



Report to: General Committee

Date Report: June 16, 2014

SUBJECT:	Award of Tender 072-T-14 West Thornhill – Phase 1A Storm Sewer and Watermain Replacement
PREPARED BY:	Prathapan Kumar, Senior Manager, ROW Assets, Ext. 2989 Rob Muir, Manager, Stormwater, Ext. 2984 Tony Casale, Senior Construction Buyer, Ext. 3190

RECOMMENDATIONS:

- 1) THAT the report entitled “Award of Tender 072-T-14 West Thornhill – Phase 1A Storm Sewer and Watermain Replacement” be received;
- 2) AND THAT the contract for Tender 072-T-14 West Thornhill – Phase 1A Storm Sewer and Watermain Replacement be awarded to the sole Bidder, Lancorp Construction Co. Ltd., in the amount of \$10,479,269.09, inclusive of HST;
- 3) AND THAT a 10% contingency in the amount of \$1,047,926.91, inclusive of HST, be established to cover any additional construction costs and that authorization to approve expenditures of this contingency amount up to the specified limit be in accordance with the Expenditure Control Policy;
- 4) AND THAT purchase order PD 12134 issued to R.V. Anderson Associates Limited for engineering consulting services be increased by \$272,817.03 (from \$789,614.86 to \$1,062,431.89) inclusive of HST to cover the additional contract administration and construction inspection services, geotechnical inspection, material testing and environmental inspections;
- 5) AND THAT contingency purchase order PD 12135 issued to R.V. Anderson Associates Limited be increased by \$27,281.70 inclusive of HST, (from \$118,442.23 to \$145,723.93) to cover any additional contract administration and construction inspection services, geotechnical inspections, material testing and environmental inspections and that authorization to approve expenditures of this contingency amount up to the specified limit in accordance with the Expenditure Control Policy;
- 6) AND THAT the contract award be funded from “Thornhill Storm Sewer Upgrades” 058-6150-9330-005 in the amount of \$3,102,592.00 and “Flood Control Implementation – West Thornhill (Phase 2)” 058-6150-14271-005 in the amount of \$2,571,373.58;
- 7) AND THAT the revised cost estimate for the overall Flood Control Program from \$186M to \$234M (in 2014 dollars) be addressed through an increase of stormwater fee rates to \$47 per unit/year from \$36 per unit/year for residential and multi-residential properties and \$29/\$100,000 current value assessment (CVA)/year from \$21/\$100,000 CVA/year for non-residential properties;
- 8) AND THAT a new Stormwater Fee Reserve fund be established for the Flood Control Implementation Program;

- 9) AND THAT a 5-year moratorium be placed on any major servicing and utility installation along Doncrest Drive, Poinsetta Drive (between Doncrest Drive and Daffodil Avenue) and Daffodil Avenue;
- 10) AND THAT Staff be authorized and directed to do all things necessary to give effect to this resolution.

EXECUTIVE SUMMARY:

The purpose of this report is to obtain Council approval:

- (a) to award the contract for the West Thornhill – Phase 1A Storm Sewer and Watermain Replacement;
- (b) to award the contract administration and inspection services; and
- (c) to increase the stormwater fee rates to address the revised cost estimate for the overall Flood Control Program from \$186M to \$234M (in 2014 dollars) as outlined in the report.

The City-wide Flood Control Program is a 30 year program with an estimated cost of \$186M based on 2009 and 2010 Class Environmental Assessment (EA) cost estimates. The West Thornhill area (Phase 1 & 2) is proposed to be completed in the first 5 year period by 2018. To support the program, on November 26, 2013 Council approved stormwater fee rates (starting in 2015) of:

- \$36 per unit/year for residential and multi-residential properties
- \$21/\$100,000 CVA/year for non-residential properties.

Through detail design, the Phase 1 Bayview Glen Area was divided into 3 areas (Phase 1A, 1B, 1C). Phase 1A has proceeded to tender which includes Doncrest Drive, Poinsetta Drive (between Doncrest Drive and Daffodil Avenue) and Daffodil Avenue.

The Phase 1A construction tender package was sent to six prequalified contractors on April 24, 2014. While five contractors picked up the bid document, only one submitted a bid. The bid submitted is \$11,051,079.47 and staff was able to negotiate a cost reduction of \$571,810.38 inclusive of HST, a cost reduction of approximately 5.2% as compared to the original Bid to \$10,479,269.09. The available budget for construction is \$5,673,965.58 and based on the revised Bid price and contract administrative cost there is a shortfall in the amount of \$6,153,329.16 as summarized in the Financial Consideration Section.

The cost estimate of the 30 years Flood Control Program has been revised from \$186M to \$234M (2014 dollars). The updated cost estimate reflects Phase 1A tender-based unit prices applied to the remainder of West Thornhill project as well as new preliminary design quantities that are now available for West Thornhill Phases 1B, 1C and 2 works, and updated program administration costs.

A number of options to address the funding shortfall were reviewed:

- Option 1 and 2: Cancel the tender and re-tender in July 2014 or in Nov/Dec 2014
 - Option 3: Award the Contract and maintain the approved stormwater fee rates and extend the collection of fees from 30 to 41 years
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- Option 4: Award the Contract and increase the stormwater fees rates to address the Phase 1A tender shortfall and the revised cost estimate of the overall Flood Control Program. Stormwater fee rates would increase to \$47 per unit/year from \$36 per unit/year for residential and multi-residential properties and \$29/\$100,000 current value assessment (CVA)/year from \$21/\$100,000 CVA/year for non-residential properties

Option 4 is recommended for the following reasons:

- It is fiscally prudent to align the stormwater fee rates with the actual costs for West Thornhill Phase 1A implementation and the revised future program costs
- Delivery of the Flood Control Program as scheduled

PURPOSE:

The purpose of this report is to obtain Council approval:

- (a) to award the contract for the West Thornhill – Phase 1A Storm Sewer and Watermain Replacement;
- (b) to award the contract administration and inspection services; and
- (c) to increase the stormwater fee rates to address the revised cost estimate for the overall Flood Control Program from \$186M to \$234M (2014 dollars) as outlined in report.

BACKGROUND:

Stormwater flood remediation was approved in November 2013 for the West Thornhill area in accordance with the City's November 2010 Class EA Study. The first phase of the remediation includes storm sewer capacity upgrades in the Bayview Glen neighbourhood and the second phase includes the Grandview area. Phase 1 and 2 was proposed to be completed in a 5 year period by 2018 as outlined in the table below (refer to Attachment "A").

Areas	Original Implementation Schedule (Nov 18, 2013 Council Report)	
Bayview Glen Area	Phase 1 - Stage 1 (Phase 1A & 1C)	2014/2015
	Phase 1 - Stage 2 (Phase 1B)	2015/2016
Grandview Area	Phase 2 - Stage 1 (Phase 2A)	2015/2016
	Phase 2 - Stage 2 (Phase 2B)	2016/2018

Construction of these upgrades provides an opportunity to concurrently replace aged cast iron watermain in these areas and to avoid disturbance of the restored roadway and neighborhood twice. Through detail design, Phase 1 Bayview Glen Area was divided into 3 areas (Phase 1A, 1B, 1C), with Phase 1A proceeding first based on the requirement to start construction on the downstream portion of the improvements. This phase is the most complicated and difficult phase to implement in West Thornhill.

On November 26, 2013, Council approved the structure of the stormwater fee rates in order to meet the annual revenue target for the first five year cycle of the Program. As approved, the stormwater fee is a 30 year program at a cost of \$186M, and every 5 years the fee rates are to be adjusted, if necessary, to reflect actual implementation costs. The approved fee rates for the first 5 years (starting in 2015) were:

- \$36 per unit/year for residential and multi-residential properties
- \$21/\$100,000 CVA/year for non-residential properties

Phase 1A Construction Tender

Due to the scope of the project, contractors were prequalified to ensure that they have the necessary qualifications, experience and resources to complete the work in accordance with City of Markham requirements and within the specified timelines. Prequalification 279-P-13 was issued in accordance with the Purchasing By-law 2004-341.

Pre Qualification Information (279-P-13)

Advertised	ETN
Prequalification closed on	October 29, 2013
Number of Contractors picking up the Pre-qualification document	16
Number of Contractors responding to the Pre-qualification	12
Number of Contractors Pre qualified	6

Tender Information (072-T-14)

Advertised	ETN
Bids closed on	May 22, 2014
Number picking up the Bid document	5
Number responding to the Bid	1*

* Of the six (6) prequalified contractors, five (5) picked up the Bid document and attended a site meeting to discuss the project. Staff understands the lack of Bid response can be attributed to other large projects on the market closing relatively at the same time. The four (4) bidders who picked up the Bid document but did not submit a Bid advised that they were too busy as they were recently successful on other large projects for the Region of Peel/Durham/York and other municipalities.

Price Summary	Bid Price (Incl. of HST)	Revised Bid Price (Incl. of HST)
Lancorp Construction Co Ltd.	\$11,051,079.47	\$10,479,269.09

Staff met with the consultant and sole Bidder, Lancorp Construction Co Ltd. to identify more cost effective or alternate methods of construction and/or selection of materials without loss of design integrity or functionality. Negotiations with the sole Bidder resulted in a cost reduction of \$571,810.38 inclusive of HST, which represents a cost reduction of approximately 5.2% as compared to the original Bid.

OPTIONS/ DISCUSSION:

Budget Shortfall for Phase 1A

The available budget for construction is \$5,673,965.58 and based on the revised Bid price there is a shortfall in the amount of \$6,153,329.16. The shortfall is primarily due to:

- The capital budget that was approved in 2009/2010 is based on 2010 West Thornhill Class Environmental Assessment (EA) cost estimate.

- During detail design stage, the EA recommendations were refined to obtain the same level of service. Based on the detailed soil and ground water investigations, the design resulted in complex construction methods for large sewers in deep excavations that requires extensive dewatering. In addition, a revised layout of improvements compared to the EA was identified to provide the most cost effective design solutions.
- Upon completion of the detail design stage, the cost estimate for Phase 1A identified a potential shortfall of \$4,194,647 over the available budget due to the complexities of the work required and the extremely challenging local site conditions . Staff proceeded to tender Phase 1A.
- Pricing obtained in response to Tender 072-T-14 exceeded the cost estimate by \$1,958,682. The total shortfall is \$6,153,329.15. The contributing factors are:
 - Complexity of the project (extensive dewatering and deep excavation)
 - Market conditions
 - Tender release timing competed with other large tenders on the market
 - Limited qualified contractors for below grade construction
 - Availability of contractors due to ongoing commitments

Watermain Replacement

The existing cast iron watermain on Doncrest Drive, Poinsetta Drive and Daffodil Avenue are close to the end of their life cycle. Combined replacement of services will also minimize disruption to the local community by avoiding replacement of watermain and repair of the roadway at a later date.

The replacement of cast iron watermain is consistent with the City's strategy to upgrade aged and deficient watermain to improve supply capacity and reliability. Replacement of these old cast iron watermain will also offer improved reliability (less risk of breaks) as well as improve water quality and flows for domestic and fire demand. Based on experience, cast iron watermain are susceptible to internal and external corrosion as they age and therefore lead to poor water quality and increased watermain breaks. The new watermain replacement material will be PVC pipe which has the same lifecycle of 90 years as cast iron watermain and is superior as it is heat resistant, chemical resistant and non-corrosive.

The tender award includes the replacement of the existing watermain at a cost of \$1,325,816.77 inclusive of HST. The remaining budget of \$1,073,019.58 funded from the Waterworks Stabilization Reserve in account # 058-6150-14271-005 Flood Control Implementation – West Thornhill Phase 2 will be used for watermain replacement in Phase 1B in 2015.

Contract Administration and Inspection Services

In 2011, the City issued Request for Proposal ("RFP") 247-R-11 for consulting engineering services for the West Thornhill Flood Control Implementation Alternative Refinement, Preliminary and Final Design. The consultant was requested to submit a preliminary work program and fee for the contract administration and inspection services based on a construction period of 16 work weeks. The actual construction period of Phase 1A is 32 work weeks and the contract administration fee is being adjusted accordingly.

Also, geotechnical inspections, environmental inspections and materials testing during construction were not included in the original RFP. Based on the recent submission by R.V. Anderson, the geotechnical and environmental inspections including ground settlement monitoring and materials testing will be in the order of \$100,191.37, inclusive of HST.

Based on the above and upon further review of the revised proposal, staff recommends increasing the Purchase Order for R.V. Anderson in the amount of \$300,098.73, inclusive of 10% contingency and HST (\$172,625.66 (CA) + \$100,191.37 (Geotechnical) + \$27,281.70 - Contingency). Asset Management and Purchasing staff has reviewed the submitted rates and found them to be comparable to a project of this magnitude and scope. The proposed contract administration and inspection service is 3.7% of the total construction cost, which is in line with the current market rate.

Public Input

A Public Information Committee (PIC) meeting was held on May 7, 2014. The focus of the meeting was to provide an update to the area residents and businesses, as well as to address any potential issues or concerns that the public may have on the proposed construction.

Traffic Management Plan

The objective of the traffic management plan is to limit the traffic within the construction zone (only local traffic will be allowed) and divert through traffic onto adjacent roadways.

Communications Plan

Staff will be providing regular updates to the affected stakeholders as well as providing early notification for any disruptions to driveway access or municipal services. The City of Markham's website will also be updated as required to provide up-to-date information on the status of the project.

Construction Moratorium

In early 2014, Asset Management staff advised all utilities companies (e.g. Power Stream, Enbridge, and Bell Canada) that all upgrades to their infrastructure to be completed prior to permanent restoration of roads in 2015.

Asset Management staff are requesting that Council approve a 5-year moratorium on major construction work within the roadway along Doncrest Drive, Poinsetta Drive and Daffodil Avenue, which is to be enforced immediately after construction is substantially complete. Minor and emergency repairs would be permitted. The moratorium would not affect any utility projects within the boulevard area.

Project Schedule

The project schedule for the Phase 1A works is as follows:

- June 30, 2014 – Issue Purchase Order to contractor
 - July 7, 2014 – Commencement of Work (No through traffic, access to local residents only)
 - December 23, 2014 – Completion of roadway paving on the completed sections
 - January to Spring 2015 – Winter Shutdown
 - Spring 2015 to Summer 2015 – Complete remaining work and above ground works
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Revised Implementation Schedule

The revised implementation schedule for the initial phases of West Thornhill is shown in the following table considering construction sequencing. Construction areas are shown on the map Attachment 'A'.

Areas	Revised Implementation Schedule	
Bayview Glen Area	Phase 1 - Stage 1 (Phase 1A)	2014/2015
	Phase 1 - Stage 2 (Phase 1B & 1C)	2015/2016
Grandview Area	Phase 2 - Stage 1 (Phase 2A)	2016/2017
	Phase 2 - Stage 2 (Phase 2B)	2016/2018

FINANCIAL CONSIDERATIONS AND TEMPLATE:

The following table summarizes the financial considerations for Phase 1A .

Original Budget and Account #	\$4,000,000.00	058-6150-9330-005 Thornhill Storm Sewer Upgrades 058-6150-14271-005 Flood Control Implementation – West Thornhill Phase 2
	\$4,470,800.00	
Budget Available for this Project	\$3,102,592.00 \$2,571,373.58	058-6150-9330-005 Thornhill Storm Sewer Upgrades 058-6150-14271-005 Flood Control Implementation – West Thornhill Phase 2
Total Budget Available for this Project (A)	\$5,673,965.58	
Less: Construction Cost	\$10,479,269.09	} Awarded to Lancorp Construction Co. Ltd. (072-T-14)
Less: Construction Contingency (10%)	\$ 1,047,926.91	
Less: Contract Administration Services (Increase)	\$272,817.04	} Awarded to R.V. Anderson Associates Limited (247-R-11)
Less: Contract Administration Services Contingency (10%)	\$ 27,281.70	
Total Construction Cost (B)	\$11,827,294.74	
Budget Shortfall (A – B)	(\$6,153,329.16)	

Note: Figures above includes HST impact

Remaining budget in account # 058-6150-14271-005 Flood Control Implementation – West Thornhill Phase 2 in the amount of \$1,073,019.58 will be used for watermain replacement in Phase 1B in 2015 which is not included in the above shortfall.

Staff evaluated four (4) options to address the shortfall:

Option 1: Cancel and Re-issue Tender in July 2014: Not Plausible and Not Recommended

Pros:

- None.

Cons:

- The potential of not receiving a bid.
- No guarantee of lower prices than the present Tender price.

- Material change in scope is required to justify re-issuance of the tender.
- Loss of a portion of the summer construction season which lengthens the overall construction duration.
- Increases construction administration fees.
- Retendering will not recover shortfall identified through the design requirements (\$4,194,647).

Option 2: Cancel and Re-issue Tender in Nov/Dec 2014 – Plausible, Not Recommended

Pros:

- A possibility of receiving competitive bids and/or lower prices in releasing the tender in the early stage of the construction period (2015/2016).

Cons:

- A year of delay in construction.
- Need to defer Phase 1B (north of 1A, Laureleaf Road – refer to Attachment “A”) due to the close proximity of the areas as construction cannot be carried out in the neighborhood streets at the same time. Proceed with Phase 1C tender in late Fall 2014.
- No guarantee of lower prices than the present Tender price.
- Retendering will not recover shortfall identified through the design requirements (\$4,194,647).

Option 3: Award the Contract, maintain approved stormwater fee rates, and extend the collection of the fee from 30 to 41 years - Plausible and Not Recommended

Pros:

- Delivery of the Flood Control Program as scheduled.
- No change to the stormwater fee rates for the first 5 years.

Cons:

- Funding source for the shortfall needs to be identified.
- Collecting stormwater fee rates beyond the completion of construction period.

Option 4: Award the Contract and Increase the stormwater fee to \$47 per unit/year from \$36 per unit/year for residential and multi-residential properties and \$29/\$100,000/year CVA from \$21/\$100,000/year CVA for non-residential properties - Plausible and Recommended

As approved by Council on November 26, 2013, the 30 year City-wide Flood Control Program had an estimated cost of \$186M. The Stormwater fee rates for the first five years of the City-wide flood control program were determined based largely on the 2010 West Thornhill Class Environmental Assessment (EA) cost estimate. The detailed design cost estimate and tender price for Phase 1A area are greater than the EA estimate. Based on the unit costs from the Phase 1A construction tender, the updated quantities in Phases 1B, 1C and 2, and revised program administration costs, the estimated cost of the 30 year Flood Control Program has been revised to \$234M (2014 dollars).

The cost of the program is based on the information known to date. As future phases of the West Thornhill area progress through detailed design and the tender process, implementation costs will become more accurate. Future Class EAs will also serve to update project costs across the City. As approved by Council on November 26, 2013, the program funding requirement will be updated within five years to reflect updated project costs estimates, market condition, Gas Tax allocation, inflation, growth, administration costs, and revenue collection.

Pros:

- It is fiscally prudent to align the stormwater fee rates with the actual costs for West Thornhill Phase 1A implementation and the revised future program costs.
- Delivery of the Flood Control Program as scheduled.

Cons:

- Increase of stormwater fee rates.

Staff recommends that the contract award be funded from “Thornhill Storm Sewer Upgrades” 058-6150-9330-005 in the amount of \$3,102,592.00 and “Flood Control Implementation – West Thornhill (Phase 2)” 058-6150-14271-005 in the amount of \$2,571,373.58.

The revised cost estimate for the overall Flood Control Program from \$186M (2014 dollars) to \$234M (2014 dollars) is addressed through an increase of stormwater fee rates to \$47 per unit/year from \$36 per unit/year for residential and multi-residential properties and \$29/\$100,000 CVA/year from \$21/\$100,000 CVA/year for non-residential properties.

Regardless of the Option, staff will continue to pursue other funding sources for the Flood Control Program including through the New Building Canada Plan – Infrastructure Fund, as approved by Council on June 11, 2014. As formal applications for this fund are not yet being accepted, and results are uncertain, the stormwater fee rates need to be finalized now in order to deliver the Flood Control Program for West Thornhill, and help support communication activities and provide advance notice of the rate to property owners for their 2015 budget planning.

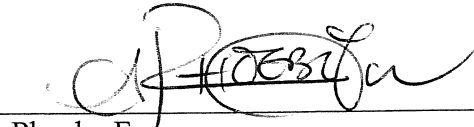
ALIGNMENT WITH STRATEGIC PRIORITIES:

The proposed flood remediation program is in line with City’s goal to provide better quality services to the public and is consistent with the Building Markham’s Future Together strategic priority on the “Growth Management” and “Environment” as it considers sustainability on the built environment.

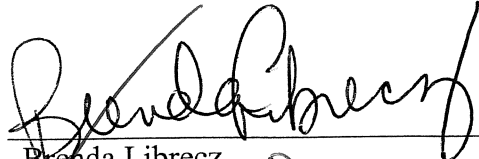
BUSINESS UNITS CONSULTED AND AFFECTED:

Finance department has been consulted and their comments have been incorporated.

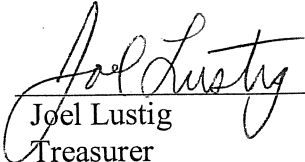
RECOMMENDED BY:



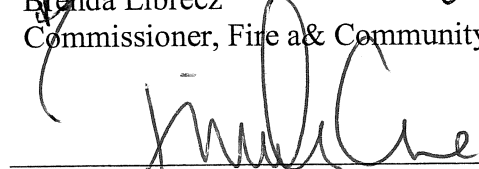
Phoebe Fu
Director of Engineering



Brenda Librecz
Commissioner, Fire a& Community Services



Joel Lustig
Treasurer



Trinela Cane
Commissioner, Administrative Services

ATTACHMENTS:

Attachment 'A' – Map showing Implementation Program

Attachment 'B' – Map Showing Phase 1A