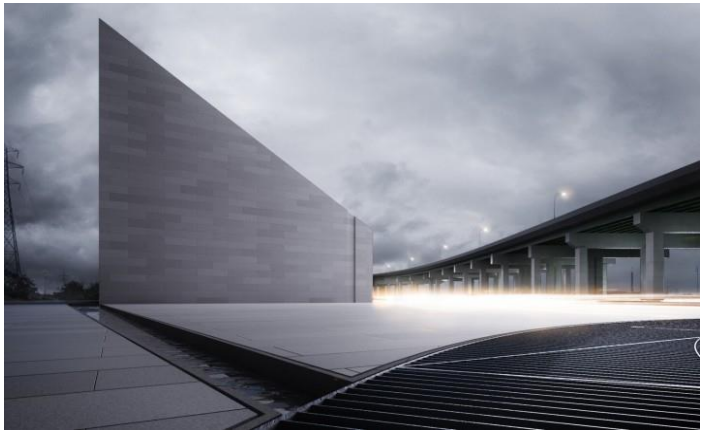
East Bayfront and West Don Lands Stormwater and East Bayfront Sanitary Servicing Infrastructure Request for Supplementary Capital Approval



Finance, Audit and Risk Management Committee Meeting

March 9, 2017

Objectives

- To update the status of the East Bayfront (EBF) and West Don Lands (WDL) Stormwater (Stormwater) and EBF Sanitary Servicing (Sanitary) Infrastructure Projects
- To provide background on the original June 25, 2014, $46.9 million Capital Approval for the Stormwater and Sanitary Infrastructure Projects
- To describe changes (if any) to the original project scope, budget, schedule and funding
- To obtain FARM Committee and Board of Directors approval to invest an additional $19.6 million (for a total of $66.5 million) to complete the Stormwater and Sanitary Infrastructure Projects

Background

This project includes two distinct scopes of work: 1) Stormwater conveyance and treatment; and 2) Sanitary Sewage conveyance. Refer to the original June 25, 2014 Capital Approval Request slide below for a summary of the background rationale for this project.

Key Plan: Stormwater & Sanitary Servicing Infrastructure

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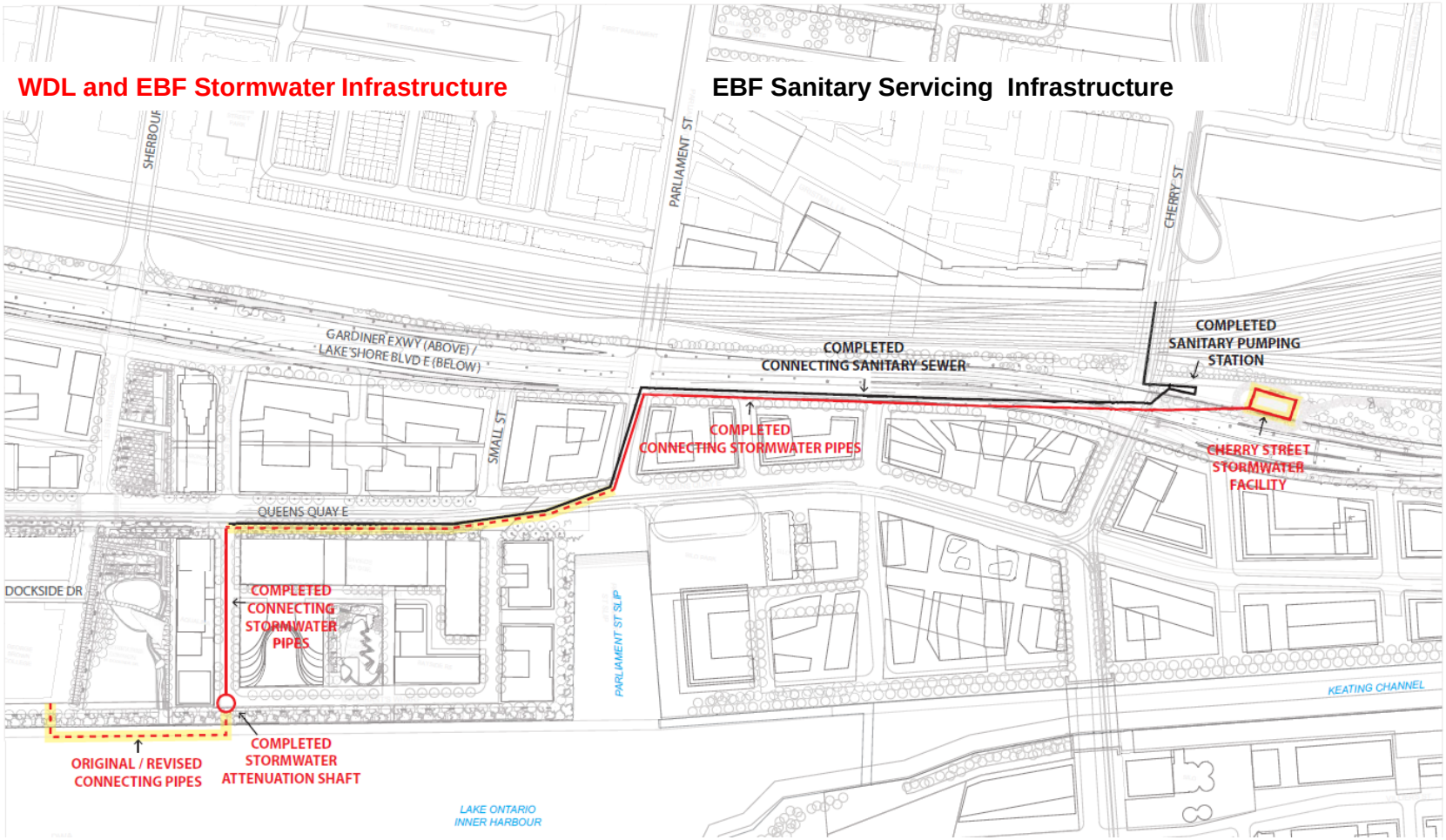

Background – Stormwater

The project requirements as defined by the City for the EBF and WDL Stormwater Servicing infrastructure were as follows:

- In March 2013, Toronto Water requested that the WDL stormwater treatment facility at 480 Lake Shore Blvd. East be enlarged to allow for the consolidation of the WDL and EBF stormwater treatment facilities. These facilities were originally conceived of and designed as separate, stand-alone facilities.
- Toronto Water further requested that additional capacity be incorporated into the stormwater treatment facility to facilitate development of the Keating Precinct.
- Finally, Toronto Water requested that the design and construction of the consolidated stormwater treatment facility - now referred to as the Cherry Street Stormwater Facility (CSSWF) – be expedited and built in advance of the completion of the EBF and WDL precincts. As a result, Toronto Water obtained City Council approval to fund the expansion of the CSSWF.

Background – Stormwater

The project scope and components contained in the original Capital Approval include:

- A 12m diameter by 20m deep stormwater attenuation shaft (SAS), complete with mechanical controls, located within the Bayside subdivision
- The CSSWF located at 480 Lake Shore Blvd. expanded to service all of the WDL, EBF, and North Keating Precincts
- Piping to convey stormwater from the Bayside SAS to the CSSWF
- Piping to convey stormwater to the Sherbourne Common Ultraviolet (UV) Treatment Facility for final disinfection
- Conveyance piping to connect the Dockside subdivision to the Bayside SAS

Background – Sanitary Sewer

The project requirements as defined by the City for the EBF Sanitary Sewer Servicing infrastructure were as follows:

- Pursuant to the original servicing plan for EBF (approved by the City), in 2011/12 Waterfront Toronto constructed a Sanitary Sewer conveyance pipe from Sherbourne Street and Queens Quay to the Scott Street Pumping Station at Yonge Street and Esplanade.
- This pipe was sized to accommodate all of EBF, however due to capacity issues at the pumping station, the City advised that all sanitary flows east of Sherbourne Common would need to be piped and pumped to the main Sanitary Sewer collector pipe (the Low Level Interceptor) located at Cherry Street and Eastern Avenue.
- The scope of the project involved the installation of new pipes to 480 Lake Shore Blvd. and construction of a new sanitary pumping station at 480 Lake Shore Blvd., as well as a connection to the sanitary sewer on Cherry Street in WDL.
- Toronto Water agreed to fund this work as it constituted a change to the originally approved EBF sanitary servicing plan which had already been implemented by Waterfront Toronto.

Background – Sanitary Sewer

The project scope and components contained in the original Capital Approval include:

- Sanitary Pumping Station, relocated to 480 Lake Shore Blvd. enlarged to serve both EBF and North Keating Precincts
- Gravity flow sanitary sewer from Bayside to Cherry Street along Lake Shore Blvd.
- Sanitary force main from the Sanitary Pumping Station north on Cherry Street to the existing sanitary sewer

The revised strategy also eliminated the following temporary works:

- Bonnycastle Street sanitary sewer
- Queens Quay sanitary sewer from Bayside westward to Sherbourne St.

Background - Summary

- Toronto Water will achieve operating efficiencies by consolidating and expanding the stormwater treatment facility at 480 Lake Shore Blvd., therefore it has agreed to fund a portion of this project
- In order to free up capacity at the Scott Street Pumping Station and lengthen the useful life of that installation, Toronto Water agreed to fund the new sanitary sewer infrastructure including the pumping station at 480 Lake Shore Blvd.
- In order to expedite construction of these projects, Toronto City Council approved additional funding for the project on July 26, 2013
- A Project Delivery and Funding Agreement with the City was executed on March 24, 2014 for the delivery of the two projects
- On June 25, 2014 the Board approved a total Capital Investment in the amount of $46.9M for the combined stormwater and sanitary sewer infrastructure, based on the City Council approval and Delivery Agreement

Status:
Stormwater sewer system

Current Status Update: Stormwater Servicing Infrastructure

- The Bayside Stormwater Attenuation Shaft – which collects and holds stormwater prior to pumping to the CSSWF – is complete and operational
- The storm sewer force mains, which convey stormwater from the Bayside SAS to the CSSWF, and the return piping to the Sherbourne Common UV Treatment Facility, is 80% complete (a section to be constructed on Queens Quay between Bonnycastle Street and Small Street was deferred due to the proximity of a City watermain in very poor condition)
- The design drawings and specifications for the CSSWF have been updated to include recommendations from an earlier value engineering workshop, and the tender documents are being finalized
- Contract documents and approvals for the conveyance piping to connect the Dockside subdivision to the Bayside SAS (the “in-water pipe”) are to be completed in 2017

Status:
External Sanitary Sewer

Current Status Update: Sanitary Servicing Infrastructure

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- Construction of the Sanitary Pumping Station (SPS) located at 480 Lake Shore Blvd. East is complete, with the exception of the installation of the permanent pumps, power and controls.
- An interim pumping bypass has been constructed to convey flows until such time as the SPS is fully commissioned
- Construction of the gravity flow sanitary trunk sewer from Bayside to the SPS is complete and the sewer is operational
- Construction of the sanitary force main from the SPS north on Cherry Street to the existing sanitary sewer is complete and operational
- The date for installation of permanent power, pumps and controls and the final completion and commissioning of the SPS is dependent upon construction of the dedicated electrical room in the CSSWF

Supplementary Capital Approval

Supplementary Capital Approval is required in order to complete the EBF and WDL Stormwater and Sanitary Infrastructure Projects

- Waterfront Toronto's standard procedures provide for Capital Approvals to be sought after design has progressed to a stage where project costs can be estimated to a reasonable level of certainty (generally not before 20% design has been achieved).
- Prior to commencing design to determine the specific requirements and costs of this project, Toronto Water required City Council approval to accelerate and fund the project. Details and costs submitted for City Council approval were therefore developed based only on a conceptual understanding of the project requirements and were not fully-informed.
- Therefore, the original Capital Approval was sought based on the budgets and funds approved by City Council as these represented the available budget and funding allocated for the project.
- As reported to the FARM Committee on September 8, 2015, tenders received for the Cherry Street Stormwater Facility were over budget and exceeded the available funding. This risk was identified in the original Capital Approval request – see following slide

Supplementary Capital Approval

The Capital Approval for the project included the following table of potential risks:

Risk Description	Potential Impact	Mitigation Strategy
Permits approval issues	Schedule delays, additional costs and scope	Obtain stakeholder commitment on review times, quality submissions, continuous monitoring and communication, management escalation if required.
Construction Document coordination - poor / untimely	Schedule delays and additional costs during construction	Timely preparation of design & tender documents, regular coordination meetings, document coordination and QA review allowed for in schedule.
Long lead items (BFF)	Schedule delays	Identify any special purchases items and consider alternatives where possible.
Lack of project integration - schedules	Schedule delays and additional costs and reputation impact	Regular project coordination meetings with development parties Identify & mitigate integration issues
Hydro One duct bank	Schedule delays and redesign costs	Team to review asbuilts with the Authority and schedule test pit verification where possible.
Tender higher than budget	Schedule delays. Can not proceed with authorization to award	Exercise value engineering options. Seek additional funding from Stakeholders or through LTFP
Gardiner Expressway Foundations	Additional cost and schedule impact and potential damage to foundations	Explore alternative design solutions to avoid Gardiner, field investigations to determine precise foundation locations

Supplementary Capital Approval

- Pursuant to the Risk Mitigation strategy included in the original Capital Approval, the FARM Committee endorsed that implementation of certain non-time sensitive aspects of the stormwater infrastructure contemplated in the June 2014 Capital Approval (i.e., the in-water pipes between Sherbourne Common and Bayside and installation and commissioning of stormwater treatment equipment within the Cherry Street Stormwater Facility) would be deferred.
- Deferred work would be value-engineered to the extent possible and reissued for tender at a later date pending necessary additional funding becoming available and to eliminate the assumed Pan-am Games construction price premium.
- A significant portion of the servicing infrastructure has been constructed over the last 2 years, however continued deferral of the work will result in additional maintenance and operating costs as well as increased construction costs due to escalation and phasing premiums.
- Funding has now been identified to allow for the construction of the remaining scope and outstanding project components included in the original Capital Approval

Status Update

- The following project components remain to be constructed:
  - WDL and EBF Stormwater Servicing Infrastructure
    - Stormwater Treatment Facility building and treatment equipment
    - Dockside/Bayside in-water stormwater connector pipes
    - Twin storm sewer force main on Queens Quay between Bonnycastle Street and Small Street
  - EBF Sanitary Servicing Infrastructure
    - Permanent pumps
    - Permanent and back-up power
    - Pumping station controls
- Additional capital approval is required to complete the construction of the infrastructure, and to address ongoing maintenance and operating costs of the various facilities until final assumption by the City

Key Plan: Stormwater & Sanitary Servicing Infrastructure

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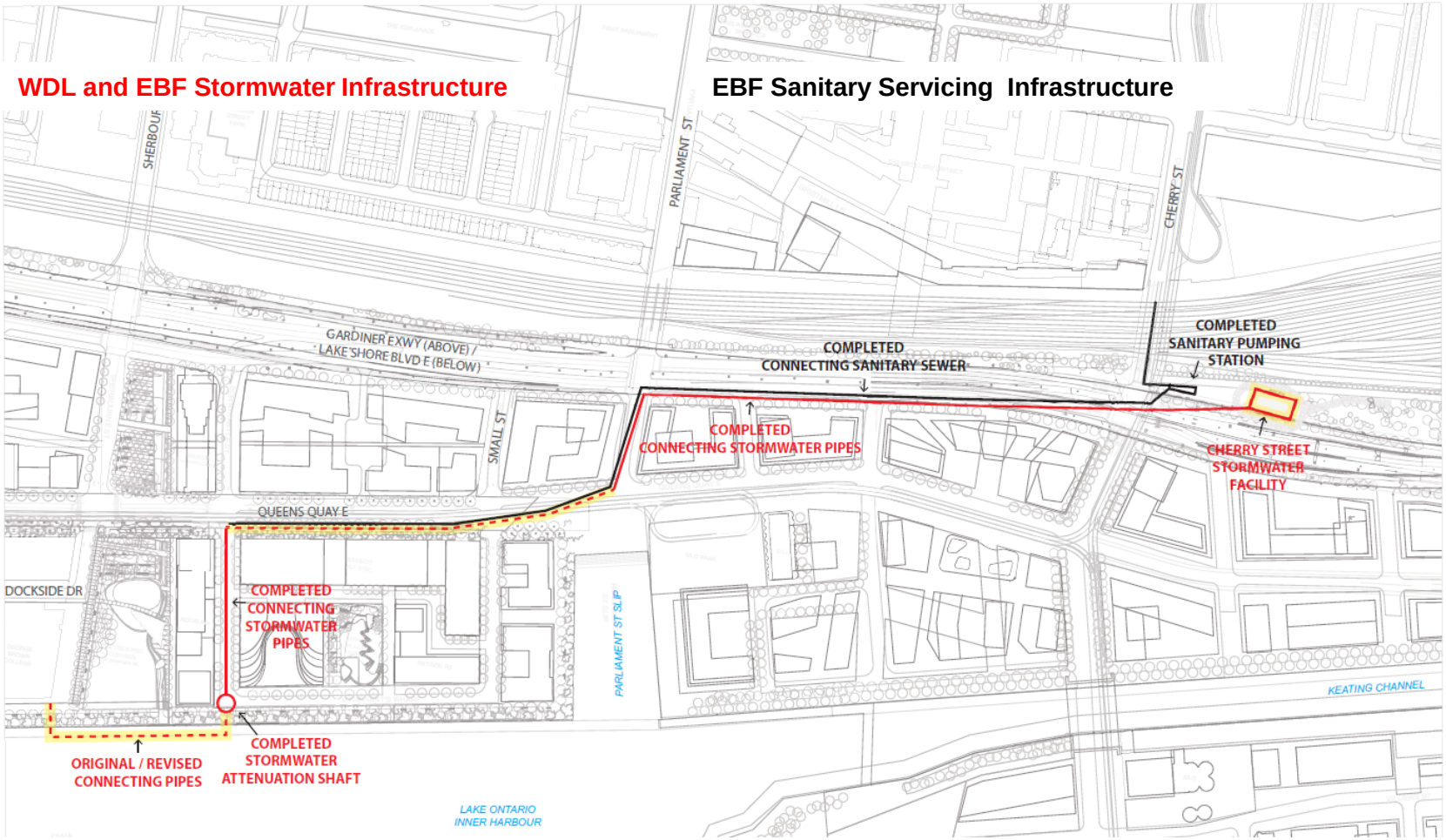

Current Status - Capital Budget

Work Package #	Project Description	June 25, 2014 Capital Approval ($ Millions)	Cost to January 31, 2017 ($ Millions)	Balance Remaining ($ Millions)
EBF04-04/WDL06-03	Stormwater Distribution and Treatment	$ 27.50	$ 15.80	$ 11.70
EBF05-02	Sanitary Sewer Distribution and Pumping	$ 19.40	$ 17.95	$ 1.45
	Total	**$ 46.90**	**$ 33.75**	**$ 13.15**

Proposed Capital Budget

Work Package #	Project Description	June 25, 2014 Capital Approval ($ Millions)	Additional Capital Required ($ Millions)	Anticipated Total Project Cost ($ Millions)
EBF04-04/WDL06-03	Stormwater Distribution and Treatment	$ 27.50	$ 19.10	$ 46.60
EBF05-02	Sanitary Sewer Distribution and Pumping	$ 19.40	$ 0.54	$ 19.94
	Total	**$ 46.90**	**$ 19.64**	**$ 66.54**

Budget Allocation	June 25, 2014 Capital Approval ($ Millions)	Additional Capital Required ($ Millions)	Anticipated Total Project Cost ($ Millions)
Hard (Construction and Interim Operations) Costs	$ 35.30	$ 15.98	$ 51.28
Soft Costs	$ 5.10	$ 1.60	$ 6.70
Contingency	$ 6.50	$ 2.06	$ 8.56
Total	**$ 46.90**	**$ 19.64**	**$ 66.54**

Sources of Funding

Source	Funding ($ Millions)
Original Capital Approval	**$46.90**
Government Funding (Within initial $1.5 Billion)	$15.60
Supplementary City Funding (Beyond initial $1.5 Billion)	$17.04
City Financing (to be repaid from future WT revenues)	$14.26
Additional Capital Approval	**$19.64**
East Bayfront Local Infrastructure Charge (Section 37 contributions)	$17.01
Land Sale Revenues (Bayside Precinct)	$ 2.63
Total Sources of Funds	**$66.54**

Project Risks

Risk Description	Potential Impact	Mitigation Strategy
Unforeseen site conditions and conflicts during construction	Schedule delays, additional costs and scope changes	Carry construction contingency and undertake test pitting and sub-surface utility investigation during design phase to identify possible conflicts, identify in tenders prior to start of construction
Schedule impacts of 3rd parties – site congestion, etc	Schedule delays, lack of project integration, additional costs and scope changes	Liaison with Major Capital Infrastructure Coordination Office (City of Toronto) Bi-weekly coordination meeting with 3rd party to review schedules.
Schedule of external works - delay	Schedule delays	Monitor schedule - particularly 3rd party approvals Monitor schedule activities continuously
Availability of resources	Schedule delays, additional costs and potential for sole sourcing	Develop a flexible design and procurement strategy with alternate products or methods

Project Risks (cont'd)

Risk Description	Potential Impact	Mitigation Strategy
Permits approval issues	Schedule delays, additional costs and scope	Obtain stakeholder commitment on review times, quality submissions, continuous monitoring and communication, management escalation if required.
Construction document coordination - poor / untimely	Schedule delays and additional costs during construction	Timely preparation of design & tender documents, regular coordination meetings, document coordination and QA review allowed for in schedule.
Long lead items (BFF)	Schedule delays	Identify any special purchases items and consider alternatives where possible.
Lack of project integration - schedules	Schedule delays and additional costs and reputation impact	Regular project coordination meetings with development parties Identify & mitigate integration issues
Tender higher than budget	Schedule delays. Can not proceed with authorization to award	Exercise value engineering options. Seek additional funding from Stakeholders or through LTFP
Gardiner Expressway Foundations	Additional cost and schedule impact	Coordinate design and construction with Gardiner East Hybrid implementation team

Recommendation

Management recommends that the Committee approve additional Capital Investments for the EBF Stormwater and Sanitary Servicing Infrastructure of $19.64 Million, bringing the total approved value of the project to $66.54 Million. The recommendation is based on the following:

1. The City of Toronto has approved the allocation of EBF Local Infrastructure Charges (Section 37) to fund EBF implementation projects in the 2017 Capital Budget.
2. Additional funding, sufficient to complete the project as originally contemplated, has been identified and included in the Waterfront Toronto 2017/2018 Corporate Plan.
3. The overall cost of the project will increase further if the work is not completed in an expeditious manner due to:
    i. Construction and Operations & Maintenance costs annual escalation (2.5% to 3% pa)
    ii. Additional contractor mobilization and demobilization costs
    iii. Additional consultant contract administration due to extended schedule
    iv. Additional Waterfront Toronto project management costs due to extended schedule
    v. Extended operating and maintenance costs incurred until handover to the City

Motion

ON MOTION duly made, seconded, and carried, be it **RESOLVED** that the Finance, Audit and Risk Management Committee approves, for recommendation to the Board of Directors, an additional capital expenditure of $19.64 Million, for a total capital expenditure of $66.54 Million, to complete the implementation of the EBF Stormwater and Sanitary Servicing Infrastructure.