

Port Lands Flood Protection - Update

Date: April 18, 2023

To: Executive Committee

From: Deputy City Manager, Infrastructure and Development Services

Wards: Toronto-Danforth, Spadina-Fort York

SUMMARY

This report provides a comprehensive update on the Port Lands Flood Protection project and the next steps for unlocking related future development.

Specifically, it outlines the next steps in completing flood protection, provides an update on new City assets being developed as a part of this work and their anticipated operating and maintenance costs, and provides directions on issues that will be considered as part of future reports and budget submissions. Anticipated milestones covered in this report are as follows:

- Substantial completion of Port Lands Flood Protection by the end of 2024 and expected opening of parks and public realm in 2025 (with possible opening in phases);
- Dredging the accumulated backlog of sediment from the Keating Channel from 2023 to 2026;
- Asset handover to the City (2023-2025) of Port Lands Flood Protection assets and refinement of long-term operating costs for assets and ongoing dredging of the Don River and Keating Channel to be updated as part of the 2024 and future budget processes; and
- By Q4 2024, updates to be reported to City Council on the foundational investments required as development proceeds (post-2025) to ensure continued flood protection and to unlock the value of public lands.

Completion of flood protection and associated projects, as described in this report, will provide enabling servicing for Villiers Island and are a prerequisite for future development and planning work that is underway.

Construction of Port Lands Flood Protection will generate \$1.1 billion in value to the Canadian economy, over 10,000 person years of employment, and over \$370 million in government tax revenues while setting the foundation for new housing, employment, and public land uses close to Downtown Toronto.

1. Port Lands Flood Protection

Port Lands Flood Protection is one of North America's most significant urban regeneration projects. Together with associated projects, it will flood protect over 240 hectares of land in the Port Lands and the South of Eastern neighbourhoods. It includes 23 separate sub-projects and, in addition to flood protection, is anticipated to remediate contaminated land, deliver new bridges, infrastructure and public parks, and create a new naturalized mouth of the Don River. Flood protection infrastructure is the cornerstone of the City of Toronto's plans to renew and revitalize the central waterfront.

The Government of Canada, Province of Ontario and City of Toronto approved \$1.25 billion in flood protection funding in 2016 and 2017 to Waterfront Toronto as the tri-government corporation responsible for project delivery. Work is being done in close collaboration between Waterfront Toronto, the City, CreateTO, the Toronto and Region Conservation Authority, and other utilities and agencies, including coordinating capital projects in the lower Don River area. Port Lands Flood Protection construction began in 2016, and the project is well underway; it is anticipated to be substantially completed by the end of 2024.

The Port Lands Flood Protection project was guided by two Environmental Assessments and an extensive Due Diligence program which ultimately determined the government-approved scope and budget. The project has been undertaken with a continuous and ongoing program to reduce and mitigate risks (e.g., with soils and utility relocations) and reduce costs associated with the project scope. Risk mitigation includes oversight by the Waterfront Toronto Board of Directors and various government-led oversight and steering committees that govern the project's contribution agreements. Program oversight is supported by the senior staff Intergovernmental Steering Committee (IGSC).

In 2022 Waterfront Toronto began to identify and report significant risks to the project budget, given inflationary pressures and the remaining contingency available. As with many large ongoing infrastructure projects, Port Lands Flood Protection is facing significant challenges due to supply chain disruptions, cost inflation, labour issues in the construction industry, and global economic uncertainty brought on by continued COVID-19 impacts and geopolitical instability. The rationale provided by Waterfront Toronto is consistent with current conditions experienced by the City through the planning and execution of its major capital projects.

Over the last six months, government partners and Waterfront Toronto have collaboratively reviewed needs, alternatives, risks, and funding options for this significant project. The partnership has resulted in a recommended solution which preserves the original objectives of Port Lands Flood Protection while providing additional funding contributions over time. The recommended approach identifies incremental funding of up to \$169 million from governments and Waterfront Toronto, restructures contribution agreements, and balances fiscal impacts to governments while meeting shared public policy objectives. The proposed incremental funding is approximately 13.5 percent of the total \$1.25 billion government commitments and includes \$63 million in contingency to the end of 2024. The City's recommended share

is \$55.2 million (approximately one-third, aligned with this project's original cost-sharing principle).

The recommended solution is currently going through formal approvals at all orders of government with appropriate approvals having already been received from the Waterfront Toronto Board of Directors. Subject to City Council approval, the recommended solution would advance the Port Lands towards its transformational opportunities, including disaster mitigation, economic development, and unlocking new flood-protected lands for housing supply.

2. Port Lands Enabling Infrastructure Implementation

Alongside the completion of flood protection, City staff and partners at Waterfront Toronto and the Toronto and Region Conservation Authority continue to advance implementation of a tranche of enabling infrastructure as part of the flood protection project. Implementation includes updating the anticipated operating costs for new assets being delivered to the City, and the roles and responsibilities related to ownership and ongoing management.

New City assets will include:

- Four new bridges, two at Cherry Street North over the Keating Channel, Cherry Street Bridge South, and Commissioners Street Bridge;
- A rebuilt Lake Shore Boulevard East bridge over the Don River;
- Reconstructed Commissioners Street, which will be widened for future Light Rapid Transit;
- A rebuilt Don Roadway (with a new valley wall);
- A completely realigned Cherry Street;
- New water, sanitary and stormwater infrastructure, along with expanded cycling and pedestrian infrastructure along Cherry Street and Commissioners Street;
- Promontory Park South, and River Parks North and South;
- The Sediment and Debris Management Area, including sediment trap, space allocated for on-shore sediment and debris sorting and equipment and materials handling;
- A connection for the Lower Don Trail, a regional cycling route; and
- New flood protection landforms and river valley.

The Port Lands Flood Protection and enabling infrastructure within New Cherry Street and Commissioners Street provide the servicing framework for the future development blocks on Villiers Island. This report provides an overview of estimated timelines for the anticipated handover of the road, bridge, park, and unique assets and the preliminary projected financial impacts to the annual operating budgets of City divisions over ten-years.

Asset Ownership and Handovers

Several City divisions, including Parks, Forestry and Recreation, Toronto Water, and Transportation Services, will be responsible for owning, operating, and maintaining the enabling infrastructure created through Port Lands Flood Protection. Operations and maintenance will be informed by Handover Protocols which will provide guidelines

regarding the transfer of individual assets. Assets are to be transferred over three-years from 2023-2025. City staff recommend that City Council provide delegated authority to the Deputy City Manager, Infrastructure and Development Services or designate to enter into these handover protocol agreements.

Many assets, including roads, bridges, utilities, and parks, will follow standardized approaches to handover. In addition to this, the City may need to enter into operating agreements with Waterfront Toronto for a period of time before assumption. This is due to the dynamic nature of the Port Lands Flood Protection project, where assets will come online over time. City staff recommend that City Council provide delegated authority to the Deputy City Manager, Infrastructure and Development Services or designate to enter into agreements with Waterfront Toronto that may be required to operate City assets until formal City assumption.

Specific approaches are being developed for the unique assets the City will own, including the river valley, flood protection landforms, dockwalls, and sediment management, which will require non-standard acceptance and operational arrangements supported by the experience of the Toronto and Region Conservation Authority. City staff will report further on this matter by Q4 2024.

Asset Operating and Maintenance Costs

A number of manuals have been developed by Waterfront Toronto and consulting teams, in cooperation with City divisions to guide future operations and maintenance (O&M). These manuals will aid City staff in delivering operations and maintenance for standard and unique Port Lands Flood Protection assets and inform operating cost requirements.

In collaboration with Waterfront Toronto and Toronto and Region Conservation Authority and using the best available information, City staff have developed a preliminary forecast of incremental operating and maintenance costs. Over ten years and for all assets, the average operating and maintenance costs is estimated to be \$7.7 million per year. The timing of expenditures will depend on when specific assets are handed over to the City. The figures provided are preliminary and, in some cases, need to be market tested.

Further analysis of the costs is necessary to protect this tri-government capital investment through operations and maintenance, programming, and state-of-good repair funding. Operating impacts will be reviewed annually to account for any revisions to operations and maintenance practices and market rates. City staff will update and include these operating costs as part of future budget processes.

Real Estate Matters

Given the complexity of the Port Lands Flood Protection project, Waterfront Toronto's role in negotiating property acquisition terms, the number of anticipated transactions, and the critical timelines associated with project completion and handover, City staff, in consultation with CreateTO staff, are recommending a limited delegated authority to approve real estate transactions in connection with the implementation of Port Lands

Flood Protection to the Executive Director, Corporate Real Estate Management, in consultation with the head of the City division to have operational management of the affected land or any affected Port Lands Flood Protection asset.

3. Sediment and Debris Removal in the Don River and Keating Channel

Runoff, sediment, and debris collect in the Don River and are carried downstream and deposited into the lower Don River and Keating Channel. Dredged material is currently transported by boat to the Leslie Street Spit and disposed of in a Confined Disposal Facility in accordance with environmental approvals.

Removal of sediment and debris is outlined in two sections, one describing work required to clear an accumulated sediment backlog and the second describing the long-term dredging operation required to maintain flood protection.

Clearing the Accumulated Backlog

The City, Waterfront Toronto, the Toronto and Region Conservation Authority, and PortsToronto have developed a proposed program to remove the accumulated sediment from Keating Channel, subject to approvals. Accumulation has occurred over a number of decades due to fixed dredging budgets that did not adjust to fully address the removal of actual sediment volumes deposited in the channel annually. It is anticipated that the backlog (including annual accumulation over the next two years) in the Keating Channel is between 180,000 to 220,000 cubic metres of excess sediment which will need to be removed. Removal would ensure the Keating Channel achieves its specified design depth and can work together with other flood protection measures being put into place.

Waterfront Toronto would implement the first of two phases of accumulated sediment removal in the summer of 2023 to facilitate Port Lands Flood Protection construction which is anticipated to cost \$10 million. Phase one would be funded upfront by Waterfront Toronto and/or other parties, with the City to provide reimbursement in the 2024 and 2025 budget years, subject to approvals. The City and the Toronto and Region Conservation Authority would lead a second phase in 2024 and continue dredging activities to maximize channel flows and flood protection benefits until full design depth is achieved.

An early estimate for the total cost to remove all accumulated material was \$24 million which includes work under phase one and phase two. However, additional due diligence is required to update and confirm the total cost. The total cost and the final City share will require further analysis of volumes, environmental monitoring, and cost-sharing by other orders of governments and agencies and will be reported on as part of the 2024 budget process. In order to ensure flood protection is achieved, City staff recommend that City Council approve in principle both phases of the plan to clear the accumulated backlog, subject to the approval of future year budget submissions.

Long-Term Dredging Assets and Operations

Despite various efforts to manage stormwater and development upstream in the region, this issue will continue and require a permanent, ongoing annual program to remove sediment and debris. After Port Lands Flood Protection is completed, flood waters will

be directed through the new mouth of the Don River, the Keating Channel, and the new Don River 'spillway.' Keating Channel, which PortsToronto owns, will convey the majority of overflow in a flood event. Sediment will need to be regularly dredged from the Don River and at least every two years from the Keating Channel to maintain sufficient flow.

Following the completion of Port Lands Flood Protection, annual sediment and debris removal operations will occur from a newly created Sediment and Debris Management Area north of the Lake Shore Boulevard East Bridge. City staff are finalizing a long-term plan for the mechanical dredging operations to start following the delivery of the interim Sediment and Debris Management Area.

Mechanical dredging is currently the most efficient method of dredging from both a cost and operational perspective. City staff in consultation with the Toronto and Region Conservation Authority and other partners will continue refining the long-term operations and maintenance plans and costing and report to City Council with recommendations by Q4 2024.

4. Next Steps for Implementation

Port Lands Flood Protection will unlock significant value in the port lands, with future development leading to an estimated \$4 billion economic impact. Much of this value will be realized on City, CreateTO, and other public lands.

In addition to dredging, a number of associated projects will need to be completed as development proceeds, including the Sediment and Debris Management Area to its 'final' condition starting in 2030-31, PortsToronto land acquisitions for Promontory Park North, and the management of excess soils on development sites.

Unlocking the full development potential of the Port Lands depends on the completion of flood protection and parks and the public realm as outlined above. However, the Port Lands Flood Protection project and its enabling infrastructure is only a beginning, delivering the infrastructure required to enable flood protection and establish the major streets and servicing.

Separately, City staff are currently working with Waterfront Toronto and CreateTO to evaluate the impacts of an increased population density on the infrastructure and will assess options to support increased population densities if limiting constraints are identified. The infrastructure and community services, which was to be constructed independently after the flood protection and enabling works, will now be considered to realize the vision of a new, connected, climate-positive, and complete community on the Island that will be home to thousands of Torontonians.

The City, other governments and appropriate agencies are reviewing the steps required to unlock this potential. City staff will report on the next steps by Q4 2024, including within future reports on the update to the Villiers Island Precinct Plan and the Next Phase of Waterfront Revitalization.

RECOMMENDATIONS

The Deputy City Manager, Infrastructure and Development Services recommends that:

Port Lands Flood Protection

1. City Council approve, in principle, the updated funding strategy for Port Lands Flood Protection, and authorize the Deputy City Manager, Infrastructure and Development Services or designate, in consultation with the Chief Financial Officer and Treasurer, to negotiate and execute an amended tri-government Contribution Agreement for the Port Lands Flood Protection project and a new Project Delivery Agreement for parks and public realm with Waterfront Toronto, in a form acceptable to the City Solicitor, based upon the principles set forth in the term sheets attached as Attachments 2 and 3 to the report (April 18, 2023) from the Deputy City Manager, Infrastructure and Development Services.

Port Lands Enabling Infrastructure Implementation

2. City Council authorize the Executive Director, Corporate Real Estate Management to approve real estate transactions in connection with the implementation of the Port Lands Flood Protection project, on terms satisfactory to the Executive Director, Corporate Real Estate Management, in consultation with the head of the City division to have operational management of the affected land or any affected Port Lands Flood Protection asset, with all associated agreements to be in a form satisfactory to the City Solicitor.

3. City Council authorize severally each of the Deputy City Manager, Corporate Services, the Executive Director, Corporate Real Estate Management, and the Director, Transaction Services, to execute agreements and other documents relating to the transactions identified in Recommendation 4 on behalf of the City.

4. City Council authorize the Deputy City Manager, Infrastructure and Development Services or designate to negotiate and execute Handover Protocol Agreements with Waterfront Toronto on terms and conditions satisfactory to the Deputy City Manager in consultation with the relevant division heads and in a form satisfactory to the City Solicitor for the effective and efficient acceptance and transfer of and the assumption by the City of responsibility for the operation and maintenance of municipal roads, bridges, public utilities, parks, open spaces, and unique infrastructure assets that are being constructed as part of the Port Lands Flood Protection project, based upon the principles set forth in the term sheet attached as Attachment 4 to the report (April 18, 2023) from the Deputy City Manager, Infrastructure and Development Services.

5. City Council authorize the Deputy City Manager, Infrastructure and Development Services or designate, subject to funding being available in an approved Budget, and upon terms and conditions satisfactory to the City Solicitor, to enter into agreements with Waterfront Toronto as may be required for the operation and maintenance of assets constructed as part of the Port Lands Flood Protection project, for the asset warranty period following acceptance by the City.

Sediment and Debris Removal

6. City Council approve, in principle, phase one and phase two of the One-Time Backlog Keating Channel Dredging Program as outlined in Attachment 5 to the report (April 18, 2023) from the Deputy City Manager, Infrastructure and Development Services, subject to funding in the 2024 Budget.

7. City Council authorize the Deputy City Manager, Infrastructure and Development Services or designate, in consultation with the Chief Financial Officer and Treasurer, to negotiate and execute required agreements with Waterfront Toronto, the Toronto and Region Conservation Authority, PortsToronto or other parties for the One-Time Backlog Keating Channel Dredging Program, as outlined in Attachment 5 to the report (April 18, 2023) from the Deputy City Manager, Infrastructure and Development Services, in a form acceptable to the City Solicitor.

FINANCIAL IMPACT

The approved Tri-Government Flood Protection Program (Port Lands Flood Protection, and Cherry St Stormwater and Lakefilling project) is \$1.25 billion, with the City's one third sharing being \$416.67. The incremental costs related to this project are estimated at \$169.00 million, with \$10.00 million being contributed from Waterfront Toronto, and \$103.80 million in contributions with the Federal and Provincial governments. The required City share of \$55.2 million will contribute towards the capital costs for Flood Protection and Parks and Public Realm (\$22.70 million and \$32.50 million respectively).

The recommended solution is currently going through formal approvals at Federal and Provincial governments, including Ministerial approvals as appropriate.

Furthermore, additional funding is required for the sediment and debris removal in the Don River and Keating Channel under a two phase Dredging Program with an early estimate to be \$24 million, with the total cost to the City to be determined based on further assessments and cost-sharing by other governments and other parties.

Waterfront Secretariat will include the incremental capital costs noted above for the Mayor's consideration in preparing the 2024-2033 Capital Budget and Plan, with the recommended solution ultimately subject to approval of the City's 2024 budget.

Preliminary future year City operating costs relating to Port Lands Flood Protection assets (detailed below) range from \$6.2 million to \$9.5 million at maturity. Aligned with the handover of assets, City Divisions will include operating impacts for the Mayor's consideration in preparing the future Operating Budgets.

1. Port Lands Flood Protection

The flood protection program is comprised of budgets approved through the 2017 \$1.185 billion tri-government Contribution Agreement for Port Lands Flood Protection,

the 2016 \$65 million tri-government Cherry St Stormwater and Lakefilling project (a quick start related to the larger project) and the recommended incremental contributions as outlined in this report, which will further support flood protection and park and public realm components.

Subject to Council approval of the recommended solution and required 2024 budget approval, the revised City budget will be as outlined in Figure 1.

Figure 1: Revised Flood Protection Budget, Subject to Approval

	2017-2023	2024	2025	Totals
Port Lands Flood Protection (Approved 2017-2023 Budgets)	336.20	64.22	-	400.42
Cherry St Stormwater and Lakefilling (Approved 2016-2017 Budget)	16.25	-	-	16.25
Recommended Incremental 2024-2025 City Contribution (Additional funding for flood protection, and parks and public realm)	-	27.60	27.60	55.20
Total City Budget for the program	352.45	91.82	27.60	471.87

Approval of the recommended solution by all governments will result in the following updated cost sharing for the program, as outlined in Figure 2.

The recommended solution is currently going through formal approvals at Federal and Provincial governments, including Ministerial approvals as appropriate. The Waterfront Toronto board approved its contribution of \$10 million at its March 27, 2023, meeting. Waterfront Toronto's contribution of \$10 million recognizes that Port Lands Flood Protection is a core priority.

Figure 2: Updated Flood Protection Cost Sharing, Subject to Approvals

Component/Contribution (millions \$)	Federal	Provincial	City	Waterfront Toronto	Total
Secured Funding					
2017 Port Lands Flood Protection Tri-Government Contribution Agreement	384.16	400.42	400.42	-	1,185.00
2016 Cherry St. Lakefilling	32.50	16.25	16.25	-	65.00
Subject to Approvals					

Component/Contribution (millions \$)	Federal	Provincial	City	Waterfront Toronto	Total
Recommended 2024-2025 Flood Protection Contribution	-	55.20*	22.70	10.00	87.90
Recommended 2024-2025 Parks and Public Realm Contribution	48.60*	-	32.50	-	81.10
Sub-Total Recommended Incremental Funding (Subject to Approvals)	48.60*	55.20*	55.20	10.00	169.00
Total (\$)	465.26	471.87	471.87	10.00	1,419.00
Total (%)	32.8	33.3	33.3	0.7	-

* subject to appropriate federal and provincial approvals. Work is underway to secure funding.

2. Port Lands Enabling Infrastructure Implementation

Preliminary City operating costs relating to Port Lands Flood Protection assets are noted below in Figure 3. The figures provided below and throughout this report outline the preliminary projected operational expenses over ten years. For illustrative purposes costs are shown starting from the first full year after handover of the assets with the actual timing of expenditures will depend on when specific assets are handed over to the City. Waterfront Toronto will deliver assets incrementally as they are completed.

The figures provided are preliminary and need to be market tested in some cases. City staff will update and include these operating costs as part of future budget processes.

Figure 3: Preliminary Estimated City Operating Costs Relating to Port Lands Flood Protection Assets

Asset (\$000s)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Roads	68	66	68	69	70	71	72	74	75	76
Bridges	47	66	48	66	48	240	49	67	50	1,176
Water, Storm, Sanitary Utilities	412	420	428	436	445	453	460	469	476	484
Parkland and Forestry Management	3,200	3,280	3,350	3,420	3,490	3,560	3,630	3,710	3,790	3,870

Asset (\$000s)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Parks, Forestry and Recreation Community Programming and Partnerships	450	1,260	1,290	1,320	1,350	1,380	1,410	1,450	1,490	1,530
Unique Infrastructure (river valley & flood mitigation infrastructure)	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400
Total	6,177	7,092	7,284	7,411	7,603	7,904	7,921	8,070	8,181	9,536

3. Sediment and Debris Removal in the Don River and Keating Channel

Accumulated Backlog Dredging Program

City staff recommend that City Council approve the dredging program in principle, subject to future year budget approvals. In principle approval of the accumulated dredging program will lead to staff doing further due diligence on the final volumes of sediment to be removed from the Keating Channel, the phasing and timing of work, cash flows, total costs, and cost-sharing with other parties. Phase one is expected to result in a financial impact to the City of approximately \$10 million. Phase one funds will be advanced in 2023 by Waterfront Toronto and/or other parties; the City will reimburse Waterfront Toronto and/or other parties in the 2024 and 2025 budget years, subject to approvals. An early estimate for the total cost to remove all accumulated material was \$24 million, with the total cost to the City to be determined based on further assessments and cost-sharing by others.

Long-Term Dredging Program

Preliminary costs for long-term dredging are noted in the body of the report. Actual expenditures and timing will be the subject of a subsequent report to City Council by Q4 2024 following further due diligence.

4. Next Steps in Implementation

Unlocking the value of public land and development will require further investments to complete the Sediment and Debris Management Area, acquisition of PortsToronto lands, the management of soils on development sites, and phased delivery of infrastructure and servicing to support developing a complete community on Villiers Island. Further due diligence is ongoing for these costs and will be reported to City Council by Q4 2024.

Overall, adopting the recommendations in this report will advance the City's commitment to consider a contribution of \$55.2 million for capital costs related to Port Lands Flood Protection, the early estimate of \$24.0 million of capital costs for the Dredging Program, and associated operating costs, which will be subject to Budget approval.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial implications as identified in the Financial Impact Section.

DECISION HISTORY

On March 21, 2023, Executive Committee adopted with amendments, item EX3.1 - Housing Action Plan 2022-2026- Priorities and Work Plan which includes work related to the Villiers Island Precinct in the Port Lands.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.CC2.1>

On July 19, 2022, City Council provided support in-principle for a further phase of waterfront revitalization, endorsed four interconnected priorities to guide a further phase, and provided direction for City officials to continue intergovernmental dialogue. The staff report summarized project types for the Next Phase of Revitalization in the central waterfront which includes affordable housing, waterfront transit, infrastructure required to support Villiers Island densities and economic development, and port lands infrastructure required to support growth in adjacent areas such as the McCleary District.

<https://secure.toronto.ca/council/agenda-item.do?item=2022.EX34.10>

On July 19, 2022, City Council authorized City staff to negotiate and execute donation and licence agreements for a new waterfront public art trail in future City parks in the Port Lands Flood Protection Area.

<https://secure.toronto.ca/council/agenda-item.do?item=2022.EC31.24>

On July 14, 2021, City Council authorized conveyance of the 'wet side' of the West Don Lands flood protection lands to the Toronto and Region Conservation Authority.

<https://secure.toronto.ca/council/agenda-item.do?item=2021.GL24.15>

On July 28, 2020, City Council authorized early acquisition of Toronto Port Lands Company land within the future boundaries of River Park North and River Park South.

<https://secure.toronto.ca/council/agenda-item.do?item=2020.GL14.12>

On June 29, 2020, City Council approved the grant of leases and licences of City property for work in connection with the Port Lands Flood Protection Project.

<https://secure.toronto.ca/council/agenda-item.do?item=2020.GL13.5>

On February 12, 2018, City Council adopted the 2018 Capital and Operating Budgets with amendments. The budget included an update on the City's contribution to Port Lands Flood Protection and authorized the Deputy City Manager - Cluster B (now

Infrastructure and Development Services) to execute required intergovernmental contribution agreements.

<https://secure.toronto.ca/council/agenda-item.do?item=2018.EX31.2>

<https://www.toronto.ca/legdocs/mmis/2018/ex/bgrd/backgroundfile-111934.pdf>

On February 15, 2017, City Council adopted the 2017 Capital and Operating Budgets with amendments. This included approval of the Port Lands Flood Protection project budget and City contribution.

<https://secure.toronto.ca/council/agenda-item.do?item=2017.EX22.2>

On November 8, 2016, City Council approved Cherry St Stormwater and Lakefilling project and requested Government of Canada and Province of Ontario Funding commitments for Port Lands Flood Protection. The staff report appended the 2016 Due Diligence report.

<https://secure.toronto.ca/council/agenda-item.do?item=2016.EX18.3>

COMMENTS

1. Port Lands Flood Protection

A Unique City Building Opportunity

As the cornerstone of the City of Toronto's plans to renew and revitalize the waterfront, the implementation of this critical flood protection infrastructure will allow the City to continue its legacy of waterfront revitalization while advancing its post-pandemic economic recovery, increasing housing opportunities, and advancing equity, reconciliation and environmental outcomes.

Through substantive tri-government investment, the Port Lands is positioned as a transformative catalyst comparable to other global waterfront revitalization projects. Upon completion, the project will flood protect approximately 240 hectares of land around the mouth of the Don River and unlock the development – and value – of lands located within the existing flood plain. Flood protection, combined with associated projects, will allow for the residential and commercial redevelopment of the Port Lands, including Villiers Island, East Harbour, McCleary, and South River districts.

Anticipated milestones for the project and next steps in implementation are as follows:

- Substantial completion of Port Lands Flood Protection by the end of 2024 and expected opening of parks and public realm in 2025 (with possible opening in phases).
- Dredging the accumulated backlog of sediment from the Keating Channel from 2023 to 2026
- Asset handover to the City (2023-2025) of Port Lands Flood Protection assets and refinement of long-term operating costs for assets and ongoing dredging of the Don River and Keating Channel to be updated as part of future budget processes.

- By Q4 2024, updates to be reported to City Council on the foundational investments required as development proceeds (post-2025) to ensure continued flood protection and to unlock the value of public lands.

Project Description

The provision of critical flood protection will be achieved through naturalizing the mouth of the Don River and establishing a natural greenway and adjacent valley wall feature located to the south of the Keating Channel. To restore the form and function of the Don River, Waterfront Toronto is undertaking the construction of 1,000 m of the new river channel and flood plain, 13 hectares (32 acres) of new coastal wetland, and four hectares (10 acres) of terrestrial habitat.

Waterfront Toronto has been delegated the procedural aspects of the Duty to Consult obligations for design and project implementation and have been leading engagement with identified Indigenous communities. Waterfront Toronto continues to work closely with the Mississaugas of the Credit First Nation, as the Host Nation for the area, and other Indigenous Communities to facilitate engagement to better inform Port Lands Flood Protection public realm design regarding Indigenous cultural considerations. The Mississaugas of the Credit First Nation has also had an active role in the monitoring archeological and environmental aspects of the project.

The naturalization of the Don River will provide crucial flood protection and ecological habitat restoration while integrating development, transportation, and servicing infrastructure into a harmonious whole. These efforts will support the rehabilitation of this iconic Toronto watershed and its complex biodiversity from generations of industrial activity that have impacted its physical, chemical, and biological form and functions.

Along with supporting infrastructure and the construction of a new river valley south of the Keating Channel, the program, as shown in Attachment 1, will:

- Improve Toronto's climate resiliency by providing flood protection to 240 hectares of the Lower Don area;
- Provide 29 hectares of parkland, wildlife habitat, and natural areas along portions of the northern and southern banks and mouth of the new river valley;
- Provide new and enhanced transportation infrastructure, including four new bridges, a realigned Cherry Street, a refurbished Lake Shore Boulevard East bridge over the Don River, and expanded and improved pedestrian and cycling facilities throughout the project area; and
- Enhance the public realm, restore and refurbish heritage structures, and provide public recreational opportunities within the Port Lands.

Project Status

Large scale construction started in 2017 and is now well advanced. Some key completed project milestones include:

- Completion of the river valley construction in the spring of 2022;
- Installation of the transit and vehicular bridges over the Keating Channel in 2020 and 2021;
- Installation of the Cherry South bridge and Commissioners Street bridge in 2022; and
- The partial opening of the realigned Cherry Street south roadway and bridge in the fall of 2022.

Construction continues on all aspects of the project. Key milestones anticipated for the remainder of 2023 include the completion of:

- The central valley plantings and habitats;
- The ice management area south of Villiers Street; and
- Opening the realigned Cherry Street north roadway and bridge from Lake Shore Boulevard south to Commissioners Street.

In addition to the above, Villiers Street is scheduled to be closed between Munitions and Don Roadway to facilitate the continuation of the river valley up to the Keating Channel and the mouth of the Don River. The existing Cherry Street lift bridge over the Keating Channel will also be removed, and Commissioners Street, including the bridge, will be partially reopened to traffic in the fall of 2023.

Based on current construction progress, substantial completion of flood protection anticipated by the end of 2024, and the public to access the river valley and parks is expected in 2025 (with possible opening in phases).

Updated Funding Strategy

The Port Lands Flood Protection project was guided by the 2014 Don Mouth Naturalization and Port Lands Flood Protection Project [Environmental Assessment](#), the 2014 Lower Don Lands [Environmental Assessment Master Plan Addendum & Environmental Study Report](#), and a 15-month extensive [Due Diligence](#) program, which ultimately determined the scope and budget put forward for governmental approvals. The final Due Diligence report in 2016 provided a peer-reviewed analysis of project scope (merging scopes from both EAs), cost estimates, schedule, risks, and project delivery options. It ultimately recommended a total cost of \$1.25 billion (in the year of expenditure - YOE), including a 30 percent allowance for cost escalation and contingency (\$292 million). The report highlighted the complexity of the project and the uncertain nature of geotechnical and environmental risks related to soil and earthworks. Estimates were based on concept design (less than 5 percent), and a risk assessment at the time, including computer simulation modelling, determined that there was a 90 per cent (P90) probability of completing the project within budget.

City Council and other governments approved the scope outlined in the due diligence report and advanced funding in two stages. On June 28, 2017, the Prime Minister, Premier, and Mayor announced \$1.185 billion in funding for the full Port Lands Flood

Protection project. A 2016 approval of a 'quick-start' component of \$65 million for the Cherry Street Stormwater and Lakefilling project preceded the June 2017 announcement. In total, governments shared costs over both stages on a one-third basis.

As noted above construction has progressed with a number of significant milestones achieved in the last 12 months and anticipated substantial completion by the end of 2024. Waterfront Toronto has led the project with a continuous and ongoing program to reduce and mitigate risks and reduce costs associated with the project scope. Waterfront Toronto notes that cost optimizations have mitigated or saved over \$154 million since the project began. In addition, a number of other costs were mitigated through active management of procurements and supply contracts, utility relocations/enhancements, and soils and fill placement.

The project has continued reporting to the Waterfront Toronto Board and the various government-led oversight and steering committees that govern the contribution agreements and support project implementation. Oversight includes Waterfront Toronto's independent cost consultant, independent capital project monitor, and external Capital Peer Review Committee. It also includes tables such as the project-level Executive Steering Committee and the federal contribution agreement Oversight Committee. The overall tri-government/Waterfront Toronto relationship is governed by the City Manager/Deputy Minister-level Intergovernmental Steering Committee (IGSC). Among the IGSC's roles are to develop a co-ordinated oversight program that has guided Waterfront Toronto's corporate responses to program and organizational risks.

Cost estimates were updated as Port Lands Flood Protection design and construction progressed, which resulted in a drawdown of the project contingency. Waterfront Toronto reported updates to the various oversight bodies on a regular basis. In spring 2022, Waterfront Toronto began seeing extreme cost escalations.

As with other large ongoing infrastructure projects, Port Lands Flood Protection faced significant challenges due to supply chain disruptions, cost inflation, labour issues in the construction industry, and global economic uncertainty brought on by continued COVID-19 impacts and political instability. For example:

- In 2022, the cost to deliver residential and non-residential construction projects in Toronto was 36 percent greater than in 2017; and
- Waterfront Toronto's consultants have noted that many infrastructure projects in Canada and globally are now experiencing 30 percent or greater cost increases.

The rationale provided by Waterfront Toronto is consistent with current conditions experienced by the City through the planning and execution of its major capital projects. As reported to City Council in the context of other projects, the top pressures driving growth in construction costs across Canada include supply chain and logistics issues, rapid increases in the cost of materials, rising labour costs, and inflation.

Following due diligence throughout the summer, the Waterfront Toronto Board determined in the fall of 2022 that government support would be required. Waterfront Toronto staff noted that \$159-184 million in additional funding in 2024 and 2025 was

required to complete Port Lands Flood Protection as per the original approvals. The higher end of the range reflects additional contingency that could be provided. The risk simulation and modelling done by Waterfront Toronto to develop these figures capture the knowable risks. Waterfront Toronto Board's independent capital monitor (BTY) has noted that there remains a potential for cost increases as a result of uncertainty as not all unforeseen risks, costs and events can be modelled.

Waterfront Toronto also presented alternate scenarios which required substantially less funding but would have resulted in a stoppage of work or deferrals. Cancellation or deferral of flood protection and parks would have resulted in continued flood risk, negatively impacted other projects, and left large park areas fenced off and publicly inaccessible. Deferral or stoppage also brought other risks, including additional future costs to complete the project (including mobilizing/demobilizing costs) as well as the potential loss of \$25 million in a philanthropic contribution that has been committed to the associated Waterfront Public Art Trail, which City Council approved in July 2022.

Through late 2022 and the first quarter of 2023, government partners and Waterfront Toronto have worked to understand needs, risks, and funding options better. A key principle was to ensure that the shared tri-government public policy objectives of Port Lands Flood Protection were realized, particularly flood protection and public access to much needed green spaces. The government partners acknowledged that implementing flood protection served a critical purpose, given its role in future development and economic growth and in realizing the tri-government vision for the waterfront. As a result, it was agreed that meeting Port Lands Flood Protection outcomes was essential for the vision for the waterfront and that any solution would require governments and Waterfront Toronto to work together.

The intergovernmental partnership has resulted in a recommended solution which preserves the program's original objectives and delivers its intended outcomes by providing incremental funding of up to \$169 million between 2024 and 2025. The \$169 million amount represents approximately 13.5 percent of the full \$1.25 billion government commitment and includes \$63 million in contingency to the end of 2024. At this funding level, a risk assessment undertaken by Waterfront Toronto shows that the project would have a greater than 90 percent probability of completion on the revised budget.

It is important to note that, as with other construction projects, price volatility could impact Port Lands Flood Protection. Waterfront Toronto's independent project monitor continues to report that there are considerable and material levels of uncertainty in infrastructure project costs worldwide. As noted below, governments and Waterfront Toronto have structured contributions and cash flow in order to partially mitigate these concerns. The recommended approach presents a creative solution that leverages available funding sources, including Waterfront Toronto's own revenues, balances impacts across governments, and meets shared public policy outcomes. It advances the Port Lands towards its transformational opportunities, including disaster mitigation, economic development and unlocking new housing supply.

The recommended solution to address Port Lands Flood Protection funding pressures includes:

- No changes to the City's 2023 approved budget.
- No further changes to the project's substantial completion date, which as previously reported to City Council is anticipated to be December 31, 2024.
- No changes to the overall scope of assets delivered to the City upon completion.
- Restructuring of government approvals to separate the components into two projects, one of which is required to meet original Port Lands Flood Protection outcomes and a second for parks and public realm elements.
- Parks and Public Realm - Cost-sharing of parks and public realm elements through:
 - A recommended incremental City contribution of \$32.5 million over 2024 and 2025.
 - The Province of Ontario has endorsed and nominated the project for approval under the Investing in Canada Program (ICIP) Community Culture and Recreation Infrastructure Stream, allowing it to access an existing federal amount of \$48.6 million to Ontario (subject to appropriate approvals). Tri-government partners and Waterfront Toronto collaborated in an expedited manner to ensure this application was sent in before the program deadline of March 31, 2023.
 - A new transfer payment agreement between the Province of Ontario and Waterfront Toronto for parks and public realm under the Investing in Canada Program (ICIP) - Community Culture and Recreation stream.
 - A new project delivery agreement between the City and Waterfront Toronto for the City's commitment to parks and public realm.
- Flood Protection
 - Cost-sharing of flood protection escalations through incremental provincial funding of up to \$55.2 million (subject to appropriate approvals), \$10 million from Waterfront Toronto, and a recommended incremental City contribution of \$22.7 million over 2024 and 2025.
 - Technical amendments to the existing Canada, Ontario, City and Waterfront Toronto Port Lands Flood Protection Contribution Agreement.
 - Restructuring Waterfront Toronto's contracts to ensure compliance with intergovernmental funding agreements and optimize project delivery.
 - Waterfront Toronto to leverage its working capital and existing borrowing capacity (which was previously approved by governments), if necessary, to provide any short-term financing required to manage project expenditures and the timing of government contributions.

The recommended solution is currently going through formal approvals at Federal and Provincial governments, including Ministerial approvals as appropriate. The Waterfront Toronto board approved its contribution of \$10 million at its March 27, 2023, meeting. Waterfront Toronto's contribution of \$10 million recognizes that Port Lands Flood Protection is a core priority and will be sourced through a reallocation of funding.

Waterfront Toronto will continue to use its working capital and borrowing capacity to manage cash flows through Port Lands Flood Protection and the new parks and public realm component. Waterfront Toronto will be required to use its contribution of \$10 million prior to government funding being exhausted thus bringing the total available funding to up to \$169 million.

Waterfront Toronto will continue to monitor project delivery and costs and will work to mitigate future risks. Reporting and oversight will continue through existing governance structures allowing for continued collaboration.

City Council previously provided authority to the Deputy City Manager, Cluster B (now Infrastructure and Development Services) to sign the Contribution Agreement for Port Lands Flood Protection. This report recommends a renewed authority given the scope of changes and the proposed incremental funding. Attachments 2 and 3 summarize the key terms of the two agreements required by the City - 1) the proposed amended Port Lands Flood Protection Contribution Agreement and 2) the Investing in Canada Plan Project Delivery Agreement between the City and Waterfront Toronto for parks and public realm components. The draft terms and conditions of both agreements include language that the City's contribution is subject to an annual appropriation from City Council through the budget process. These conditions are similar to existing terms and conditions the Federal and Provincial governments apply.

Subject to City Council and Federal and Provincial government approvals, governments and Waterfront Toronto will proceed with the recommended solution. Work is underway to ensure a seamless transition to maintain project timelines.

As Port Lands Flood Protection proceeds, it is anticipated that existing government oversight will continue to focus on project delivery and the structures that are in place to foster accountability, manage risks, and ensure effective communications amongst parties. Multiple reviews and evaluations, including the Waterfront Strategic Review Update reported to City Council in 2021, have noted the benefits of the existing tri-government governance structure and its ability to foster dialogue and co-operation.

2. Port Lands Enabling Infrastructure Implementation

Asset Ownership and Handover

As noted above, construction of the Port Lands Flood Protection Project is now well underway. Its 23 separate projects are happening concurrently under the supervision of Waterfront Toronto with a complex construction schedule that will result in the phased completion and handover of various infrastructure and park-related assets starting in 2023 and continuing until the project's substantial completion at the end of 2024.

The ultimate ownership of assets was first identified, at a high level, in the Port Lands Flood Protection Due Diligence Report approved by Council in November 2016. Since then, City staff and Waterfront Toronto have worked with the Toronto and Region Conservation Authority to refine ownership options and identify future operating and maintenance requirements and costs.

Waterfront Toronto is developing three overarching Handover Protocols to provide guidelines regarding the transfer of individual assets to the City as follows:

- Handover Protocol for Roads, Bridges, and Public Utilities;
- Handover Protocol for Parks and Open Spaces; and
- Handover Protocol for Unique Infrastructure (i.e. Sediment and Debris Management Area, new marine infrastructure, etc.).

The purpose of the Handover Protocols are to identify milestones for handing over individual assets to the City at two stages, identified as 'Acceptance' (meets City standards) and 'Assumption' (City assumes ownership). The protocols will also address warranty, maintenance, and operational responsibilities during all stages of handover. The City and Waterfront Toronto staff have been working in close consultation to ensure that all assets constructed as part of the Port Lands Flood Protection Project are handed over to the appropriate operating City Division efficiently and that the asset meets all City operational standards and practices.

Although it is generally the City's practice to require developers and contractors to operate and maintain assets between the period of Acceptance and Assumption, the complex nature of the Port Lands Flood Protection project may require certain exceptions to this practice. Composed of 23 sub-projects over a vast and active area of the Port Lands, implementation of the project requires extensive logistics and construction zone management. Comprehensive traffic and construction management programs are necessary to maintain public and business access to the Port Lands while utility and road work are underway. As a result, in certain circumstances, this requires new roads to be open and dedicated in an interim condition, or that utility infrastructure be brought online and operationalized before the City can assume it.

Currently, Waterfront Toronto has, by way of an agreement with Transportation Services, undertaken the responsibility for the majority of the maintenance and operation of the interim Cherry Street south construction detour and will enter into a similar agreement for the reopening of Commissioners Street as a construction detour in the fall of 2023. Similar agreements may be appropriate for other infrastructure assets, such as those that will eventually be owned and operated by Toronto Water and Parks, Forestry and Recreation. As such, City staff recommend that Council authorize the Deputy City Manager, Infrastructure and Development Services or designate, in consultation with the appropriate division heads, to enter into agreements as appropriate and to the satisfaction as may be required for the operation and maintenance of assets constructed as part of the Port Lands Flood Protection until the assets are fully assumed by the City.

Handover Protocols may be amended through ongoing consultation and with the mutual agreement of the parties as new elements are considered and addressed. Handover Protocols will also touch on the related issue of land transfers and interests in land to the City of Toronto as required for the operation of the assets. City staff recommend that the Deputy City Manager, Infrastructure and Development Services, or designate, in consultation with the appropriate division head, execute these protocols in accordance with the terms set out in Attachment 4.

In addition, Waterfront Toronto and CreateTO are negotiating the terms for a Handback Agreement for lands to be returned to CreateTO for mixed-use development following the completion of Port Lands Flood Protection. City staff anticipate that this agreement will be finalized in 2023.

Handover Timelines

The handover of completed Port Lands Flood Protection assets depends upon many factors that may affect construction progress. These may include weather, labour, supply chain, procurement, and unforeseen technical issues.

Currently, and based on progress to date, Waterfront Toronto expects to be in a position to start handing over some assets to the City this year with the majority to be handed over throughout 2024. The first of these is expected to be a newly constructed watermain within the Sediment and Debris Management Area in May. This would be followed by the fully built portion of the realigned Cherry Street from Lake Shore Boulevard East south to Commissioners Street in the fall with an interim sanitary pumping station located at Don Roadway and Commissioners to follow in December.

Waterfront Toronto has provided the following planned schedule of asset handovers which is subject to change:

- Villiers Street Stormwater Treatment Facility - February 2024;
- Rebuilt Don Roadway and Underlying Flood Protection Landform Feature - October 2024;
- Interim Sediment and Debris Management Area - October 2024
- Completed Cherry Street South Right-of-Way from Commissioners to Polson (currently partially open as a construction detour) - December 2024;
- Completed Commissioners Street Right-of-Way (will be partially opened this spring as a construction detour) - December 2024; and
- River Parks North and South, Promontory Park South and River Valley - December 2024 (anticipated to be open in 2025 with possible opening in phases).

The City and Waterfront Toronto staff will continue to monitor construction progress to ensure assets are completed and handed over in a manner that reflects the above schedule.

Asset Ownership, Operating and Maintenance Costs

The goal of identifying operating budget impacts before the completion and assumption of new Port Lands infrastructure is to ensure the long-term viability of public assets through operations and maintenance, programming, and state-of-good repair funding.

The figures provided below and throughout this report outline the preliminary projected operational expenses over ten years. For illustrative purposes, costs are shown starting from the first full year after handover of the assets with the actual timing of expenditures depending on when specific assets are handed over to the City. Waterfront Toronto will deliver assets incrementally as they are completed. These costs reflect the assets currently under construction and are required to support the new parks, existing businesses, and industries and provide a foundation for future development.

City staff will update and include these operating costs as part of future budget processes.

Bridges, Structures, Roads and Municipal Utilities

The Port Lands Flood Protection project includes a rebuilt Lake Shore Boulevard East bridge over the Don River and four new fixed-height bridges, including two at Cherry Street North over the Keating Channel and one each at Cherry Street South and Commissioners Street over the new river valley. All four new bridges offer a combination of utility and design excellence and have already become architectural landmarks within the Port Lands.

Additionally, the project will include the reconstruction of Commissioners Street, which will be widened to accommodate future Light Rapid Transit, a rebuilt Don Roadway, and a realigned Cherry Street with a future transit right-of-way. New water, sanitary, and stormwater utilities will also be installed along with expanded cycling and pedestrian infrastructure. Improvements to the public realm that takes advantage of the new river valley and parks context the project provides are also included.

The handover of the newly constructed roads, bridges, and utilities will be governed by the Port Lands Flood Protection Handover Protocol for Bridges, Roads and Utilities to be agreed to by City and Waterfront Toronto. Dedication and opening the roads and bridges for public usage is also a fairly standard process subject to Council enactment of the appropriate by-laws. City staff from Transportation Services, Toronto Water, Engineering and Construction Services, and Legal Services are working in consultation with Waterfront Toronto to address all technical requirements and prepare the necessary reports and draft by-laws for Council's consideration.

In June 2022, City staff introduced several reports ([TE34.4](#) and [IE31.13](#)) to City Council on opening the realigned Cherry Street south as a 'construction detour' between Commissioners Street and Polson Street. Later in 2023, Council will consider an additional report for reopening Commissioners Street as a construction detour and the fully complete, realigned Cherry Street north between Lake Shore Boulevard East to Commissioners Street ahead of the anticipated opening of these assets. Additional reports for opening other roadways and associated underlying utilities will follow as construction is completed.

Regarding operational costs, City staff from Transportation Services, Engineering and Construction Services, and Toronto Water have reviewed the designs and relevant Operation and Maintenance materials submitted by Waterfront Toronto and have provided the projected costs in Figure 4.

Figure 4: Preliminary Estimated Operating Costs Roads, Bridges, Municipal Utilities

Asset (\$000s)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Roads*	68	66	68	69	70	71	72	74	75	76
Bridges**	47	66	48	66	48	240	49	67	50	1,176
Transportation Total	115	132	116	135	118	311	121	141	125	1,252
Utilities***										
Watermain	14	14	14	14	15	15	15	16	16	16
Stormwater	200	204	208	212	216	220	224	228	231	235
Sanitary	198	202	206	210	214	218	221	225	229	233
Utilities Total	412	420	428	436	445	453	460	469	476	484

* Estimated cost of maintaining all planned roads in the Port Lands Flood Protection Project area plus a 2.5% year over year cost escalation.

** From Waterfront Toronto's bridge consultant's 75 year Life Cycle Cost Analysis reviewed by Engineering and Construction Services. Owing to the specialized nature and design of the Cherry Street and Commissioners Street bridges includes a 20% contingency rounded to nearest '000, The Year 10 amount includes yearly, routine, plus recommended 10 year periodic maintenance that includes milling and paving 40mm deck asphalt, replacing expansion joint seals and refreshed zone and anti-graffiti coatings.

***Utilities include a 2% year-over-year escalation to Year 10. Stormwater and Sanitary figures include the estimated costs of maintenance for both linear (pipeline) and pumping station infrastructure.

Parks and Community Services

The ongoing maintenance of parks and public realm improvements are integral to the generational success of the Port Lands Flood Protection and ICIP parks and public realm projects. The conceptual design includes 40 ha (100 acres) of parkland, wildlife habitat, and natural areas along portions of the new river valley's northern and southern banks and mouth. Waterfront Toronto is constructing Promontory Park South, River Park North, and River Park South. Future parks on Villiers Island outside the Port Lands Flood Protection project scope, including Promontory Park North and Villiers Park, will be considered as part of the Next Phase of Revitalization.

These new parks will serve as gathering places for residents to actively explore their waterfront and invest in local waterfront businesses. Furthermore, preserving green spaces in the Port Lands will create the conditions for critical wildlife ecosystems to thrive through habitat restoration.

Provided all environmental considerations are addressed upon handover, it is not anticipated that any additional Council authorizations, beyond the approval of the

required operational budgets, would be required for the assumption and opening of these assets.

Regarding operational costs, City staff from Parks, Forestry and Recreation have reviewed the designs and relevant materials submitted by Waterfront Toronto and have provided the following projected costs in Figure 5.

Figure 5: Preliminary Estimated Operating Costs Parks, Forestry and Recreation

Asset (\$000s)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Parkland and Forestry Management	3,200	3,280	3,350	3,420	3,490	3,560	3,630	3,710	3,790	3,870
Community Programming and Partnerships	450	1,260	1,290	1,320	1,350	1,380	1,410	1,450	1,490	1,530
Total	3,650	4,540	4,640	4,740	4,840	4,940	5,040	5,160	5,280	5,400

* Total projected Parks, Forestry and Recreation operating costs are consolidated estimates with a 2% year over year escalation from Year 1.

Projected park operating costs include maintenance of all new parks within the scope of work, including the currently named River Valley Park North, River Valley Park South and Promontory Park South. It also includes components within the parks, including Don Greenway and Canoe Cove. The operating costs do not include Destination Play, a 2.4-hectare interactive, inclusive and connected series of play areas and trails within Promontory Park South, which is outside the scope of work for the Port Lands Flood Protection project.

Further assessment is required on the operating and maintenance costs of Marine Terminal 35 dock wall which will be supporting and adjacent to Promontory Park South.

Forestry operating costs include natural area vegetation monitoring, invasive species management, natural area planting maintenance, and proactive tree maintenance. Operating costs for community programming and partnerships include annual community stewardship and volunteer tree planting events, recreation programming and permits based out of a planned community hub in the restored historic fire hall located within the Port Lands, outdoor park animations, ecologically-focused recreation programs, and special events.

Unique Infrastructure

In addition to the above, Port Lands Flood Protection also includes unique infrastructure which supports the conveyance of stormwater and flood protection. A number of these assets also provide and support traditional municipal functions, including the following:

- New river valley (and aquatic habitats) which is adjacent to the anticipated park system, including River Park North and River Park South;
- Ice management area and the flow curtain in the Keating Channel, which manages river flow and stormwater;
- Don Roadway Flood Protection Landform, which supports and is tied into the new Don Roadway south of Lake Shore Blvd East; and
- Sediment and Debris Management Area, which is discussed later in this report

The City will be taking the title of these assets upon completion of Port Lands Flood Protection and will be supported by the Toronto and Region Conservation Authority, which is open to providing services for riverine, shoreline, and natural infrastructure under a management plan and/or service agreement.

Key staff considerations have been made to ensure that any final arrangements recognize the unique nature of these assets, that risks are appropriately managed, and that the right expertise would be available to operate and maintain assets effectively. City staff also considered the need for jurisdictional clarity and efficiency in operations and decision-making, learning from experiences in the West Don Lands Flood Protection Landform/Corktown Common, which is owned by the Toronto and Region Conservation Authority but managed by the City.

Ultimately the unique assets being completed as part of Port Lands Flood Protection serve municipal functions and are integral to the management and ongoing operations of parks, roads and bridges. The City also already owns sections of the Don River, including north of Lake Shore Blvd East, around Pottery Road, and around the Don Valley Golf Course, and other areas such as parks around Massey and Wilket creeks. This experience provides a precedent and an opportunity for City staff to review the current approaches to managing such lands.

As with other assets, City staff have worked with the Toronto and Region Conservation Authority and Waterfront Toronto to determine a preliminary estimate of operating costs over ten years. This period is projected to start after the second full year substantial completion of the project, which is anticipated to be end of 2024. The required monitoring and maintenance of the completed river valley and associated infrastructure will be undertaken by Waterfront Toronto in the first two years as part of the Port Lands Flood Protection project.

The estimated City preliminary operating costs in Figure 6, below, have been developed in consultation with both Waterfront Toronto and the Toronto and Region Conservation Authority and are for routine/day-to-day operations and maintenance and do not address potential capital replacement costs that may be associated with one-time catastrophic or significant weather events.

Accordingly, these activities may be subject to a potential management plan and/or service agreement and among other activities would include the following:

- Annual and ongoing environmental monitoring as required by the provincially approved Environmental Assessments;
- Seasonal below-top-of-bank maintenance activities resulting from annual inspections of the river valley (typical seasonal works related to erosion, planting, slopes, wildlife, etc.);
- Monitoring and maintenance of flood protection landform and other associated infrastructure; and
- Maintenance and operation of specialized infrastructure such as carp gates, etc.

Figure 6: Preliminary Estimated Operating Costs for Unique Infrastructure

Asset (\$000s)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
River Valley/Below Top of Bank Maintenance, Environmental Monitoring & Flood Protection Landform Maintenance	2,000	2,000	2,100	2,100	2,200	2,200	2,300	2,300	2,300	2,400

* Total projected operating costs are consolidated estimates with a 2% year over year escalation from Year 1.

It should be noted that the costs in Figure 6 are preliminary estimates from the Toronto and Region Conservation Authority and Waterfront Toronto based on previous experience and best practices. City staff will continue to work with both Waterfront Toronto and the Toronto and Region Conservation Authority to refine the service scope and associated cost for each activity to be set out within a potential management plan and/or service agreement which is anticipated to be in place after the second year of substantial completion of the project. City staff will provide City Council with an update on these matters by Q4 2024.

Real Estate Matters

The scale and scope of the Port Lands Flood Protection project requires a number of real estate transactions, the vast majority of which will involve land being conveyed to the City for roads and parks, or utility easements being conveyed to the City for water and sewer infrastructure. Waterfront Toronto is constructing the project, and, in most cases, is conducting extensive environmental work under construction licences with the relevant property owners.

CreateTO, via the Toronto Port Lands Company (TPLC), controls the majority of the land in the project area. As contemplated in section 4.3 (d) of the Memorandum of Understanding - Revitalization of City and TEDCO Owned Lands in the Port Lands and East Bayfront among the City, TEDCO/TPLC and Waterfront Toronto, dated March 31,

2006 any land transfer of fee simple title in TPLC Lands to the City that are to become 'Public Realm Lands' (e.g. parks, rights-of-way, etc) will be for nominal consideration. City staff continue to evaluate the potential cost of the provincial portion of the Land Transfer Tax which may be triggered under such transactions. Details will be reported to City Council by Q4 2024 following further due diligence.

As lead for the Port Lands Flood Protection project, Waterfront Toronto has made arrangements to acquire many of the property interests required from other parties at its cost. Rather than acquiring these interests and then re-transferring them to the City, Waterfront Toronto is proposing to direct title to the City under these arrangements. As Waterfront Toronto will be responsible for fulfilling the City's environmental and technical requirements as part of the asset handover process, the City will have a very limited interest in the business terms of such transactions negotiated between Waterfront Toronto and third party landowners, and will be primarily concerned with ensuring that any title restrictions or other encumbrances that could interfere with the City's operation of the relevant Port Lands Flood Protection asset as end user are appropriately addressed. Therefore, City real estate approvals will be largely focused on such matters.

Municipal Code, Chapter 213, provides limited delegated approval and signing authorities to various staff for real estate transactions. Authority is provided to various senior staff based on the types of transactions being undertaken and the associated financial implications, subject to a list of general conditions. However, given the unique nature of the Port Lands Flood Protection project, it is anticipated that not all transactions will be captured by the existing authority. In addition, as Waterfront Toronto's land surveying work is ongoing, property requirements for the project continue to be identified and refined based on input from stakeholders, which may result in compressed negotiation timelines and require timely approvals from the City.

Given the complexity of the project, Waterfront Toronto's role in negotiating property acquisition terms, the number of anticipated transactions and the critical timelines associated with project completion and handover, City staff are recommending a limited extension to delegated authority. Specifically, it is recommended that City Council delegate authority to approve real estate transactions in connection with the implementation of Port Lands Flood Protection to the Executive Director, Corporate Real Estate Management, in consultation with the head of the City division to have operational management of the affected land or any affected Port Lands Flood Protection asset.

3. Sediment and Debris Removal in the Don River and Keating Channel

Sedimentation is a natural river process where soil particles, typically from erosion upstream, are suspended in the water column and transported downstream until slowing water velocity causes the soil particles to settle and accumulate on the river bottom. Sedimentation rates can change over time or year over year depending on river velocities and erosion rates, which are related to rain and snowmelt runoff amounts.

Runoff silt and debris will continue accumulating in the Don River due to regional challenges such as the area of impervious surfaces that exist upstream, continued urbanization, and limited opportunities for stormwater management. The rate of new

sedimentation in the Lower Don River and Keating Channel is estimated to be between 30,000 cubic metres and 50,000 cubic metres per year.

As a result of this process, sediment removal via dredging within the Lower Don and Keating Channel has historically been important to ensure that the Keating Channel remained navigable. Dredging will be critical to providing and maintaining flood protection within the Lower Don area.

Clearing the Accumulated Backlog

As noted above, removing accumulated sediment is the first step for the ongoing maintenance of Keating Channel, which is owned by PortsToronto. The Keating Channel will continue to play a significant role in conveying flood waters in the event of a major storm, and clearing the backlog is required to ensure flood protection is maintained and that the capital investment in the Port Lands Flood Protection project is protected. Plans for the Port Lands Flood Protection construction had assumed the Keating Channel would be dredged to its design depth on an ongoing basis. Therefore, the budget for the Port Lands Flood Protection project did not include a provision for this dredging activity.

History of Dredging in the Keating Channel

The Keating Channel was constructed in 1914 to support the creation of the Port Lands and navigation to industrial sites along the Lower Don up to Winchester Street. PortsToronto carried out regular dredging in Keating Channel until 1975 when open-water disposal of dredged material was banned in Lake Ontario. An environmental assessment was completed in 1983 to allow dredged material to be taken to confined disposal facilities at the Leslie Street Spit, and dredging resumed in 1987 which maintained the Keating Channel at its original design/maintenance depth necessary for navigation and flood conveyance.

In 1991, the City of Toronto, PortsToronto, and the Toronto and Region Conservation Authority entered into a tri-lateral agreement which provided equal funding from all three parties for dredging the Keating Channel. However, the annual budget and funding for annual dredging remained static while costs increased year-over-year, resulting in more sediment accumulation each year.

Overall costs for dredging are also impacted by the limited options for disposal and its associated transportation costs. The only approved local disposal site for Keating Channel sediment is the Confined Disposal Facility within the Leslie Street Spit which is owned by the Ontario Ministry of Natural Resources and Forestry (MNRF) and leased by PortsToronto until 2025.

In 2018 PortsToronto withdrew financial support for dredging activities, citing that they did not have an interest in maintaining the Keating Channel's design/maintenance depth as it was no longer navigable to large vessels due to the inclusion of new fixed bridges across the Keating Channel as part of Port Lands Flood Protection. Dredging operations were further hampered by the malfunction of the existing Cherry Street lift bridge in the summer of 2019, which resulted in it being permanently fixed in a down position. This

prevented dredging equipment (tugs and barges) from entering the Keating Channel, which decreased efficiency and increased dredging costs. Despite these challenges, Waterfront Toronto, the Toronto and Region Conservation Authority, the City, and PortsToronto worked together through some cost-sharing to complete limited dredging activities to address short-term flood risks in the fall of 2019 and 2021.

One-Time Backlog Keating Channel Dredging Program

Based on recent surveys, the current backlog of sediment in the Keating Channel is estimated to be approximately 120,000 cubic metres in-situ (in water). Combined with the continued annual sediment deposition it is estimated that there will be between 180,000 to 220,000 cubic metres in-situ of excess sediment that must be removed from the Keating Channel to achieve the goal of flood protection.

Accordingly, City staff, in consultation with Waterfront Toronto, PortsToronto, and the Toronto and Region Conservation Authority, developed a one-time dredging program to be implemented within Keating Channel starting in 2023. The dredging program includes two phases.

The first phase will be primarily coordinated by Waterfront Toronto and will focus on areas that require dredging to facilitate Port Lands Flood Protection construction which will involve some sediment removal and sidecasting (moving sediment from one area of the channel to another) in an area around the Lake Shore East Bridge and on the south side of Keating Channel. The cost per cubic metre remains high as the Cherry Street lift bridge over the Keating Channel remains locked in a lowered position, impeding the navigation of equipment and resulting in additional handling requirements.

Phase one will also be designed to allow for dredging activities to continue through 2023 weather permitting, including after the Cherry Street lift bridge is removed in fall 2023, in order to remove further amounts of the accumulated backlog. Together phase one is anticipated to have a total cost of approximately \$10 million. City staff recommend that City Council approve phase one with dredging work in 2023 which will be funded upfront by Waterfront Toronto and/or other parties and is to be reimbursed by the City in 2024 and, if required, in 2025, subject to budget approvals.

The second phase of the one-time dredging program will be led by the City with support from the Toronto and Region Conservation Authority and will focus on the remaining areas and amounts subject to budget approval. An early estimate of the total cost to remove the backlog was \$24 million, with further work to be done to finalize cost estimates. The total cost and the final City share will be dependent on further analysis of volumes, environmental monitoring, and cost-sharing by other governments and other parties. The plan to remove the backlog depends on external factors such as water levels, weather, and limitations concerning fish spawning season. The amount dredged in the short-term will seek to ensure alignment with Port Lands Flood Protection goals, with any remaining amounts dredged thereafter. With further work to be done to finalize the amount of sediment to be removed, the potential phasing of work, and market testing, it is recommended that City Council approve phase two of the removal program in principle, subject to budget approval in 2024.

In principle, approval at this time for phases one and two would provide certainty for the Port Lands Flood Protection construction schedule and ensure flood protection can be advanced, while allowing staff to finalize scope of work and costs for inclusion into the budget process.

Long-Term Dredging Operations

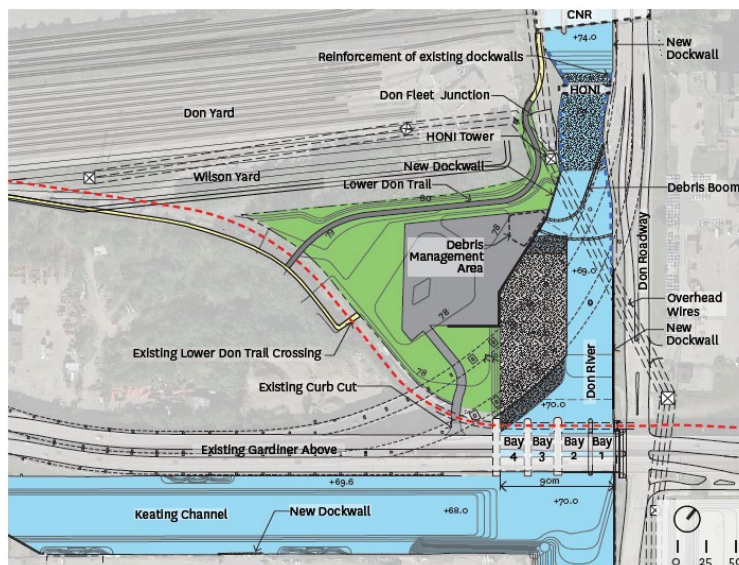
The Sediment and Debris Management Area

Following the completion of flood protection, annual sediment management and removal operations will shift primarily to the Don River upstream of Lake Shore Boulevard East to the new Sediment and Debris Management Area. The City owns this part of the Don River. Depending on conditions, there will also remain a need to do localized dredging of the Keating Channel near the new river outlet approximately every two years.

The new primary area for dredging was created due to the widening and deepening of the river to accommodate flood levels under the Lake Shore Boulevard East bridge, thus making a 'sediment trap.' The sediment traps are designed to concentrate sediment deposition in a confined area for more efficient dredging and to reduce sediment reaching the new river. The Sediment and Debris Management Area has space on the shore for sediment and debris sorting, equipment and materials handling. The facility will be adjacent to the Lower Don Trail, a regional multi-use trail route.

As noted in 2016, the Sediment and Debris Management Area work is to be coordinated with work related to the Gardiner Expressway EA and the realignment of the Don Valley Parkway on/off ramps. This includes the completion of the Sediment and Debris Management Area in phases. As such Waterfront Toronto is constructing the Sediment and Debris Management Area to an 'interim' condition that will achieve flood protection standards. A graphic of the interim condition is provided in Figure 7.

Figure 7: Interim Sediment and Debris Management Area



City staff continue to review the possible scenarios for operations and management of unique assets, including the Sediment and Debris Management Area. For example, it may be appropriate for different divisions to manage it over time, with one managing it in the interim condition and another in its final condition in 2031. It is expected that, under any scenario, the Toronto and Region Conservation Authority would undertake maintenance of the facility with actual dredging operations potentially being undertaken by an expert third party.

Long-Term Dredging Operations

Together the City, the Toronto and Region Conservation Authority, and Waterfront Toronto, with input from PortsToronto, completed a comprehensive review of the options available for long-term sediment and debris management. The technical review included updated costing, relying on the expertise of the Toronto and Region Conservation Authority and PortsToronto due to their history in dredging activities, and Waterfront Toronto's technical expertise.

Two primary potential options were considered. The first option was to continue with past practices and remove sediment mechanically using barge-mounted excavation equipment, with the removed sediment deposited into a scow barge and transported using a specialized tug directly to the Confined Disposal Facility at the Leslie Street Spit. The second option was to utilize hydraulic dredging whereby sediment is moved from the riverbed by a pipe to the land side of the SDMA to be dewatered and sorted for potential reuse, while the remainder would be transported by truck or barge to a disposal facility. Dredged sediment is tested regularly by the Toronto and Region Conservation Authority to monitor contaminant levels.

The Confined Disposal Facility is currently under lease by PortsToronto from the Province of Ontario until 2024. Other sites approved for the disposal of dredged material are located outside the Greater Toronto Area which would result in additional transportation costs.

After the technical review of the options above, which included a peer review, it was determined that mechanical dredging is efficient and recommended from both a cost and operational perspective. Considerations and their impacts include:

- Mechanical dredging requires less handling of materials than hydraulic dredging;
- Mechanical dredging has fewer operational risks, including avoiding risks related to jamming within a hydraulic pipeline and associated shutdowns and repairs;
- Mechanical dredging cannot separate sediment to reuse larger particles which is possible using hydraulic dredging, which would help conserve disposal capacity at the Confined Disposal Facility;
- Sediment materials must be disposed of in an approved facility; and
- Challenges related to the transportation of dredged material, including construction, operation and navigational risks.

Mechanical Dredging: Projected Costs

As with other City assets noted above, City staff and partners have estimated the future costs of mechanical dredging, which includes anticipated capital and operating costs. Figures are preliminary and will depend on the volume of sediment and other factors, such as the accessibility of the dredging area and equipment to be utilized. Details are provided in Figure 8 below.

Mechanical dredging operations will require a customized low-head tug that can clear the fixed-height transit and vehicular bridges over the Keating Channel, and a replaced and widened bridge for Lake Shore Boulevard East. The costs of tugs and barges were anticipated in 2016 when fixed-height bridges were chosen to be installed. Fixed-height bridges are significantly more cost-effective than lift bridges which are also open to mechanical and operational issues over time. Other equipment needed includes a new specialized excavator to remove material from the bed of the Don River as well as two new scow barges and a new operations barge, all of which would be based at the Sediment and Debris Management Area. New equipment could be purchased or could be included as part of a long-term operating and maintenance contract.

Yearly operational costs will commence when the Interim Sediment and Debris Management Area is expected to be operational and were estimated by the Toronto and Region Conservation Authority and PortsToronto based on historical sediment deposition volumes and per cubic metre removal rates. Estimates will need to be market tested as a part of the next steps.

With the shifting of most dredging operations to the City-owned portion of the Don River north of Lake Shore Boulevard East, dredging will be the responsibility of the City, with support from the Toronto and Region Conservation Authority. This includes localized dredging of the Keating Channel that will be required approximately every two years. In addition, work will be required to prevent large debris from entering the Inner Harbour and removing what has been collected. PortsToronto has agreed to support these costs.

Figure 8: Preliminary Estimated Costs for the Long-Term Dredging Program

SDMA (\$000s)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Debris Removal*	500	500	500	500	500	500	500	500	500	500
Sediment Removal										
Tugs and Barges	2,500	2,500	-	-	-	-	-	-	-	-
Operating	-	-	7,400	7,500	7,700	7,800	8,000	8,100	8,300	8,500
Total	3,000	3,000	7,900	8,000	8,200	8,300	8,500	8,600	8,800	9,000

Preliminary estimated costs are in 2022 dollars with a 2% year over year escalation from Year 1.

* will be supported by PortsToronto

There are currently three options for the long-term dredging operation that the Toronto and Region Conservation Authority and the City are investigating:

- A. Dredging operations are contracted out through a competitive procurement. The successful contractor would be responsible for obtaining the customized dredging equipment and cost recovery for this would be built into the contract;
- B. Dredging operations, through an agreement, would be assigned to PortsToronto. PortsToronto would be responsible for procuring the custom dredging equipment and costs would be built into the agreement; or
- C. Dredging operations would be managed through a partnership between the City and the Toronto and Region Conservation Authority. Custom dredging equipment would be owned and operated by the City.

The cost/benefit of each option is being investigated to determine the most economical and efficient arrangement for future operations of the Sediment and Debris Management Area. Also being considered is the long-term issues of accessibility and capacity of the Confined Disposal Facility and alternatives post-2050. As with other matters noted above, the outcomes of this review will be reported to City Council by Q4 2024.

4. Implementation Next Steps

Port Lands Flood Protection will unlock significant value in the Port Lands, with future development expected to lead to an estimated \$4 billion economic impact. Much of this value will be created on City, CreateTO, and other public lands.

Foundational Investments after Flood Protection

Unlocking this value depends on completing the foundational work of flood protection as outlined above. In addition to dredging, a number of associated foundational projects will need to be completed as development proceeds. This includes completion of the Sediment and Debris Management Area to its 'final' condition starting in 2030-31, acquisition of PortsToronto lands required for Promontory Park North, and the management of excess soils on development sites. Further details are noted below.

The City, other governments, and appropriate agencies are reviewing the steps required to unlock this potential. City staff will continue to collaborate with partners in order to ensure the completion of the flood protection program and review future infrastructure programming for opportunities in the context of the Next Phase of Waterfront revitalization. City staff will report back on these foundational investments and the next steps by Q4 2024.

Sediment and Debris Management Area Phase Two

The second phase of the Sediment and Debris Management Area will be advanced in 2030-31 as the planned capital works for the Gardiner Expressway project proceeds. This second phase will result in its 'final' condition required to achieve required flood protection standards and provide additional capacity to adapt to climate change. The second phase will also create the final works yard required for efficient operations. It is anticipated that the final condition Sediment and Debris Management Area will have construction costs of approximately \$23.5 million in 2031 dollars, with the cost to the City and contribution from other governments to be determined. Completion to its final condition continues to be reviewed by the City and Waterfront Toronto with roles and responsibilities to be determined and will be reported to City Council by Q4 2024.

PortsToronto Land Acquisition

Development of Promontory Park North and associated municipal infrastructure requires the City, CreateTO and PortsToronto to finalize the City acquisition of 10.7 acres of land that was created on Villiers Island through the tri-government funded Cherry Street Stormwater and Lakefilling Project. PortsToronto holds title to this land as a result of owning the water lots that were filled in by governments. Discussions have been ongoing since that project was commenced. Parties have yet to arrive at an agreement that appropriately considers the tri-government funding contributions that enabled the lakefilling project. Discussions are ongoing, and these costs are anticipated to be incurred as development plans for Villiers Island proceed.

Soil Management

Staff continue to plan for future development, including the management of excess soils which are being placed on future CreateTO development sites. Approximately 300,000 cubic metres of soil will be placed permanently, and an additional 200,000 cubic metres of soil will be placed temporarily. The amount of excess soil volumes will continue to be reviewed in the context of emerging development plans for Villiers Island, the McCleary district, and the future South River districts, which includes the development of public parks (Promontory Park North and Villiers Park) and rights-of-way. Should all of the temporary soil require disposal, CreateTO estimates that this would represent a cost of \$10-20 million in current dollars, which would need to be incurred as development proceeds following the completion of flood protection.

Infrastructure and Servicing for Villiers Island

The primary focus of the Port Lands Flood Protection project was to deliver flood protection infrastructure integrated with improved natural habitat and public open spaces to enable development. These foundational elements included many of the major infrastructure components to support the development of Villiers Island, but excluded some parks, public realm, roads, and bridges that were to be built as development proceeded.

The build-out of Villiers Island and the delivery of these projects will require a phased approach, coordinated with development on the Island and across the Port Lands, to deliver:

- New streets to support the development and complete the road network (Centre Street, "old" Cherry Street, "new" Foundry Street, "new" Munitions Street, Trinity Boulevard, Villiers Street, Villiers Park Street);
- The Munition Streets Bridge across the Keating Channel;
- New parks and dock wall improvements (Promontory Park North, Villiers Park, and Keating Channel Promenade);
- Sanitary servicing, storm sewers, and watermains to service the future development blocks;
- The full build-out of the stormwater storage and treatment facilities, which will serve future development in Villiers Island, South River, and Polson Quay;
- An ultimate sanitary sewer pumping station located at 545 Commissioner Street and associated downstream infrastructure on Commissioners Street, which will service Villiers Island, South River, Polson Quay, Media City, McCleary, Turning Base, Warehouse, and East Ports districts as well as the South of Eastern area;
- Community services and facilities, including a community centre, school, childcare centre, fire station; and
- The eastern segment of the Eastern Waterfront Light Rapid Transit project.

The City of Toronto, Waterfront Toronto, and CreateTO are conducting technical studies and public consultations on Villiers Island to evaluate approaches to increasing densities on public lands by at least 30 percent above the 2017 Precinct Plan. These studies cover infrastructure planning, noise and air quality mitigation, environmental and geotechnical analysis, climate strategy, parks and public realm, economic impact, and affordable housing strategies. The objective is to develop a phased business and implementation plan by the end of 2023, which will outline the funding, financing, and approvals needed to advance the infrastructure and servicing projects identified above to support the City's housing goals and begin the development of an interconnected community that is viable and implementable.

Ongoing Project Coordination

Coordination between Port Lands Flood Protection and other projects in the Lower Don Area is ongoing. Flood protection was initiated in 2016 and has informed other work that continues in the area. Completion of flood protection will mark the first of many major milestones with complimentary but separate efforts underway including progress on the Gardiner Expressway, East Harbour, and Broadview-Eastern flood protection projects.

5. Conclusion

The projects under construction by Waterfront Toronto represent a bold city-building initiative that will facilitate the redevelopment of the Port Lands into new vibrant, mixed-use, and dynamic communities. In addition to new iconic architecture, the project will provide Torontonians with 40 hectares (100 acres) of new parkland, wildlife habitat, and natural areas along portions of the new river valleys' northern and southern banks and mouth. An enhanced public realm, expanded pedestrian and cycling facilities, and other recreational opportunities will also be made available.

In order to ensure the City's capital investments in this new infrastructure is protected over the long term, City staff, in collaboration with Federal and Provincial partners and with Waterfront Toronto, the Toronto and Region Conservation Authority and PortsToronto, continue to advance implementation. Ensuring that the project can complete its intended objectives, advancing asset handovers and the operational assumption by the City, and setting a plan for long-term dredging operations and implementation is a next step in unlocking this once-in-generation, city-building opportunity. Implementation and unlocking the value of the City and other public lands will also require further investments as development proceeds. City staff will report back as required to advance implementation in the Port Lands further as flood protection comes to completion and the next phase of revitalization can begin.

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SIGNATURE

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ATTACHMENTS

Attachment 1: 2016 Port Lands Flood Protection Project Scope

Attachment 2: Terms Sheet - Amended Contribution Agreement with the Government of Canada, Province of Ontario and Waterfront Toronto

Attachment 3: Terms Sheet - City of Toronto-Waterfront Toronto Project Delivery Agreement for Parks and Public Realm

Attachment 4: Terms Sheet - City of Toronto-Waterfront Toronto Handover Protocols

Attachment 5: One-Time Backlog Keating Channel Dredging Program

Attachment 6: Port Lands Flood Protection Construction Photographs

Attachment 1: 2016 Port Lands Flood Protection Scope

- A Cherry Street Stormwater and Lakefilling
- B Polson Slip Naturalization
- C River Valley - Naturalization Area
- D Don Greenway (Spillway & Wetland)
- E Don Roadway Valley Wall Feature
- F East Harbour Flood Protection Land Form
- G Sediment and Debris Management Area
- H Flow Control Weirs
- I Eastern Avenue Flood Protection
- J Villiers Island Grading
- K Keating Channel Modifications
- L Promontory Park
- M River Park
- N Lake Shore Road and Rail Bridge Modifications
- O Cherry Street Bridge North (incl. BRT)
- P Cherry Street Bridge South (vehicular only)
- Q Commissioners Street Bridge (vehicular only)
- R Hydro One Integration
- S Cherry Street Re-alignment (incl. BRT)
- T Commissioners Street
- U Site Wide Municipal Infrastructure
- V Don Roadway

- Port Lands Flood Protection and Enabling Infrastructure Boundary
- Earthworks/Flood Protection
- Parks
- Bridges & Structures
- Roads and Municipal Infrastructure



Attachment 2: Terms Sheet - Proposed Amended Contribution Agreement with the Government of Canada, Province of Ontario and Waterfront Toronto

Note: The amended terms and conditions remain subject to further approvals from federal and provincial governments.

Item	Amended Terms and Conditions
Costs and Contributions	<ul style="list-style-type: none"> • Total Cost - \$1.27 billion • Canada's Contribution (federal) - \$384.1 million (unchanged) • Ontario's Contribution (provincial) - \$455.6 million (\$55.2 million incremental) • Toronto's Contribution (city) - \$423.1 million (\$22.7 million incremental) • Waterfront Toronto's Contribution - \$10 million (\$10 million incremental)
Substantial Completion Date	<ul style="list-style-type: none"> • Technical update to reflect December 31, 2024 (unchanged from previous reporting to Council).
Appropriation	<ul style="list-style-type: none"> • Added clauses that the payment of a contribution by the City in any fiscal year is subject to the annual approval of the capital budget by City Council that includes funds to cover that contribution. (This is similar to what is already in the Contribution Agreement for Federal and Provincial Governments).
Schedule B.1 - Project Description	<ul style="list-style-type: none"> • Amended clauses to define parks to be done under the Contribution Agreement (separate from work to be done under the ICIP Agreement).
Schedule B.2 - Cash Flow	<ul style="list-style-type: none"> • Revised cash flows for project expenditures to reflect updated total cost and contributions.
Schedule B.3 - Total Project Cost Breakdown	<ul style="list-style-type: none"> • Revised cost breakdown for the project to reflect updated total cost.

Attachment 3: Terms Sheet - City of Toronto-Waterfront Toronto Project Delivery Agreement for Parks and Public Realm

Item	Terms and Conditions
Costs and Contributions	<ul style="list-style-type: none"> • Total Cost - \$81.1 million • Toronto's Contribution (city) - \$32.5 million (all incremental) <p>Note that Canada's Contribution (federal) of \$48.6 million (all incremental) will be funded via a separate agreement between the Province of Ontario and Waterfront Toronto, and is subject to further approvals.</p>
Conditions of Payment and Appropriations	<ul style="list-style-type: none"> • Clauses that the payment of a contribution by the City in any fiscal year is subject to the annual approval of the capital budget by City Council that includes funds to cover that contribution. • Clauses that the agreement can be terminated in the event of termination of the tri-government Port Lands Flood Protection contribution agreement or the ICIP agreement.
Commitments of Waterfront Toronto	<ul style="list-style-type: none"> • To deliver parks and public realm components. • To design, construct and complete the project in a good and skillful manner. • To keep and maintain books, accounts and records, making them available to the City and for any City led audit.

Attachment 4: Terms Sheet - City of Toronto-Waterfront Toronto Handover Protocol Agreements

Handover Protocols are intended to establish a process whereby Waterfront Toronto transfers the operational responsibilities of completed Port Lands Flood Protection related assets and associated lands to the City of Toronto.

As noted in the report, three overarching Handover Protocols are being developed by Waterfront Toronto to provide guidelines regarding the transfer of individual assets to the City as follows:

- Handover Protocol for Roads, Bridges and Public Utilities;
- Handover Protocol for Parks and Open Spaces; and
- Handover Protocol for Unique Infrastructure (i.e. SDMA, Flood Protection Landform, new marine infrastructure).

These protocols will be generally based on the following terms:

- Identify milestones, as required, for handing over individual assets through the following two stage process:
 - 'Acceptance' - where the City agrees that that the assets are substantially complete, have been constructed in accordance with their approved drawings and specifications, and are ready for use for their intended purpose
 - 'Assumption' - the point at which the City assumes responsibility for routine operations and maintenance
- Address and set out warranty obligations, repair, maintenance, and operational responsibilities during all stages of handover.
- Address the related issue of transfers of land, and interests in land, to the City as required for the maintenance, repair, and operation of the assets.
- Following 'Acceptance' by the City that the assets are substantially complete, have been constructed in accordance with the approved drawings and specifications, and are ready for use for their intended purpose; there may be a two-year warranty period where the City may be responsible for aspects of operation and maintenance.
- Under the Port Lands Flood Protection Contribution Agreement signed by all three levels of government, operations and maintenance costs associated with completed assets are not considered an eligible expense. In certain circumstances it may be desirable to retain Waterfront Toronto on a paid service basis to perform the required operation and maintenance during the interim period between 'Acceptance' and 'Assumption.'
- 'Assumption' of an asset by the City may occur prior to the end of the warranty period but will not relieve Waterfront Toronto of its warranty obligations. However, assumption by the City will occur no later than two (2) years after acceptance.
- Upon 'Assumption' of an asset, the City will retain all liability and responsibility for the operation, maintenance and repair for such asset, except for Waterfront Toronto's remaining obligations as set out in the relevant Handover Protocol.
- If, two (2) years after 'Acceptance', the City has not assumed the asset, the City will bear the cost of any additional warranties.
- Handover Protocols may evolve over time, as new elements emerge, are considered and addressed.

Attachment 5: One-Time Backlog Keating Channel Dredging Program

Total Program Goals

- Removal of the current backlog of sediment in the Keating Channel, including annual sediment deposition in 2023 and 2024, to achieve the goal of flood protection.
- Final amounts to be confirmed but based on recent surveys there is estimated to be approximately 120,000 cubic metres in-situ (in water). Combined with the continued annual sediment deposition, it is estimated that there will be between 180,000 to 220,000 cubic metres in-situ of excess sediment.

Phase One

- Removal and sidecasting of accumulated sediment from the Keating Channel in 2023 and 2024. Removal would contribute directly to the accumulated backlog while sidecasting is required for Port Lands Flood Protection related work.
- One segment of work to be led by Waterfront Toronto, with work done to remove and sidecast as required for the Port Lands Flood Protection Project. This segment is anticipated to cost \$6 million.
- Another segment of work to be coordinated between the City, Toronto and Region Conservation Authority, Waterfront Toronto and/or PortsToronto in order to ensure that dredging activities and removal of the accumulated amounts can continue for the remainder of the 2023 dredging season (weather permitting). This segment is anticipated to cost approximately \$4 million.
- Phase one has a total cost of up to \$10 million which will be funded upfront by Waterfront Toronto and/or other parties. Costs to be reimbursed by the City in 2024 and if required in 2025 subject to budget approvals.

Phase Two

- Work to remove the remaining areas and amounts of the accumulated backlog that is required to maximize channel flows and flood protection benefits until full design depth is achieved.
- Precise volumes and costs to be finalized.
- Work to be coordinated between the City, Waterfront Toronto, Toronto and Region Conservation Authority, and/or PortsToronto, and to begin in 2024. Roles and responsibilities are to be determined.
- Total costs are to be finalized, with early estimates for phase two being \$14 million. The total early estimate for phase one and phase two is \$24 million.
- Final cost to the City and annual cash flow is to be determined based on volumes, costs and cost sharing from other governments and other parties.
- City funding is subject to budget approvals in 2024 and future years.