SUBJECT: Barton Street Trunk Sewer Rehabilitation (PW07122) - (Ward 2)

RECOMMENDATION:
(a) That the General Manager of Public Works be authorized and directed to proceed with the tender and award of Contract No. C11-98-07 to Capital Commercial Pipe Service in the amount of $2,067,750;
(b) That the appropriation in Capital Budget Project ID 5160760710 (Barton Street Trunk Sewer Rehabilitation) be increased by $568,000 from $1,500,000 to $2,068,000 and that the increased funding be financed by a transfer of $568,000 from Wastewater Capital Reserves (Account 108005).

Scott Stewart, C.E.T.
General Manager
Public Works

EXECUTIVE SUMMARY:
It is recommended that the allocation for Barton Street Trunk Sewer Rehabilitation from James to Ferguson, originally constructed in the late 1800’s, be increased by $568,000 in order to proceed with this work in 2007 as planned. Sufficient funds are available within the Wastewater Capital Reserves to offset this increase.

BACKGROUND:
The information provided in this report affects Ward 2 with City wide implications.
In 2005 staff initiated a CCTV (Closed Circuit Television) inspection of the combined trunk sewer on Barton Street between James Street and Ferguson Street as a part of the ongoing critical sewer main management program. Upon review of the inspection
staff identified several severely deteriorated sections of sewer, but also found the inspection to be incomplete due to the significant deterioration of the pipe. As a result of these issues two projects were initiated (1) Emergency repairs through the Water Distribution and Wastewater Collection section of approximately five metres of pipe in two sections of sewer, completed in 2005; (2) The issuance of an engineering roster assignment to carry out a detailed condition inspection, including recommendations on the long term management of this sewer initiated in early 2006 and completed in late 2006. In addition to the initiation of these projects staff initiated a capital project in the 2007 Rates budget in the amount of $1.5 million for the anticipated rehabilitation of the Barton Street sewer. A tender was issued in July of 2007 and the lowest bid price was $2,067,750 from Capital Commercial Pipe Services Limited. In order to proceed with this project as planned in 2007 and accommodate future demands, an additional $568,000 is required.

**ANALYSIS/RATIONALE:**

Since the most recent detailed inspection of the Barton Street Trunk Sewer completed in 2007, it has been observed that the original scope of work must be widened to include various other defects found in the areas of the pipe which were not inspected through the original 2005 inspection due to the severity of the damage in the pipe at that time. The specific areas of additional works include:

1) Due to the nature of the damage and the pipe material being brick, the complete 2007 detailed inspection (of the repairs made in 2005) revealed that the emergency repairs can only be considered as a short term stabilization of the pipe. These repairs were completed in egg-shaped pipes using undersized, circular lengths of pipe which adversely affect the flow characteristics of the Barton Street trunk sewer, especially in peak flow times and storm events. As such these sections require proper repair to be completed at the time of rehabilitation.

2) In a manhole structure located at the intersection of Barton and John Streets exists diversion structures requiring adjustment for the facilitation of rehabilitation as well as maintaining efficient flow characteristics in the sewer. This structure was not observed in the original 2005 inspection due to the severe damage in the pipe at the time and an inaccessible/buried manhole. This diversion structure was clearly observed and analyzed in the latest inspection.

3) Early in 2007, during the construction works for the Ferguson Street Bridge, an attempt was made to install a new manhole north of Barton Street. Due to the nature of the brick sewer the attempt failed and a downstream portion of the Barton Street Trunk Sewer was damaged. This section of sewer includes approximately thirty metres in need of rehabilitation due to the damage incurred at that time. Since this area is directly adjacent to the proposed work for the Barton Street Trunk sewer the most efficient and effective option for rehabilitation would be to combine these projects as one. The cost to repair this section of pipe, as bid by Capital Commercial Pipe Services is $57,800.

In addition to the change of scope a detailed design has been completed along with an estimate which is beyond the estimate established during the preliminary engineering.
As a result of the scope expansion, due to the unforeseen requirements identified in the detailed engineering report and the new estimate based on the detailed design of the sewer rehabilitation, additional funding is required in the amount of $568,000.

**ALTERNATIVES FOR CONSIDERATION:**

As an alternative, should Council defer the Barton Street Trunk Sewer Rehabilitation project to the 2008 Capital Program, approximately $568,000 of proposed works would be subject to future approval through the Capital Budget process. However, this approach is not recommended considering the opportunity to minimize impact to the public, reduce public risk and liability to the City. In addition, due to the age and nature of deterioration, this sewer has a high probability of further collapse. Emergency repairs completed by water/wastewater operations staff are costly, both financially and socially. The emergency repair (short-term stabilization) of five metres of pipe, completed by water/wastewater operations in 2005 cost $47,516.02. This project would also require re-tendering which would further delay completion of work.

**FINANCIAL/STAFFING/LEGAL IMPLICATIONS:**

Financial - If approval is not granted at this time the project would be deferred to the upcoming capital budget process, re-tendering and ultimately a delay in completing the required work.

Staffing - N/A

Legal - N/A

**POLICIES AFFECTING PROPOSAL:**

This project coincides with the Public Works Strategic Plan with respect to ‘Community’ in that using Glass Reinforced Plastic (GRP) lining allows the City to maintain a high level of service in the collection of wastewater by adapting this technology to specific conditions within the community directly affected by the proposed works. Since GRP lining technology requires minimal digging, this work creates minimal disruption to sewer use and traffic and transit movement, and in-turn reduces the economic loss on businesses and residents in this area.

This project is also in alignment with the Public Works Strategic Plan by utilizing the most efficient and economical method to rehabilitate the Barton Street Trunk Sewer based on sustainable life-cycle funding. By combining all components of this project, as stated above, the City is providing responsible funding expenditure in order to significantly extend the life of this asset as well as the road surface which would otherwise require reconstruction.

**RELEVANT CONSULTATION:**

Corporate Services Department - Budgets and Finance

**CITY STRATEGIC COMMITMENT:**

By evaluating the “Triple Bottom Line”, (community, environment, economic implications) we can make choices that create value across all three bottom lines, moving us closer to our vision for a sustainable community, and Provincial interests.
Community Well-Being is enhanced. ☑ Yes □ No
Public services and programs are delivered in an equitable manner, coordinated, efficient, effective and easily accessible to all citizens.

Environmental Well-Being is enhanced. ☑ Yes □ No
A sustainable wastewater network reduces risk of untreated wastewater exposure to the natural environment and human contact. Human and environmental health and safety are protected.

Economic Well-Being is enhanced. ☑ Yes □ No
Hamilton's high-quality environmental amenities are maintained and enhanced.

Does the option you are recommending create value across all three bottom lines? ☑ Yes □ No

Do the options you are recommending make Hamilton a City of choice for high performance public servants? □ Yes ☑ No