

CITY OF HAMILTON

PUBLIC WORKS DEPARTMENT
Environment & Sustainable Infrastructure Division

TO: Chair and Members Public Works Committee	WARD(S) AFFECTED: CITY WIDE
COMMITTEE DATE: November 7, 2011	
SUBJECT/REPORT NO: Queen Elizabeth Way Beach Boulevard Flood Protection (PW06118a) - (City Wide)	
SUBMITTED BY: Gerry Davis, CMA General Manager Public Works Department	PREPARED BY: Gary Moore 905-546-2424, Extension 2382
SIGNATURE:	

RECOMMENDATION

- (a) That the budget for QEW Beach Blvd Flood Protection (Capital Project ID 5180662640) be increased by \$6,570,000 from \$5,600,000 to \$12,170,000 and that approximately 43% of this increase (\$2,825,000) which represents the City's share, be funded from the surplus available from favourable tenders within the 2011 Storm Relief Program (Capital Budget Project ID 5181172290) and that the balance be funded by the Ministry of Transportation per the attached agreement (see Appendix "A");
- (b) That the PO #32847 to McCormick Rankin for the engineering and design of the project be increase by \$250,000;
- (c) That the appropriation adjustments as outlined in Appendix "B" to report PW06118a be approved;
- (d) That the General Manager of Public Works be authorized and directed to proceed with the tender and award contract no. PW-11- 54(s) to Alberici Constructors Ltd. in the amount of \$8,649,526.73 as identified on Appendix "B".

EXECUTIVE SUMMARY

Flooding of streets abutting Beach Boulevard along the Queen Elizabeth Way (QEW) has been occurring and worsening for several years. A gravity sewer parallel to the QEW, a lift station and forcemain under the QEW to the Eastport ditch is the adopted

**SUBJECT: Queen Elizabeth Way Beach Boulevard Flood Protection
(PW06118a) - (City Wide) - Page 2 of 4**

solution. A cost sharing agreement of 57% MTO and 43% City has been signed as per previous Council Direction (see Appendix "A"). The forcemain portion is complete. The total project cost, including engineering and construction supervision, has increased and require Council approval for additional funding.

Alternatives for Consideration - See Page 3

FINANCIAL / STAFFING / LEGAL IMPLICATIONS

Financial: The total increase required is \$6,570,000. The City's share of this increase is approximately 43% or \$2,825,000 which can be funded by a transfer of surplus funds from the 2011 Storm Relief Program (5181172290). The balance (\$3,745,000) is to be funded by the Ministry of Transportation per the attached agreement (Appendix "A").

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

In September 2006, Council authorized and directed the General Manager of Public Works to enter into a cost sharing agreement with the Ministry of Transportation (MTO) for the design, tender and construction of a Flooding Protection Project for residents of Dunraven, Locarno, Renfrew, North Park, Rembe, Windermere, Knapmans, Wickham, Grafton, Comet, Granville, Clare, Lagoon and Arden (see Appendix "A"). Council also authorized and directed the General Manager of Public Works to carry out the design, tender and contract award of the recommended works.

The agreement stipulated that the City's share of the works on a percentage basis was approximately 43% and based on preliminary estimates, Council capped the City's expenditure to \$2.4 million. The total project cost was estimated to be \$5.377 million.

The outlet portion of the works under and across the QEW has been completed and design of the gravity sewer and lift station is finalized. The final phases of the project have been tendered and the lowest bid brings the project cost above that authorized by Council. The increase is attributed to technical challenges of constructing in the Beach Strip below the water table and general construction inflation since initial estimates more than 5 years ago. The final project estimate is \$12.17 million. This is an increase of \$6.570 million over the original estimate. A portion of the increase was incurred in the initial QEW crossing contract. The remainder is to be incurred for the construction of the wet well and lift station on Grafton.

Designs have been reviewed with regard to the best value and a number of revisions have been implemented to reduce costs where appropriate, while maintaining the integrity of the projects purpose of flood protection. As a result of the extensive design review and revisions an increase in fees are now necessary as well. The increase required is \$250,000. However, this is less than 2% of the total project cost. Additional engineering works required were for the QEW crossing as well as the pump station

**SUBJECT: Queen Elizabeth Way Beach Boulevard Flood Protection
(PW06118a) - (City Wide) - Page 3 of 4**

alternative review. The additional engineering costs allowed for an alternative solution and risk review which resulted in an estimated cost savings of over \$2.5 million in initial constructions costs. Examples of this were with regard to the reduction of above ground structure and long term maintenance redundancies.

POLICY IMPLICATIONS

This report aligns with the Public Works Business Plan “Innovate Now” by being responsible and accountable only for items within our control.

RELEVANT CONSULTATION

Consultation was held with Asset Management and Water/Wastewater in the Public Works Department and the Ministry of Transportation (MTO) – Central Region in regard to this report and is in agreement with the recommendations.

ANALYSIS / RATIONALE FOR RECOMMENDATION

The original proposed project was estimated to cost \$5.6 million including all design and engineering related costs, with the City’s capital share being approximately \$2.4 million.

Project costs to date are \$2.87 million and additional expenditure of \$9.2 million are forecast. This would bring the final total to \$12.17 million and the City’s share to \$5.233 million. The project is only partially complete and crossing under the QEW provides no use without the remaining works.

The MTO have approved the increased costs and have agreed to fund the increased cost proportionate to their share of the project as per the agreement.

ALTERNATIVES FOR CONSIDERATION

1. Do nothing further, abandon the existing works and continue to pump individual streets following rain events.
2. Direct staff to renegotiate with the MTO to absorb all increases in cost since the original agreement. This may result in the “do nothing” alternative if the MTO does not agree or further increase inflationary costs as delays continue.

CORPORATE STRATEGIC PLAN

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

Growing Our Economy

- ◆ Property Values will benefit by the flood protection provided

Environmental Stewardship

- ◆ The potential for standing water is reduced for the design storm period

Healthy Community

- ◆ Providing a serviceable storm sewer system that provides flooding protection for up to the 25 year return storm

APPENDICES / SCHEDULES

Appendix "A": Queen Elizabeth Way Beach Boulevard Flood Protection (PW06118)
(Ward 5)

Appendix "B": Schedule A - 2011 Capital Budget Appropriation Adjustments

AFFECTS
WARD 5

CITY OF HAMILTON

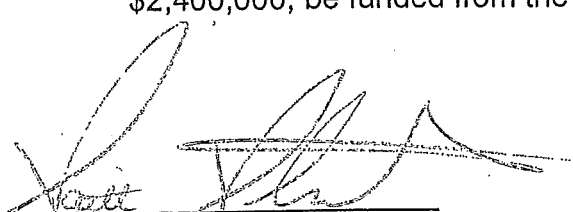
PUBLIC WORKS DEPARTMENT
Capital Planning & Implementation Division

Report to: Chair and Members Public Works, Infrastructure & Environment Committee	Submitted by: Scott Stewart, C.E.T. General Manager Public Works Department
Date: August 24, 2006	Prepared by: Gary Moore Extension 2382

**SUBJECT: Queen Elizabeth Way Beach Boulevard Flood Protection
(PW06118) - (Ward 5)**

RECOMMENDATION:

- (a) That the General Manager of Public Works be Authorized and directed to enter into a Cost Sharing Agreement with the Ministry of Transportation (MTO), in a form satisfactory to the City Solicitor, for the design, tender and construction of a Flooding Protection Gravity Sewer, Stormwater Lift Station and Forcemain for the residents on Dunraven, Locarno, Renfrew, North Park, Rembe, Windemiere, Knapmans, Wickham, Grafton, Comet, Granville, Clare, Lagoon and Arden.
- (b) That the General Manager of Public works be authorized and directed to carry out the design, tender and contract award of the recommended flood protection works as set out in the cost sharing agreement with MTO in recommendation (a) of Report PW06118.
- (c) That the City's share in the cost of the project, in an amount not to exceed \$2,400,000, be funded from the Storm Sewer Capital Reserve 108010.



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

EXECUTIVE SUMMARY:

Flooding of streets along Beach Boulevard along the Queen Elizabeth Way (QEW) has been occurring and worsening for several years. Several alternatives have been reviewed and a preferred alternative has been identified. A gravity sewer parallel to the

**SUBJECT: Queen Elizabeth Way Beach Boulevard Flood Protection
(PW06118) - (Ward 5) - Page 2 of 5**

lift station and forcemain under the QEW to the Eastport ditch is the proposed solution. A cost sharing agreement of 57% MTO and 43% City is proposed. In order to facilitate and expedite the completion of the work, it is proposed that City Of Hamilton, Public Works staff direct the detailed design, tender, award and construction of the works. The total project cost, including engineering and construction supervision, is approximately \$5.6M with the City's capital share being approximately \$2.4M.

BACKGROUND:

Flooding of streets along Beach Boulevard that end and abut along the QEW has been occurring and worsening for several years. The former City was investigating causes and potential remedies prior to amalgamation. MTO became involved and took the lead in mid-2004 as it became apparent that most of the problems were either located beneath the QEW or being compounded by previous works. Following extensive investigations and research it became apparent that repairing existing drainage infrastructure was not feasible and other new drainage alternatives were explored. Several alternatives were reviewed and a preferred alternative has been identified. The preferred alternative includes a gravity sewer along the QEW ends of Dunraven, Locarno, Renfrew, North Park, Rembe, Windemere, Knapmans, Wickham, Grafton, Comet, Granville, Clare, Lagoon and Arden; a stormwater lift station at the end of Grafton/Comet and forcemain under the QEW to the Eastport ditch outlet as the proposed solution.

ANALYSIS/RATIONALE:

The streets involved are "Dunraven, Locarno, Renfrew, North Park, Rembe, Windemere, Knapmans, Wickham, Grafton, Comet, Granville, Clare, Lagoon and Arden". These streets run perpendicular to Beach Boulevard and end abutting the QEW road corridor along the backside of a noise berm. The low ends of the streets abut the MTO lands and originally drained through various catchbasins, ditch inlets, ditches and corrugated pipe sewers under the QEW to the Eastport Ditch. Over time these outlets have become unserviceable due to a number of reasons, blockages, higher lake levels and general deterioration, etc.

MTO became involved when they discovered the nature, condition and number of sewers that crossed under the QEW and potential cost impacts to repair and replace the sewers and the associated operational impacts.

Several alternatives were studied. Due to the low elevation of the streets with respect to the lake levels and available outlet routes; the only feasible option requires a gravity sewer, a stormwater lift station and forcemain to an outlet. Outletting to the lake directly was deemed undesirable from a cost, approvals and potential impacts regard. Using the existing ditch outlet along Eastport Drive is recommended as it requires no further external agency approvals and maintains the status quo with regard to flow routing.

This proposed alternative solution is estimated to cost approximately \$5.6 million including all design and engineering related costs, with the City's capital share being approximately \$2.4M.

A cost sharing formula which would see the MTO fund 57% of the capital costs will be developed between staff of Public Works and MTO. Upon completion of the project,

**SUBJECT: Queen Elizabeth Way Beach Boulevard Flood Protection
(PW06118) - (Ward 5) - Page 3 of 5**

(approximately 2008/2009), there will be an ongoing yearly maintenance and operational requirement for the stormwater lift station estimated at \$15,000 to \$25,000 per year. Given all circumstances and factors this cost sharing arrangement appears to be the best arrangement that can be achieved.

In order to facilitate and expedite the completion of the work it is proposed that the City's Public Works staff direct the detailed design, tender, award and construction of the works. This will reduce the time to complete the works by fifteen to eighteen months. However, this will require the City to upfront all costs with recovery of MTO's share on an invoice basis.

ALTERNATIVES FOR CONSIDERATION:

There are a number of alternatives:

- 1) Do nothing in capital improvements and continue to pump individual streets following rain events. This is not recommended as it does nothing to prevent damage to private property and is not cost effective in resource allocation or from a manpower or financial view.
- 2) Direct staff to continue to negotiate with MTO with the idea of achieving (a better deal) a lower City cost allocation. This may end up stalling negotiations and the ultimate loss in MTO's willingness to freely participate. It may lead to potential legal action and significant delay in the implementation of any improvements.

FINANCIAL/STAFFING/LEGAL IMPLICATIONS:

The total cost of the project in the amount of approximately \$5,600,000 will be funded by the City, Capital Budget Project ID 5180662640 (QEW Beach Blvd Flood Protection), with approximately 57% of the total capital cost being recovered from MTO. The City's share of the capital cost of the project will be approximately \$2,400,000 and funded from the storm Sewer Capital Reserve 108010.

Upon completion there would be an operational cost component for power/fuel and routine general maintenance to the Stormwater lift station of approximately \$25,000 per year.

POLICIES AFFECTING PROPOSAL:

N/A

RELEVANT CONSULTATION:

Finance & Budgets, Corporate Services Department

Water & Wastewater, Public Works Department

Strategic and Environmental Planning Section, Capital Planning & Implementation Division, Public Works Department

**SUBJECT: Queen Elizabeth Way Beach Boulevard Flood Protection
(PW06118) - (Ward 5) - Page 4 of 5**

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

The Community well being is enhanced by providing a serviceable storm sewer system that provides flooding protection for up to the 25 year return storm.

Environmental Well-Being is enhanced. Yes No

The environmental well being is enhanced as the potential for standing water is reduced for the design storm period.

Economic Well-Being is enhanced. Yes No

The economic well being is enhanced as property values will benefit by the flood protection provided.

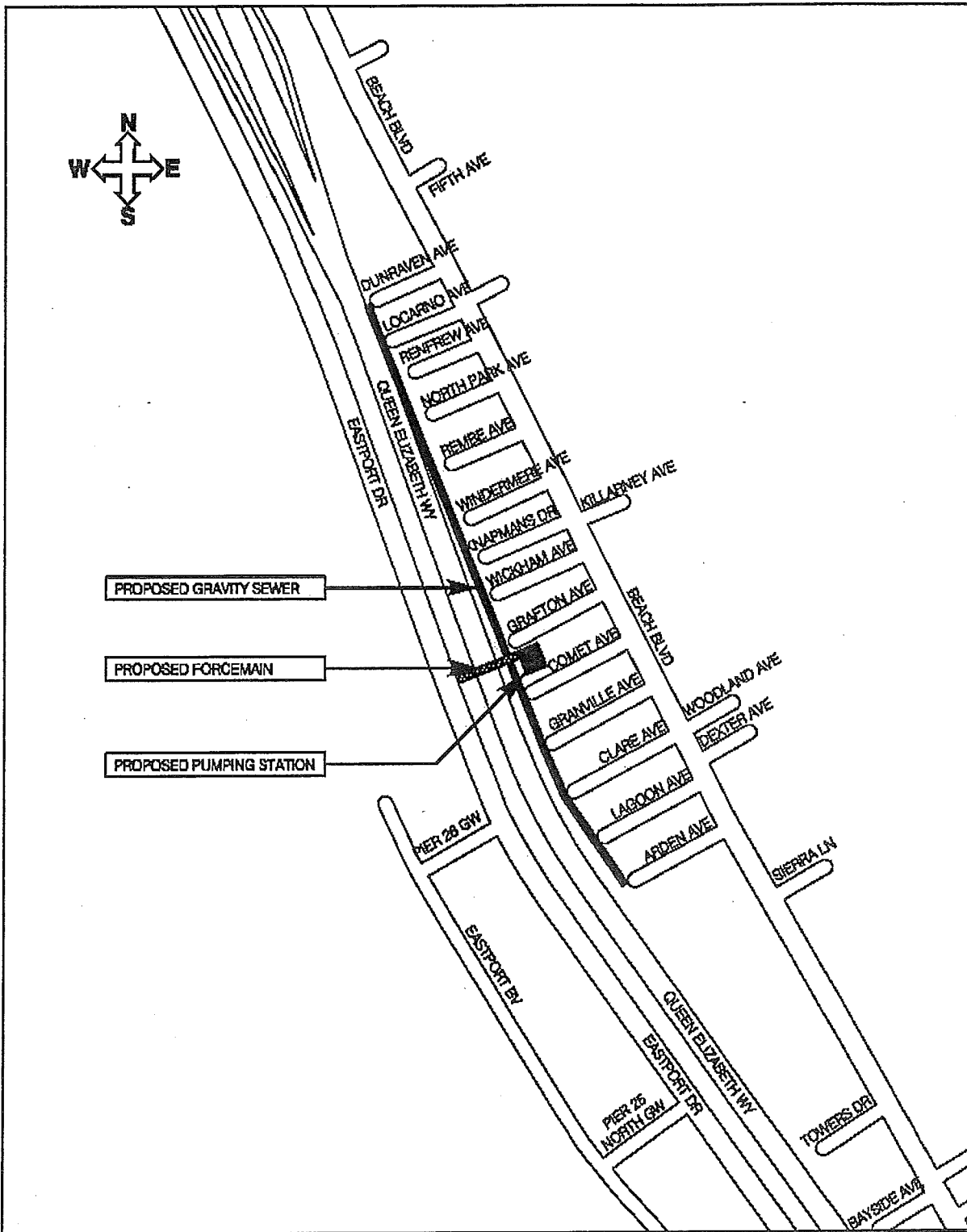
Does the option you are recommending create value across all three bottom lines?


Yes No

Do the options you are recommending make Hamilton a City of choice for high performance public servants?

Yes No

**SUBJECT: Queen Elizabeth Way Beach Boulevard Flood Protection
(PW06118) - (Ward 5) - Page 5 of 5**



 Proposed QEW Beach Strip Flood Protection	
City of Hamilton Ward 5 QEW Beach Strip Flood Protection	CITY OF HAMILTON Public Works Department General Manager, Scott Stewart DATE: AUGUST 10, 2008

PUBLIC WORKS
Schedule A - 2011 Capital Budget Appropriation Adjustments

APPENDIX "B"
REPORT PW06118a

Project Number	Project Description	GROSS COST			REVENUE			NET FINANCING REQUIRED			REASON FOR ADJUSTMENT	
		Budget	Increase/ (Decrease)	Revised	Budget	%	Increase/ (Decrease)	Revised	Budget	Increase/ (Decrease)		Revised
5180662640	QEW Beach Blvd Flood Protection	5,600,000	6,570,000	12,170,000	0		0	0	5,600,000	6,570,000	12,170,000	Additional funds required to award contract.
5181172290	2011 Storm Relief Program	3,480,000	-425,000	3,055,000	0		0	0	3,480,000	-425,000	3,055,000	Surplus Available due to favourable tenders.
5181172295	2011 SERG - Storm Relief Program	8,050,000	-2,400,000	5,650,000	0		0	0	8,050,000	-2,400,000	5,650,000	Surplus Available due to favourable tenders.
TOTAL INCREASE/(DECREASE)		17,130,000*	3,745,000	20,875,000	0		0	0	17,130,000	3,745,000	20,875,000	

* The difference, \$3,745,000 represents the Ministry of Transportation's share as per the attached agreement.