



**STAFF REPORT
ACTION REQUIRED**

Port Lands Flood Protection: Due Diligence Review and Next Steps

Date:	October 21, 2016
To:	Executive Committee
From:	Deputy City Manager Cluster B Deputy City Manager & Chief Financial Officer
Wards:	Ward 28 Toronto-Centre Rosedale, Ward 30 Toronto-Danforth Ward 32 Beaches-East York
Reference Number:	P:\\2016\\Cluster B\\WF\\EX16004

SUMMARY

The purpose of this report is to recommend next steps for the Port Lands Flood Protection project, undertaken as a part of the City Council-mandated Port Lands Acceleration Initiative. This report provides findings from a due diligence review conducted by Waterfront Toronto for the project including a recommended project scope, budget, and schedule. This report also provides details concerning \$65 million in proposed tri-governmental funding to immediately undertake the Essroc Quay Lake Filling and Naturalization project, which is one component of the overall Port Lands Flood Protection project.

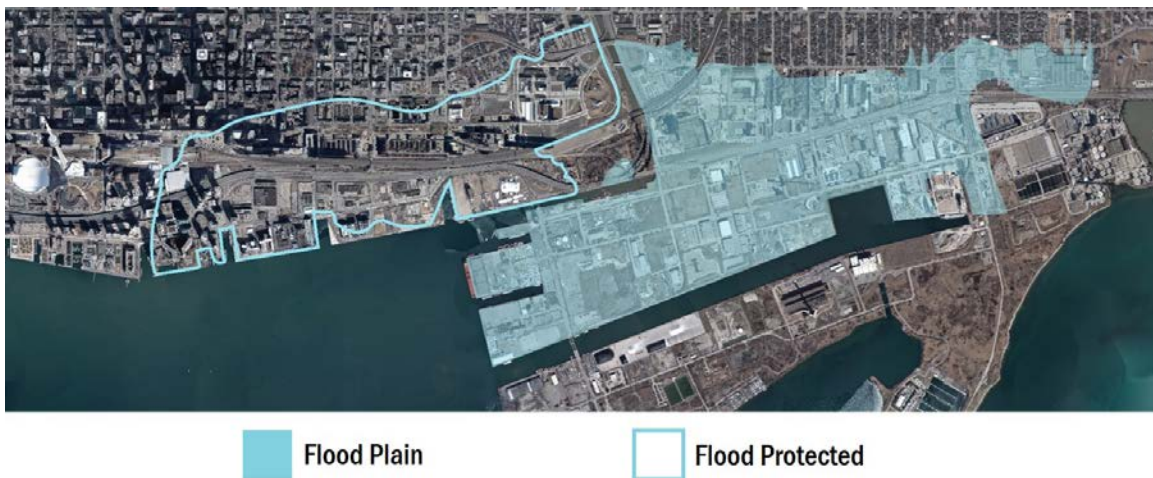
The Port Lands Flood Protection project is vital to protecting life and minimizing property damage associated with a catastrophic flooding event of the Don River. Areas of Toronto currently at risk from a Regulatory Flood Event (e.g., a Hurricane Hazel-level storm event) include the Port Lands north of the Ship Channel, portions of the South Riverdale and Leslieville neighbourhoods, and the South of Eastern area, including the proposed Unilever Precinct. A review of flood protection projects in other jurisdictions indicates that the average benefit-to-cost ratio for flood protection is five to one; in other words, every \$1 invested in flood protection will mitigate \$5 in flood-related property damage.

The project will also enable new development of lands currently restricted under provincial regulation and local planning controls. The proposed flood protection plan will

provide recreational and environmental benefits through the creation of new parks, naturalized areas and wildlife habitats.

A flood protection landform was created as a part of the recent development of the West Don Lands precinct and Corktown Commons which mitigates flood risk to the west of the Don River. 210 hectares (520 acres) of land in downtown Toronto, extending just beyond Yonge Street to the west, from the waterfront to Front Street, is now flood protected. The flood protection infrastructure described in this report will mitigate the flood risk for the vast majority of developed and developable lands within the approximately 290 hectares (715 acres) Regulatory Flood Spill Zone to the south and east of the Don River (Figure 1).

Figure 1 Regulatory Flood Spill Zone for the Lower Don River



Substantial work has been completed for the Port Lands Flood Protection project by Waterfront Toronto, City divisions, the Toronto and Region Conservation Authority (TRCA) and other partner agencies since 2014:

- Two approved Environmental Assessments (EAs) including:
 - Don Mouth Naturalization and Port Lands Flood Protection Project EA
 - Lower Don Lands Infrastructure Master Plan Class EA which identifies the location and design of streets, bridges, transit, utilities, storm water management facilities and other municipal services
- Public engagement and stakeholder agreement for the flood protection plan
- A due diligence review of scope, budget, and schedule related to flood protection and enabling infrastructure in the Port Lands
- Identification of a project (Essroc Quay Lake Filling and Naturalization) for immediate implementation with tri-governmental funding enabled through the federal Clean Water and Wastewater Fund.

The estimated project cost is \$1.25 billion in year-of-expenditure dollars (YOE), comprising all hard (construction) and soft costs, applicable taxes and contingencies,

including an allowance for expected escalation to the proposed year of expenditure. The scope of the project includes permanent flood protection through creation of a new, naturalized mouth of the Don River and other significant flood protection measures, as well as essential municipal services (e.g., water distribution, wastewater/stormwater collection and roadways), streets, bridges, parkland development and environmental remediation in the Port Lands that must be undertaken concurrently with the flood protection for technical and logistical reasons.

If project funding is confirmed by 2017 Q2, construction can commence by 2017 Q4 with scheduled completion in late 2023. Given the costs associated with delaying the project – currently estimated at approximately \$30 million for each year of delay beyond the original project timeline – and the current alignment between government partners in prioritizing critical infrastructure investments, it is essential that funding commitments be established for the Port Lands Flood Protection project as soon as possible.

Due Diligence Review

The due diligence review process for the Port Lands Flood Protection project was initiated in 2015 at the request of the government partners. The review was undertaken by Waterfront Toronto in collaboration with the City of Toronto, TRCA and Toronto Port Lands Company (TPLC). A consultant team provided relevant expertise in design, engineering and construction, risk analysis, cost estimating, environmental engineering, procurement, project management and market analysis. Two qualified organizations peer reviewed the findings. The final due diligence report is provided as an attachment to this staff report.

The current budget estimate of \$1.25 billion (YOE) represents a net increase of \$275 million from the previous estimate of \$975 million (YOE) provided in 2014. The current estimate incorporates more detailed and reliable data from the due diligence review concerning site conditions and technical requirements for the project area, including the nature, extent and distribution of soil and groundwater contamination, as well as additional excavation that will be required due to poor soil conditions. The revised estimate also accounts for minor scope changes, including both additions and reductions/deferrals for related infrastructure work. It also accounts for cost escalation (e.g., inflationary increases) of approximately \$50 million since 2014 (Figure 2).

Figure 2 Variance between 2014 and 2016 Cost Estimates

Factor	Impact
Price escalation between 2014 and 2016	+\$50 million
Additional costs related to poor soil conditions and related groundwork requirements	+\$358 million
Scope changes, including minor additions and reductions/deferrals to individual project components	-\$133 million
Net Variance	+\$275 million

Based on an equal three-way cost-sharing arrangement between the three orders of government, the City's share of the Flood Protection project costs would be approximately \$417 million (YOE) over the 2017 to 2023 time period.

Next Steps

As per Council direction, the Mayor and City staff have been in discussions with representatives of the Government of Canada and the Province of Ontario concerning the project in relation to future infrastructure funding programs. The details of the next round of cost-sharing infrastructure programs are likely to be made public in early 2017. This report recommends that the Mayor and senior City staff request that the federal government and the Province confirm funding commitments by that time. Subject to Council approval, the Port Lands Flood Protection project will be a key priority for the City under Phase 2 of the federal government's green infrastructure plan which is anticipated to provide approximately \$14.9 billion in new funding over the next ten years.

City staff will make all necessary submissions required by federal and/or provincial funding programs. The report recommends that staff be authorized to make these submissions and directed to report back on all details related to the tri-government project funding, including conditions and obligations of relevant contribution agreements.

This report recommends that funding for the City's share of the project be secured through the 2017-2026 capital budgeting and planning process, subject to the securing of federal and provincial funding contributions. Given that development charge revenues are key to funding the project, it is recommended that flood protection components of the City development charges by-law be updated to reflect the revised scope of the Port Lands Flood Protection project and account for the cost-sharing funding request to other orders of government.

In September 2016, the Government of Canada and Province of Ontario committed to a 75 per cent share of \$65 million in proposed joint funding through the federal Clean Water and Wastewater Fund (CWWF), to support the Essroc Quay Lake Filling and Naturalization project. Essroc Quay is a self-contained project that will improve storm water management at the mouth of the Don River. While integral to the overall flood protection plan, the Essroc Quay project can be implemented in advance of the larger scope of work. Infilling Essroc Quay will also lead to improvements in water quality and create new naturalized open spaces and aquatic habitat.

This report recommends that the Waterfront Revitalization Initiative Capital Budget and Plan be increased by \$65.0 million to fund the Essroc Quay Lake Filling and Naturalization project. The City's 25 per cent share (\$16.25 million) of the project costs will be funded through a combination of initial development charge funding (\$5.525 million) and a contribution from the Water Capital Reserve (\$10.725 million) that will be reimbursed through post-period development charge payments and future land sale proceeds. City staff will report to Council and request the authority to enter into a

Transfer Payment Agreement with the Province for this funding in late 2016, once terms and conditions are available for consideration.

A comprehensive planning framework for the Port Lands is currently under development. Among other matters, the framework will provide enhanced land use direction for the Port Lands. Additionally, the City has been undertaking a Transportation and Servicing Master Plan Environmental Assessment for the balance of lands in the Port Lands and the South of Eastern area. Comprehensive preliminary cost estimates for the balance of all hard and soft infrastructure needs, including affordable housing, are being prepared. These two initiatives will be brought forward to Planning and Growth Management (PGM) Committee in early 2017. That report will also provide recommendations for necessary Zoning By-law amendments to enable the Essroc Quay project. Transit planning will be addressed in phase two of the Waterfront Transit Reset, to conclude with a staff report Q2 2017.

A Port Lands Business Plan will also be provided in 2017 concerning the costs associated with redeveloping the Port Lands and portions of the South of Eastern area, the development-related revenues that the City can raise to offset these costs and potential options for funding.

RECOMMENDATIONS

The Deputy City Manager Cluster B and the Deputy City Manager & Chief Financial Officer recommend that:

1. City Council direct the Mayor, the City Manager and the Deputy City Manager Cluster B to request Government of Canada and Province of Ontario funding commitments for the Port Lands Flood Protection project by the second quarter of 2017.
2. City Council direct the Deputy City Manager Cluster B and the Deputy City Manager & Chief Financial Officer to make any submissions required by Government of Canada and/or Province of Ontario funding programs; and to report on all details related to the tri-government funding of Port Lands Flood Protection, including conditions and obligations of any federal/provincial contribution agreements.
3. City Council approve an Essroc Quay Lake Filling and Naturalization capital project with a project cost of \$65.0 million to be created with the Waterfront Revitalization Initiative Capital Program with cash flow approvals of \$35.0 million in 2017, \$25.0 million in 2018 and \$5.0 million in 2019, funded from the following:
 - a. \$32.5 million in federal funding;
 - b. \$16.250 million in provincial funding;
 - c. \$10.725 million funding from the Water Capital Reserve (XR6003);
 - d. \$5.525 million funding from the Storm Water Management Development Charge Reserve Fund (XR2113).

4. City Council direct the Deputy City Manager Cluster B and the Deputy City Manager & Chief Financial Officer to identify funding for \$401 million, the City's one-third share of the balance of the Port Lands Flood Protection project, through the 2017 – 2026 capital budgeting and planning process, with implementation subject to securing the remaining two-thirds share through provincial and federal contributions.
5. City Council direct the Deputy City Manager & Chief Financial Officer to include updated Port Lands Flood Protection project components in the planned update to the City Development Charges By-Law, taking into consideration the funding request to other orders of government.
6. City Council direct the Chief Planner and Executive Director, City Planning, to submit the necessary Zoning By-law Amendment(s) for the Essroc Quay Lake Filling and Naturalization project to the Planning and Growth Management Committee in the first quarter of 2017.

FINANCIAL IMPACT

Cost Estimates for Port Lands Flood Protection

The estimated cost for the Port Lands Flood Protection project, as set out in the attached due diligence report, is \$1.25 billion with escalation to year-of-expenditure (YOE). This amount includes expenses related to construction, design, engineering and approvals and taxes, as well as a risk and cost escalation contingency of 30 per cent.

As discussed in the body of the report, the Port Lands Flood Protection project does not include all the servicing costs required for the regeneration and redevelopment of the Port Lands and South of Eastern area. These costs will be detailed in a report in 2017. That report will also outline all the development-related revenues that the City can raise to offset these costs.

City Funding and Financing for Port Lands Flood Protection

Through the Mayor's "Call to Action" for tri-government support for Waterfront 2.0 projects, the City is seeking a commitment from each order of government for a cost-sharing arrangement for the Port Lands Flood Protection project. Based on an equal three-way cost-sharing arrangement between the three orders of government, the City's share of the Flood Protection project costs would be approximately \$417 million (YOE) over the 2017-2023 time period, as summarized in Figure 3. This provides an assumed annual cash flow for budgeting purposes, which will be refined as per the terms of the federal/provincial contribution agreement(s) once finalized.

Figure 3 Estimated Flood Protection Cost Shares (millions, YOY)

	2017	2018	2019	2020	2021	2022	2023	2017 -2023
Gross Expenditures:								
Essroc Quay	\$35.0	\$25.0	\$5.0	-	-	-	-	\$65.0
Balance of Flood Protection	\$50.3	\$218.5	\$298.9	\$281.4	\$193.5	\$90.0	\$52.5	\$1,185.0
Total Gross Annual Expenditures & Plan	\$85.3	\$243.5	\$303.9	\$281.4	\$193.5	\$90.0	\$52.5	\$1,250.0
Cost Shares:								
Assumed Provincial / Federal Contributions	\$56.9	\$162.3	\$202.6	\$187.6	\$129.0	\$60.0	\$35.0	\$833.3
Net City Share	\$28.4	\$81.2	\$101.3	\$93.8	\$64.5	\$30.0	\$17.5	\$416.7
Total	\$85.3	\$243.5	\$303.9	\$281.4	\$193.5	\$90.0	\$52.5	\$1,250.0

City Financing Requirements

Financing is required when revenues lag behind the expected timing of costs, as in the case of the Port Lands Flood Protection project. Therefore, the City will need to borrow the funds necessary for initial infrastructure expenditures. An assessment of this borrowing on the City's overall debt level will be completed as part of the 2017 – 2026 capital budgeting and planning process; however, the resulting debt is expected to be primarily recovered through development charges and revenues from land sales.

City Funding

Revenues required to fund the City's debt service costs will come from a combination of development charges, and other funding sources, such as revenue from land sales, utility rates and lastly, taxation. These funding sources are discussed in more detail below. This report recommends that funding for the City's share of the Port Lands Flood Protection project be considered in the context of the City's 2017 - 2026 capital budgeting and planning process.

1. Development Charges

Potential recoveries from a city-wide development charge for flood protection has been estimated to total about \$265 million in inflated dollar terms, over the 2017-2046 timeframe, based on estimates prepared by Hemson Consulting. These preliminary estimates are net of both statutory and discretionary deductions/exemptions.

Given that development charge revenues are key to funding the project, it is recommended that flood protection components of the City development charges by-law be updated to reflect the revised scope of the Port Lands Flood Protection project and account for the cost-sharing funding request to other orders of government.

Staff will seek provisions in the contribution agreement(s) to support the allocation of provincial and federal funding towards non-development charge eligible project costs. If successful, this will allow the City to strategically allocate development charges funding to eligible growth-related capital project costs and minimize reliance on other revenue sources, such as property taxes.

2. Land Sales Revenues

Other funding sources, such as proceeds from the sale of City-owned land in the Port Lands, will be unlocked over the longer term (2023-2042) following the provision of flood protection and other necessary infrastructure improvements (e.g., transit and local services), and as development proceeds.

Cushman and Wakefield (C&W) was retained by Waterfront Toronto to prepare a forecast of market demand and a projection of potential revenues from the sale of City-owned lands in the Port Lands, over a 20-year planning period from 2023 to 2042. The revenue projection was peer reviewed by N. Barry Lyon Consultants Ltd. who provided comments that generally aligned with the C&W findings.

The C&W analysis, prepared with input from Waterfront Toronto and City staff, focused on lands within the Villiers Island precinct (33 hectares) and Film Studio precinct (55 hectares) that can potentially be redeveloped over the 2023-2042 planning period, based on their analysis of market demand. Within Villiers Island and the Film Studio District precincts, the City owns approximately 81 per cent and 52 per cent of the net developable land, respectively. A portion of the City-owned land in the Film Studio District is subject to options for long-term leases. The C&W analysis states that the City could realize potential land sales revenues ranging from \$308 million to \$430 million in inflated dollars, based on a range of market demand scenarios. Land sales revenue cash flows were adjusted by C&W to \$33 million to \$125 million in present value terms (2015\$) to account for the timing of the cash flows and the risk that the forecast land sales may not be fully realized.

The C&W revenue projections assume that various conditions are in place for impacted lands by 2023: zoning; full municipal infrastructure; lands that are or will be in an environmental condition to allow the issuance of building permits; and some form of higher order surface transit (e.g., interim bus service in dedicated right-of-way) on both Cherry Street and Commissioners Street. Should any of these conditions not be met, the potential proceeds of the sale of City-owned land would be reduced accordingly. Furthermore, the C&W land sales revenue estimates are before consideration of any City lands that might be set aside for provision of affordable housing.

More detailed information concerning the value and proposed allocation of potential land sales revenues will be provided in the Port Lands Business Plan to be brought forward in a report in 2017.

3. Utility Rates and Property Taxation

Given the expectation of revenues from development charges and land sales, the project would be funded from recoverable debt. In addition, the infrastructure involves works that would be part of the Toronto Water program. Therefore, utility rates could be used as a source of funding. Taxation-based funding would be considered as a last resort should the expected revenue structure not materialize.

Committed Provincial and Federal Funding for Essroc Quay

This report recommends that the Waterfront Revitalization Initiative Capital Budget and Plan be increased by \$65.0 million to fund the Essroc Quay Lake Filling and Naturalization project.

In September 2016, the Government of Canada and Province of Ontario committed to a 75 per cent share of \$65 million in proposed joint funding through the federal Clean Water and Wastewater Fund (CWWF), to support the Essroc Quay Lake Filling and Naturalization project. Subject to Toronto City Council approval, the project can start construction in mid-2017 and be completed within 18 months. Funding for the project is recommended as follows:

- Government of Canada: \$32.500 million (committed)
- Province of Ontario: \$16.250 million (committed)
- City of Toronto: \$16.250 million.

The City's 25 per cent share of the project costs will be funded through a combination of initial development charge funding of \$5.525 million and a contribution from the Water Capital Reserve of \$10.725 million.

The Water Capital Reserve will be reimbursed over time through:

- \$4.8 million in development charge payments
- \$5.9 million in future land sale proceeds from the sale of City-owned land in the Port Lands.

DECISION HISTORY

At its meeting on July 6-8, 2010, City Council adopted the report of May 31, 2010 from the Deputy City Manager Cluster B, titled "Lower Don Lands Project." This report sought City Council support for a number of studies and plans completed by Waterfront Toronto and the TRCA for lands south of the rail corridor, east of Small Street, west of the Don Roadway and north of the Ship Channel known as the "Lower Don Lands".

<http://www.toronto.ca/legdocs/mmis/2010/ex/reports/2010-06-14-ex45-cr.htm#EX45.15>

At its meeting of September 21 and 22, 2011, City Council endorsed the protocol for the revitalization of the Port Lands. This protocol initiated the Port Lands Acceleration

Initiative (PLAI) by the City of Toronto, Waterfront Toronto and TRCA which included a review of the studies endorsed by City Council related to the Lower Don Lands Project.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2011.EX9.6>

At its meeting of October 2, 3 and 4, 2012 City Council adopted the report of August 24, 2012 from the Deputy City Manager Cluster B, titled "Port Lands Acceleration Initiative – Final Report". City Council endorsed the Summary of Findings of the PLAI process and adopted recommendations and directions to amend the Don Mouth and Lower Don Lands Environmental Assessments, based on a revised flood protection design. Council's action initiated the Port Lands Planning Framework, precinct planning, the utilization of development charges for infrastructure, and a comprehensive public consultation process to address all of these items.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2012.EX22.1>

At its meeting of May 7, 2013 City Council adopted the report of April 9, 2013 from the Deputy City Manager Cluster B, titled "Port Lands Acceleration Initiative – Update". City Council adopted recommendations that revised the precinct boundaries for Cousins Quay and the Film Studio District, ensured coordination of the Port Lands Planning Framework with the South of Eastern Strategic Direction, and approved a review of TPLC agreements, policies and practices in the Film Studio District.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.EX31.8>

At its meeting on July 8, 2014 City Council adopted the report of June 19, 2014 from the Deputy City Manager Cluster B, "Port Lands Acceleration Initiative Phase 2 – Progress Report". Council directed City staff to initiate discussions with federal and provincial officials for one-third funding to accelerate the design and construction of Port Lands Flood Protection. In addition, Council recommended the completion of Port Lands Planning Framework, the Transportation and Servicing Master Plan EA, precinct plans for the Film Studio District and Cousins Quay/Villiers Island, and for revisions to be made to the Lower Don Lands Infrastructure Master Plan EA.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.PG34.11>

At its meeting on July 7, 2015 City Council adopted the report of June 22, 2015 from the Deputy City Manager Cluster B, "Waterfront Strategic Review" with recommendations to support, in principle, the undertaking of a second phase of waterfront revitalization supported by tri-government funding and governance. Flood protection was identified as a priority capital project and the Mayor was asked to contact his provincial and federal counterparts to initiate a "Call to Action" negotiation process regarding funding for flood protection and other Waterfront 2.0 projects.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.EX7.6>

ISSUE BACKGROUND

Waterfront Revitalization

Waterfront revitalization is guided by the Central Waterfront Secondary Plan, adopted by Council in 2003 as an amendment to the former City of Toronto Official Plan. The Port Lands are largely designated Regeneration Areas. The Secondary Plan included the concept of naturalizing the Don River Mouth as a "Big Move" and identified the priority environmental assessment work to address flood protection and naturalization.

The substantial progress that has been made to-date in revitalizing Toronto's eastern waterfront has been largely enabled by recent flood protection measures put in place to the west of the Don River. The construction of a flood protection landform as a part of the development of the West Don Lands precinct and Corktown Commons provided flood protection to an area of 210 hectares (520 acres) including existing west Downtown Toronto neighbourhoods. It has enabled the development of the new mixed-use, mixed-income community in the Canary District (formerly the Pan Am / Parapan Am Games Athletes' Village), the East Bayfront and additional development in the eastern portion of downtown Toronto.

As with the first stage of waterfront revitalization, the key to the next phase of work, to the south and east of the Don River, is flood protection. In July 2015 City Council adopted a vision and principles for "Waterfront 2.0," which identified flood protection in the Port Lands, waterfront transit, land servicing and public realm as key priorities.

The Waterfront Strategic Review identified the need for the City to take a leadership role in defining the next phase of waterfront revitalization. A "Call to Action" was proposed and adopted by Council to confirm funding commitments by each order of government to Waterfront 2.0 and the scope of project delivery through a time-limited, formal and structured intergovernmental negotiation process. The Mayor's Office and City staff continue to work closely with government partners to secure tri-government funding for the next phase of waterfront revitalization.

Port Lands Acceleration Initiative

Council approved the Port Lands Acceleration Initiative in 2012 in order to advance the revitalization of the Port Lands. At that time, three planning initiatives were initiated by City Planning and Waterfront Toronto: (i) Port Lands Planning Framework, (ii) the Villiers Island Precinct Plan, and (iii) the Port Lands and South of Eastern Transportation and Servicing Master Plan.

Major public consultations was undertaken in November 2015 to present the emerging direction to the public and stakeholders. City and Waterfront Toronto staff are currently refining the directions and recommendations. Final recommendations for the three planning initiatives will be brought forward in a report to the Planning and Growth Management (PGM) Committee in early 2017.

1. Port Lands Planning Framework

The Port Lands Planning Framework is a comprehensive, high-level plan for the Port Lands that aligns all major aspects required for redevelopment and renewal over the long-term. It will support amendments to the Central Waterfront Secondary Plan, and inform precinct planning and the development review process.

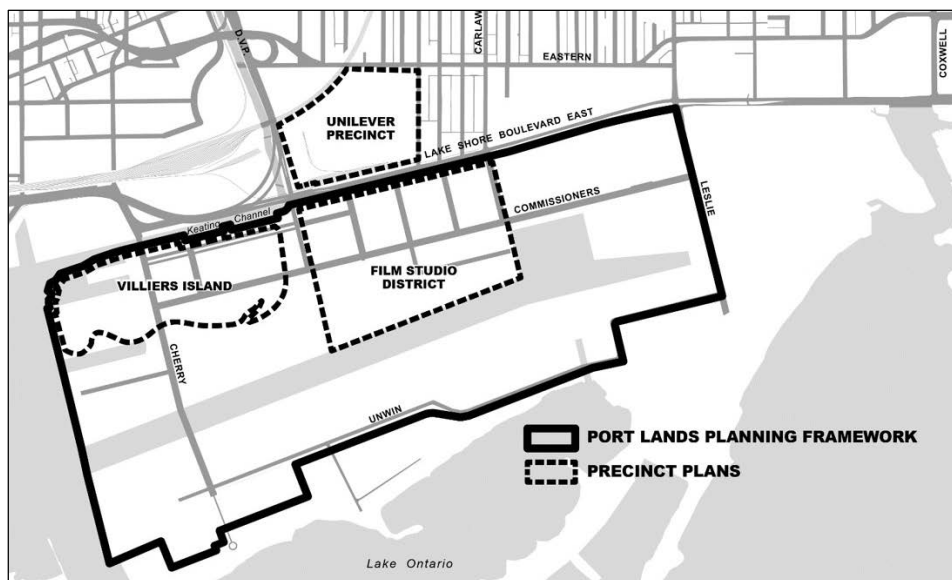
The Port Lands is approximately 325 hectares (805 acres) in area. It is Toronto's only working port and there are a number of important city-serving uses and film/media uses located in the area. The emerging directions for the framework recognizes these uses and will also identify the preferred locations for new mixed-use communities in portions of the Port Lands, including the desired mix of uses in each new community to support achievement of the overall vision.

Given the size of the area, the planning framework will be a long term plan. Some areas are anticipated to redevelop in the near- and medium-terms. These areas include the Villiers Island precinct and portions of the Film Studio District. Additionally, and in support of broader revitalization in the Port Lands and South of Eastern areas, lands south of the Ship Channel are anticipated to intensify with port and industrial uses, including relocating city serving uses to these areas which would open up redevelopment opportunities in other areas.

2. Villiers Island Precinct Plan

A Precinct Plan for Villiers Island has been advanced in tandem with the Planning Framework process. Villiers Island is the area of the Port Lands most immediately impacted by the capital work to be undertaken as a part of the Port Lands Flood Protection project (Figure 4).

Figure 4 Port Lands Planning Framework and Precinct Plan Areas

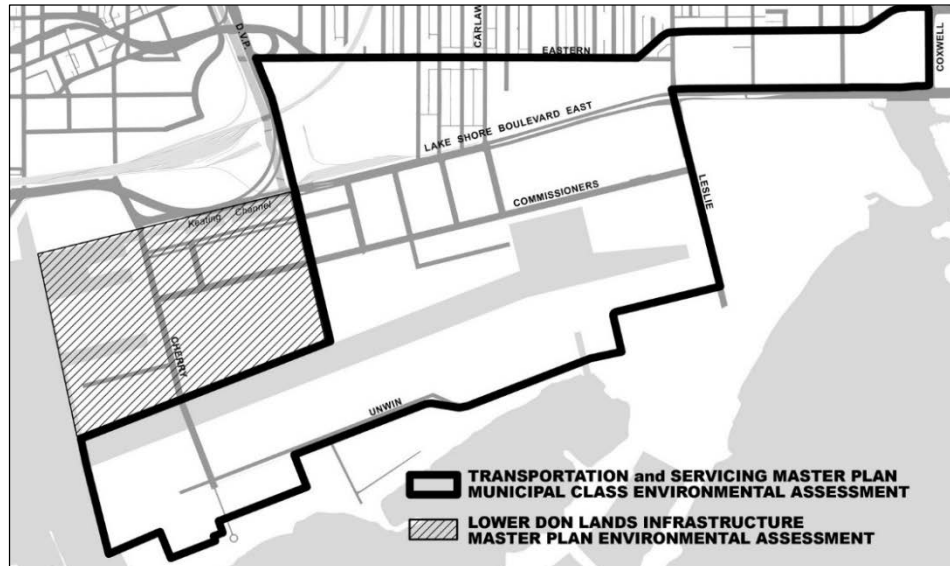


3. Port Lands and South of Eastern Transportation and Servicing Master Plan EA

The Port Lands and South of Eastern Transportation and Servicing Master Plan Environmental Assessment (TSMP EA) was initiated to identify infrastructure investments required to support the overall vision for regeneration and renewal of the Port Lands (excluding the Lower Don Lands) and continued employment growth in the South of Eastern area as part of an integrated planning process with the Planning Framework (Figure 5).

The TSMP EA considers the Port Lands within a broader geographical context and will address needed streets, bridges, transit (streetcar in dedicated rights-of-way) and municipal servicing (water, wastewater and storm water) as an integrated solution. The City is the proponent for the EA and is working in partnership with Waterfront Toronto and the TRCA.

Figure 5 Transportation and Servicing Master Plan EA Project Area



COMMENTS

Port Lands Flood Protection Project

The elimination of the flooding risk in the vicinity of the Mouth of the Don River is a multi-phased project, with the first phase being the West Don Lands flood protection landform constructed as a part of Corktown Commons. The flood protection infrastructure described in this report addresses the second phase of flood protection and covers the vast majority of the remaining properties in the SPA that are still susceptible to flood risk.

The Port Lands Flood Protection project will provide permanent flood protection through the development of a new, naturalized mouth of the Don River and other flood protection

measures (Figure 6). Flood risk associated with the Don River will be eliminated for approximately 240 hectares (595 acres) of the 290 hectares (715 acres) that are currently at risk during a Regulatory Flood Event. Of the remaining lands, approximately 42 hectares (105 acres) will accommodate the new mouth of the Don River and spillway, while the 7- to 8-hectare (20-acre) parcel north of the Metrolinx rail embankment will be considered for flood protection as part of the future planning for the Unilever Precinct.

These flood protection initiatives are key to unlocking new development and investment opportunities for both the Port Lands and South of Eastern area, as well as supporting existing users, including stable residential neighbourhoods that are currently located within the flood plain.

The Port Lands Flood Protection project is a vital infrastructure investment that will ensure the safety of life and property related to a catastrophic (i.e., Hurricane Hazel-level) storm event. It will protect existing land uses and enable new development to occur in areas currently restricted under provincial legislation and the Lower Don Special Policy Area as defined in the former City of Toronto Official Plan.

The peak depth of flooding in the Port Lands would reach the 1- to 2-metre range in some locations during a Regulatory Flood Event. During such an event, flooding would proceed through the Unilever Precinct, over the south side of the Keating Channel and across the Port Lands, towards South Riverdale and Leslieville.

Figure 6 Conceptual Diagram of Port Lands Flood Protection Project Area



The completion of the Port Lands Flood Protection project will enable redevelopment of the lands north of the Ship Channel in the Port Lands, as well as the redevelopment of the proposed Unilever Precinct. It will also remove stable residential areas and the balance of the South of Eastern *Employment Area* from the flood plain. The proposed project plan will provide substantial recreational and environmental benefits through the creation of new parks, naturalized areas and wildlife habitats.

Due Diligence Review

The due diligence review process for the Port Lands Flood Protection project was initiated in 2015 at the request of the government partners. Waterfront Toronto produced the due diligence report in collaboration with the City of Toronto, TRCA and TPLC. The final report is provided as an attachment to this report.

The due diligence review involved a consultant team with expertise in large-scale project procurement and project management, environmental and civil engineering, risk management, design and construction, flood projection modelling/analysis and mitigation, costing and economic and real estate market analysis. Two qualified peer reviewers provided comments on the findings: Rijkswaterstaat Ministry of Infrastructure and the Environment (the Netherlands) and Kiewit Corporation.

The due diligence report provides information regarding flood protection infrastructure design, the site investigation program, soil and groundwater conditions, options and technologies for remediation and management, and a community-based risk assessment to properly evaluate and manage environmental risks. The report summarizes costs and benefits associated with the project, and also recommends a proposed scope, budget, and schedule.

Key Findings

The due diligence review identifies a number of outcomes associated with the project based on expert analysis and precedents in other jurisdictions, including:

- Protect against the potential loss of human life as a result of a catastrophic flooding at the Mouth of the Don River.
- Mitigate the risk of flooding in Toronto neighbourhoods through building strategic infrastructure.
- Reduce the financial risks to governments relating to the potential loss of property and rebuilding due to flood damage, as flood protection has been demonstrated to mitigate damages equal to five times the value of the initial investment, based on precedents in Australia, the United States, the United Kingdom and Canada.
- Manage existing soil, groundwater and water contaminants from historical industrial uses and fill placement.
- Contribute to a healthier Lake Ontario by providing important ecological systems through the creation of new terrestrial and aquatic habitat connections. (The

naturalized connection of the mouth of the Don River is recognized as a key step in delisting Toronto as an "Area of Concern" by Environment Canada.)

- Help achieve local, provincial and federal policy objectives for climate change mitigation and improved climate resiliency.
- Enable the development of sustainable mixed-use communities close to downtown employment areas, which serve the city's growing population and economy.
- Revitalize Toronto's eastern waterfront by developing high quality parks and open space, improved east-west connectivity and other new uses.
- Maintain the vitality of Toronto's working port.

A study conducted by urbanMetrics Incorporated as a part of the due diligence review states that the design and construction of the project will generate \$1.1 billion of value added to the Canadian economy, 10,800 person years of employment and \$373 million of taxes for the three orders of government. Once complete, additional economic benefits will be derived from new commercial and retail development in the Port Lands and South of Eastern area.

Project Scope & Budget

The scope of the Port Lands Flood Protection project identified through the due diligence review includes permanent flood protection through the creation of a new, naturalized mouth of the Don River and other significant flood protection measures (e.g., river valley, wetlands, natural habitat, sediment management facility and other structures), as well as essential municipal services (e.g., water distribution, wastewater/stormwater collection and roadways), streets, bridges, parkland development and environmental remediation in the Port Lands that must be undertaken concurrently with the flood protection for technical and logistical reasons. These priority items will allow for development of the Villiers Island precinct, the proposed Unilever Precinct and other adjacent development areas.

The due diligence report provides an updated cost estimate of \$1.25 billion (YOE) for the Port Lands Flood Protection project. The estimate comprises all hard (construction) and soft costs, applicable taxes and a 30 per cent contingency, including an allowance for expected escalation to the proposed year of expenditure. A third party cost risk assessment concluded that the project has a 90 per cent probability of being completed at or below this estimate.

Summary of Changes to Project Scope & Budget

The scope and budget for the Flood Protection Project have evolved in response to new information and additional requirements, identified since Council first approved the Port Lands Acceleration Initiative in 2012.

The 2012 report provided a budget estimate of \$1.06 billion (in 2012 dollars) for work associated with Villiers Island (previously known as Cousins Quay), Polson's Quay and

the Film Studio District. An updated project cost estimate of \$975 million was provided in 2014, based on a revised scope for the project, which excluded Polson's Quay. This estimate was escalated to year of expenditure.

The current budget estimate of \$1.25 billion (YOE) represents a net increase of \$275 million from the previous estimate of \$975 million (YOE) provided in 2014 (Figure 7).

The increase is in part due to more detailed and reliable data concerning site conditions and technical requirements for the river valley system and the Don Greenway. Challenges were identified with existing soil conditions (e.g., flowing sands and compressible peat) from borehole and soil sampling. The due diligence review also identified a need for enhanced erosion control and risk management measures in groundwork. These factors significantly increased the costs related to soil excavation, soil and groundwater treatment and handling/import of material, from \$128 million to \$486 million YOE.

The current estimate also reflects for minor scope changes, including both additions (e.g., changes to flood protection grading) and reductions/deferrals of non-essential components that do not impact the core objectives of the project. It also accounts for cost escalation (e.g., inflationary increases) of approximately \$50 million since 2014.

Figure 7 Variance between 2014 and 2016 Cost Estimates (also shown in Figure 2)

Factor	Impact
Price escalation between 2014 and 2016	+\$50 million
Additional costs related to poor soil conditions and related groundwork requirements	+\$358 million
Scope changes, including minor additions and reductions/deferrals to individual project components	-\$133 million
Net Variance	+\$275 million

Tri-Government Funding

The first phase of waterfront revitalization has been supported by an equal cost-sharing arrangement between the Government of Canada, Province of Ontario and the City. Assuming a similar arrangement for the Port Lands Flood Protection project, each order of government would commit approximately \$417 million of the total \$1.25 (YOE) estimated cost.

The Mayor and City staff have been in discussions with the federal and provincial governments concerning future infrastructure funding programs as a potential funding source for flood protection. The details of the next round of cost-sharing infrastructure programs are likely to be made public in early 2017, as part of the federal and provincial budgets.

To meet the proposed schedule for the Port Lands Flood Protection project it is important to arrive at a tri-government consensus on project funding by 2017 Q2. Therefore, this

report recommends that the Mayor and senior City staff be directed to request Government of Canada and Province of Ontario funding commitments by that date.

City staff will need to make submissions required by Government of Canada and/or Province of Ontario funding programs. This report recommends that staff be authorized to make these submissions, and to report back on all details related to the tri-government funding of the project, including conditions of any federal/provincial contribution agreements.

Funding and Financing the City's Share of Port Lands Flood Protection

Financing

As discussed in the Financial Impact section of this report, financing is required when revenues lag behind the expected timing of costs, as in the case of the Port Lands. Therefore, the City will need to borrow the funds necessary for initial infrastructure expenditures.

An assessment of this borrowing on the City's overall debt level will be completed as part of the 2017 – 2026 capital budgeting and planning process. As noted in the Financial Impact section, the project debt is expected to be recovered from development charges and land sales with utility rates and/or taxation acting as the revenue source of last resort. There may however be timing differences between when debt repayments are required and when these revenues materialize. Accordingly, these potential impacts will be assessed as part of the budget process.

Funding

The City's estimated \$417 million (year of expenditure \$) share of Flood Protection costs will potentially be funded from a combination of development charges, land sales, user rate revenues and, lastly, taxation.

Additional Infrastructure Investments in the Port Lands and Port Lands Business Plan Update

It is important to note that the scope of the Port Lands Flood Protection project does not include additional infrastructure required to achieve the land sales revenues in Villiers Island or portions of the Film Studio District precincts over the 2017 to 2042 planning period. Nor does it include additional infrastructure investment needed for the full redevelopment of the balance of the Port Lands or desired employment intensification in the South of Eastern area. According to City Planning staff, supported in part by their consultants, in order for redevelopment to occur in these areas, there are additional infrastructure improvements needed. These additional infrastructure improvements will be addressed in a subsequent report in early 2017.

A key component of these additional costs, as summarized below, is the provision of high order public transit to enable workers and residents to move in and out of the area. As an

interim measure, and to reduce initial upfront costs, buses in dedicated rights-of-way will operate in a manner that is comparable to Bus Rapid Transit (BRT). As redevelopment proceeds, these dedicated rights-of-way will be converted to accommodate streetcar service that will effectively operate like Light Rail Transit (LRT). Early stage transportation planning for the area assumes bus service in dedicated rights-of-way by 2023 with a transition to streetcar service over the 2033 to 2042 timeframe. It is also assumed that two-thirds of funding for transit investments in the Port Lands will be provided through federal and provincial contributions.

Additionally, there is the need for infrastructure investment to achieve land sales such as new water and wastewater infrastructure, dock wall upgrades and streets, which are not included in the scope of the Port Lands Flood Protection project.

Funding will also be required for community infrastructure to provide necessary municipal services to new residents and businesses, such as fire protection, child care, parkland and community centres. Local services costs for private lands are assumed to be borne by private developers and local services for publicly owned land are borne by the City. A summary of preliminary cost estimates for these infrastructure investments related to redevelopment in Villiers Island and portions of the Film Studio District is provided in Figure 8.

Figure 8 Preliminary Cost Estimates of Port Lands Infrastructure for Villiers Island and Film Studio District for the 2017-2042 time period (millions, YOY)

	Estimated Gross Cost	Assumed Provincial and Federal Funding	Estimated Direct Developer Share	City & Others			
				Total	2017-2026	2027-2036	2037-2042
Flood Protection and Enabling Infrastructure	\$1,250	\$833	-	\$417	\$417	-	-
Balance of Major Infrastructure ¹	\$497	-	-	\$497	\$103	\$375	\$18
High Order Surface Transit ²	\$538	\$358	-	\$179	\$10	\$48	\$121
Community Infrastructure ³	\$352	-	-	\$352	\$47	\$274	\$31
Local Services ⁴	\$206	-	\$58	\$148	\$13	\$135	-
Total	\$2,843	\$1,192	\$58	\$1,593	\$590	\$833	\$170

Notes:

- (1) Balance of major infrastructure (e.g. roads, water, sewers) located within Port Lands and not part of Flood Protection. Preliminary estimates from City Planning to be confirmed in subsequent report in 2017.
- (2) Assumes BRT by 2023, streetcar service within the 2023-2042 timeframe, and two-thirds provincial and federal funding. Excludes costs associated with East Bayfront LRT connection.
- (3) Preliminary estimates prepared by City Planning, in consultation with City Divisions.
- (4) Preliminary estimates of local service costs, prepared by Waterfront Toronto, required to be in place to achieve C&W forecast land sales revenues. Assumes local service costs for private lands are borne by the developer, and local service costs for publicly owned land are borne by the City. Revenues from the sale of City lands would be lower than projected if the lands are unserved.

These planning assumptions and related cost estimates are being confirmed through the Port Lands Planning Framework and Port Lands and South of Eastern Transportation and Servicing Master Plan. Additionally, all remaining infrastructure-related costs will also be addressed for the balance of redevelopment in the Port Lands and South of Eastern area. Transit planning will be addressed in phase two of the Waterfront Transit Reset, to conclude with a staff report in 2017 Q2.

A preliminary analysis was completed to compare the future cash flows of the estimated City share of Port Lands Flood Protection project and additional infrastructure required to achieve land sales in Villiers Island and portions of the Film Studio District, to be funded by the City and other parties. The analysis includes potential recoveries that could be achieved through development charges, net of statutory deductions and statutory and discretionary exemptions, based on an analysis prepared by Hemson Consulting. It also includes potential revenues from land sales as per the analysis conducted by Cushman and Wakefield for a "High Scenario" (\$432 million YOE), net of 20 per cent City-owned land being dedicated for affordable housing (\$76 million).

As the recoveries will occur over a long period of time, whereas many of the costs will be incurred at the beginning of the project, it is necessary to adjust all of the cash flow amounts to present values so that the total recoveries and expenditures can be compared on a consistent basis. Present values are determined by adjusting the future cash flows using a discount rate that is based on the City's cost of capital and also on a risk premium that adjusts for the risk that the forecast land sales revenues may not be fully realized.

The results of the analysis are shown in Figure 9, in both year-of-expenditure and present value terms.

Figure 9 Comparison of Port Lands Cash Flow Model Results Preliminary Estimates (millions)

Component	Year-of-Expenditure Value	Present Value
Estimated Port Lands Infrastructure Costs - City & Others (2017-2023)	(\$1,593)	(\$1,038)
Potential Development Charges Revenues (2017-2046) ¹	\$993	\$488
Potential Land Sales Revenues (2023-2042) ²	\$355	\$96
Total	(\$244)	(\$453)

(1) Estimated development charges revenues are net of statutory deductions, and statutory and discretionary exemptions, includes recovery of potential financing charges, and are based on an analysis prepared by Hemson Consulting.

(2) Estimated land sales revenues of City-owned land is based on a Cushman and Wakefield Revenue Projections Update, High Scenario (\$432 million), net of 20 per cent land for affordable housing.

As a part of preparation of the Port Lands Business Plan, an updated comparison will be carried out between the overall cost of preparing the Port Lands for redevelopment and the development-related revenues and other sources that the City can raise to offset these costs, which will be provided to Council in a subsequent staff report in 2017. As the Port

Lands project moves forward, a process of more detailed design will give greater certainty to the costs, the form of development and revenues.

Essroc Quay Lake Filling and Naturalization

In September 2016, the Government of Canada, Province of Ontario and the City announced a proposed \$65 million in joint (50/25/25) funding to support the Essroc Quay Lake Filling and Naturalization project. Essroc Quay is a self-contained storm water management project that be implemented immediately. While Essroc Quay is a key component of flood protection in the Port Lands, the full scope of work is necessary to provide effective flood protection across the project area.

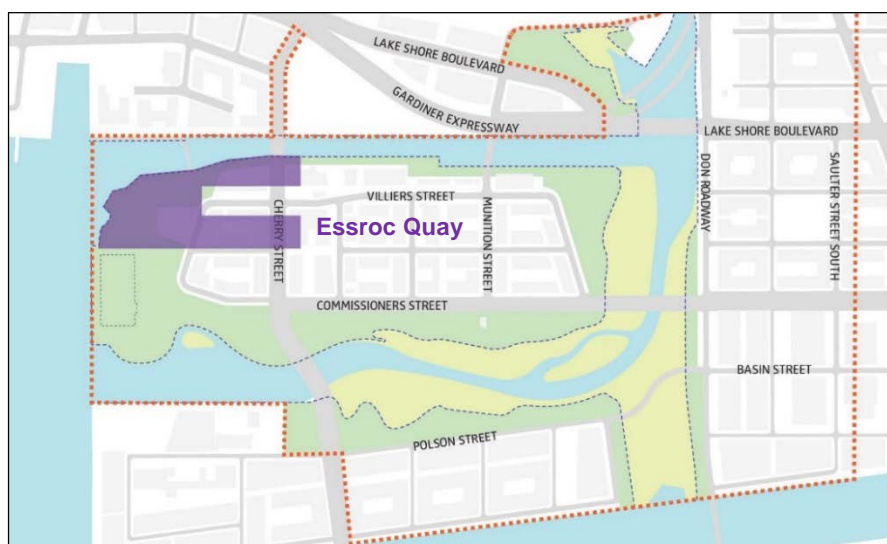
Essroc Quay is located on the south side of the Keating Channel, where it meets Toronto’s Inner Harbour (Figure 10). The project will create new landmass around the current Essroc Quay through lake filling and stabilize the area shoreline to prevent collapse during flood conditions.

Infilling Essroc Quay is an important element of safely conveying storm water at the mouth of the Don River. It is necessary to facilitate the future re-alignment of Cherry Street and construction of a new bridge with a higher span over the Keating Channel. The existing span of the Cherry Street Bridge restricts effective conveyance of storm water.

The project will improve water quality, optimize water and storm infrastructure, and create new naturalized open spaces and aquatic habitat. It will enhance aquatic habitat and ultimately form part of the proposed Promontory Park. Completing this work will also accommodate the construction of roads and transit into the Port Lands as part of the economic revitalization of this area.

Staff will provide recommendations for necessary Zoning By-Law amendments to enable the Essroc Quay project in a report to PGM Committee in early 2017.

Figure 10 Essroc Quay Lake Filling and Naturalization Project Area



Tri-Government Funding for Essroc Quay

This report recommends that City Council approve \$16.250 million in capital funding for the Essroc Quay Lake Filling and Naturalization project as a priority under the federal Clean Water and Wastewater Fund (CWWF), which will receive committed matching federal and provincial funding.

In March 2016 the Government of Canada announced details on the CWWF which provides up to 50 per cent of eligible costs for capital planning and infrastructure projects related to water, storm water and wastewater. The Province of Ontario will contribute additional funding for up to 25 per cent of eligible costs, with municipalities expected to provide funding for the remaining 25 per cent of costs.

A Canada-Ontario bilateral agreement for the CWWF was signed in August 2016 which outlines that eligible project costs must be incurred between April 1, 2016 and March 31, 2018 or March 31, 2019 if there is demonstrated need. Projects are also required to be incremental, meaning that they would not have been undertaken in 2016-17 or 2017-18 and/or would not have been undertaken without federal funding. This includes projects included in the City's 2016-2025 Capital Budget and Plan where projects require additional funding to proceed and/or accelerate.

As per Council direction, City and Waterfront Toronto staff identified Essroc Quay as a priority for CWWF funding due to its ability to be advanced as a standalone project within the broader Port Lands Flood Protection project and its ability to meet stringent program criteria including completion by March 31, 2019. Essroc Quay has also been recognized by provincial and federal governments as eligible under the CWWF.

Additional terms and conditions for the CWWF will be outlined by the Province of Ontario in a Transfer Payment Agreement which will govern the flow of funds to the City. City staff will report to City Council and request the authority to enter into this TPA with the Province in late 2016 once terms and conditions are available for consideration.

Project Management & Governance

A project management and governance structure for the Port Lands Flood Protection project and the Essroc Quay project is already in place. Project management will be provided by Waterfront Toronto to leverage their capacity and expertise with respect to the revitalization of Toronto's waterfront. Implementation will be undertaken in close cooperation City divisions and agencies, TRCA and other project partners through the Port Lands Executive Steering Committee.

As with other waterfront projects, strategic direction and executive oversight for the project will be provided by the waterfront revitalization Intergovernmental Steering Committee. These functions will ensure a high level of coordination within the Port Lands and for other projects in the vicinity and will ensure that the terms and conditions of the CWWF and other funding programs are met.

Conclusion

The Port Lands Flood Protection project represents a vital investment in flood protection for southeastern neighbourhoods of downtown Toronto and the revitalization of the Port Lands district. The project will involve the creation of a new, naturalized mouth for the Don River and other significant flood protection measures. It will significantly enhance the safety of life and property in at-risk neighbourhoods in the event of a catastrophic flooding event.

The project will unlock new development in the Port Lands and adjacent properties critically needed to address long-term growth pressures and support economic development opportunities. The project will also provide substantial recreational and environmental benefits through the remediation of currently contaminated lands and the creation of new parks, naturalized areas and wildlife habitats.

Based on the revised scope described in attached due diligence report, the project has an estimated budget of \$1.25 billion and will take seven years to complete, with construction to commence as early as the end of 2017. This report recommends a tri-governmental approach to funding the Port Lands Flood Protection project, as a renewed commitment by all orders of government to the revitalization of Toronto's waterfront.

The proposed \$65 million Essroc Quay project, announced by the three orders of government in September 2016 represents a meaningful first step to advancing flood protection in the Port Lands. Conditional on Council support of the recommendations in this report, it will be commenced right away, independent of the larger scope of work for the Port Lands Flood Protection project.

To meet the proposed schedule for the full scope of the Port Lands Flood Protection project, this report recommends that the Mayor and City staff work with the Province and the Government of Canada to establish agreement on project funding by early 2017. Following negotiations with the other orders of government, staff will report back on the terms for funding contributions.

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ATTACHMENTS

Attachment 1: Port Lands Flood Protection and Enabling Infrastructure Due Diligence
Report