Pumping Station (HC005) Master Plan & Class EA Inline Storage Works (PW16071) (Ward 12)
WARD(S) AFFECTED:	Ward 12
PREPARED BY:	Sharon MacPherson-Németh Project Manager, Infrastructure Planning & Systems Design 905-546-2424, Extension 2087
SUBMITTED BY: **SIGNATURE:**	Mark Bainbridge Director of Water & Wastewater Planning & Capital

RECOMMENDATION

That the budget in Project ID 5161567565 (Old Dundas Road Sewage Pumping Station (HC005) Master Plan and Class EA Inline Storage Works) be increased from $1,430,000 to $2,230,000 and that this increase of $800,000 be funded by a transfer from Sanitary Sewer Capital Reserve #108005.

EXECUTIVE SUMMARY

In 2014, the Old Dundas Road Sewage Pumping Station (HC005) Wet Weather Relief Master Plan and Class Environmental Assessment (EA) study was completed to determine the preferred alternatives to alleviate basement flooding to homes in the lower reaches of the pumping station catchment area. One of the preferred alternatives recommended by this Master Plan and Class EA, approved for implementation at Public Works Committee on September 15, 2014 (PW14107), included replacing a portion of the existing 450 mm sanitary sewer on Old Dundas Road with a 1650 mm inline storage pipe. This larger “superpipe” will provide temporary storage of approximately 400 m^3 of inflow/infiltration thereby reducing the risk of basement flooding. Feedback from the Master Plan and Class EA established that 100% vehicular access to Millcreek Court, Ontario Street, and the Ancaster Mill must be maintained at all times during construction of this inline storage pipe. The 2016 Approved Rate Budget Project ID 5161567565 for this construction project on Old Dundas Road was $1,430,000.

As part of the detailed design phase, a Geotechnical Investigation was completed on Old Dundas Road in June 2015. Drilling results established refusal at 7 to 8 feet (dolomite) which presented several construction challenges for installing this large inline storage pipe along Old Dundas Road. If the 1650 mm inline storage pipe is installed in

an open-cut trench, the road would have to be closed to two-way traffic for approximately six to seven months. This would impact local traffic and cut off access to Millcreek Court, Ontario Street, and the Ancaster Mill. Microtunneling is a viable construction alternative but is twice as costly as open-cut construction and would still require the road to be closed to two-way traffic for approximately four weeks to install the entry/exit shaft and associated equipment.

In order to provide a more cost effective solution that would allow for vehicular access to Millcreek Court, Ontario Street, and the Ancaster Mill, it was determined that a 2100 mm inline storage pipe would instead be constructed on Montgomery Drive. Additional budget is required to complete this project due to the following unforeseen additional scope as a result of the new location:

- Replacement of the existing watermain, storm and sanitary sewers;
- Complete road reconstruction including subbase, re-pavement of Montgomery Drive and installation of new curbs;
- Replacement and upgrading of street lighting to current standards;
- Sheet piling to protect existing utilities; and
- The existing native material above the bedrock is not suitable as backfill requiring additional granular materials

The Ministry of Environment and Climate Change (MOECC) has agreed to fast track the Environmental Compliance Approval Permit. As a cost saving measure, the tender is scheduled to go out in the fall of 2016. Construction will commence in the spring of 2017.

Staff is recommending:

That the budget in Project ID 5161567565 (Old Dundas Road Sewage Pumping Station (HC005) Master Plan and Class EA Inline Storage Works) be increased from $1,430,000 to $2,230,000 and that this increase of $800,000 be funded by a transfer from the Sanitary Sewer Capital Reserve #108005. Staff has verified that there are sufficient funds available in the Sanitary Sewer Capital Reserve #108005.

Alternatives for Consideration – See Page 5

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial:

The recommendation in this report requires the allocation of $800,000 from the Sanitary Sewer Capital Reserve #108005. The current uncommitted balance in the Sanitary Sewer Capital Reserve #108005 is approximately $79.7 Million, before taking into account the $800,000 in funding being recommended in this report PW16071.

Staffing:

This recommendation is not expected to change staffing complement.

Legal:

This recommendation is not expected to have any legal implications.

HISTORICAL BACKGROUND

The Old Dundas Road Sewage Pumping Station (HC005) was designed and constructed in the 1970's and services an area of approximately 180 hectares.

Historically, an Environmental Impact Statement study was completed in 1994 on the Old Dundas Road Sewage Pumping Station (HC005). The 1994 study investigated the option of providing an Emergency Overflow in order to reduce the risk of flooding of adjacent homes in the area during substantial rainfall or snowmelt events. The study was never formally approved by Council of-the-day due to lack of agency support (Ministry of Environment, Ministry of Natural Resources, Niagara Escarpment Commission and Hamilton Conservation Authority) as it was the only alternative considered. In 1997, Council decided to no longer pursue this option and therefore authorized the release and abandonment of an overflow pipe easement which had been acquired and registered in 1992.

Field investigations including sanitary manhole inspections, smoke testing, flow monitoring, and computer modelling and analysis were completed in 2013 to determine the source of extraneous rainwater that has historically overwhelmed the system. These investigations were undertaken to ascertain the causes and extent of flooding in the study area and it was determined that stormwater and groundwater are infiltrating significantly into the sanitary sewer system. As a result of excess infiltration/inflow, the sanitary sewer system and the Old Dundas Road Sewage Pumping Station (HC005) are unable to keep up with the entire flow volume during significant precipitation events. As a result, basements in the area have flooded several times in recent years. In 2014, the City replaced two storm manhole covers on sanitary manholes to eliminate surface runoff getting into the system. In 2015, the City lined three manholes in the catchment area to prevent infiltration. Seven backwater valves, to date, were installed by home-owners utilizing the City's 3P program have proven effective as an acute mitigation measure.

In 2014, a Master Plan and Class EA study was completed to determine the preferred alternative to alleviate basement flooding to homes in the lower reaches of the pumping station catchment area. Root-causes of the excessive wet weather flow were identified and include Inflow/Infiltration (I/I) flows from publicly owned infrastructure and from illicit connections resulting in excessive I/I flows from private properties. Preferred flooding solutions include Private Property works, Public Property upgrade works, and building new infrastructure designed to mitigate flooding. The preferred alternative for this station and the area that drains to it consists of a number of activities as follows:

- Private Property Works

- Public Property Works
- Inline Storage
- Emergency Overflow

Collectively, implementation of upgrades to both Private and Public Properties, in addition to Inline Storage will provide a 100 year level (approximately 79 mm) of flood protection against basement flooding for the study area.

In the fall of 2014, Council approved Public Work Committee Report PW14107 to proceed with implementation of the above preferred alternatives within the Old Dundas Road Sewage Pumping Station (HC005) Wet Weather Relief Master Plan and Class Environmental Assessment.

The recommendations contained in this report support the Mission Statement of the Public Works Business Plan "Innovate Now" - "Provide safe, strategic and environmentally conscious services that bring our communities to life".

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

No policies will be affected if council approves the recommendation.

RELEVANT CONSULTATION

The Public Works Department, Engineering Services Division was consulted in the development of this report regarding the required budget to construct a 2100 mm inline storage pipe on Montgomery Road.

The Corporate Services Department, Financial Planning & Policy Division was consulted in the development of this report. Staff verified that there are sufficient funds available in the Sanitary Sewer Capital Reserve #108005.

The Ward Councillor was engaged on October 14, 2014 and March 4, 2016 and indicates support for the construction of the 2100 mm inline storage pipe.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Hamilton Water staff worked in conjunction with the Design and Construction Sections of the Engineering Services Division to determine the most cost effective inline storage design that would allow Old Dundas Road to remain open to local traffic during construction. It was determined that constructing a 2100 mm inline storage pipe on Montgomery Drive would produce the least impact to local traffic, Millcreek Court, Ontario Street, and the Ancaster Mill while improving the level of service for wastewater services.

ALTERNATIVES FOR CONSIDERATION

The recommended inline storage pipe on Montgomery Drive represents an optimum sewer infrastructure arrangement at the commensurate and aforementioned funding levels. A status quo approach leaves homes in the lower reaches of the pumping

station catchment area vulnerable to flooding at a risk level commensurate with the severity of future precipitation and snowmelt events.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Community Engagement & Participation

Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

Economic Prosperity and Growth

Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

Healthy and Safe Communities

Hamilton is a safe and supportive city where people are active, healthy, and have a high quality of life.

Clean and Green

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

Built Environment and Infrastructure

Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Culture and Diversity

Hamilton is a thriving, vibrant place for arts, culture, and heritage where diversity and inclusivity are embraced and celebrated.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

None