



WATERFRONTToronto

Port Lands Flood Protection and Enabling Infrastructure Due Diligence Presentation

1/25/2017

1. **The Port Lands**
2. **Don River Flood Protection**
3. **The Project**
4. **Why Undertake Due Diligence**
5. **Due Diligence Findings**
6. **Project Benefits**
7. **Timeline and Next Steps**

The Port Lands





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Don River Flood Protection



Flood Plain



Flood Protected



Flood Protection Landform

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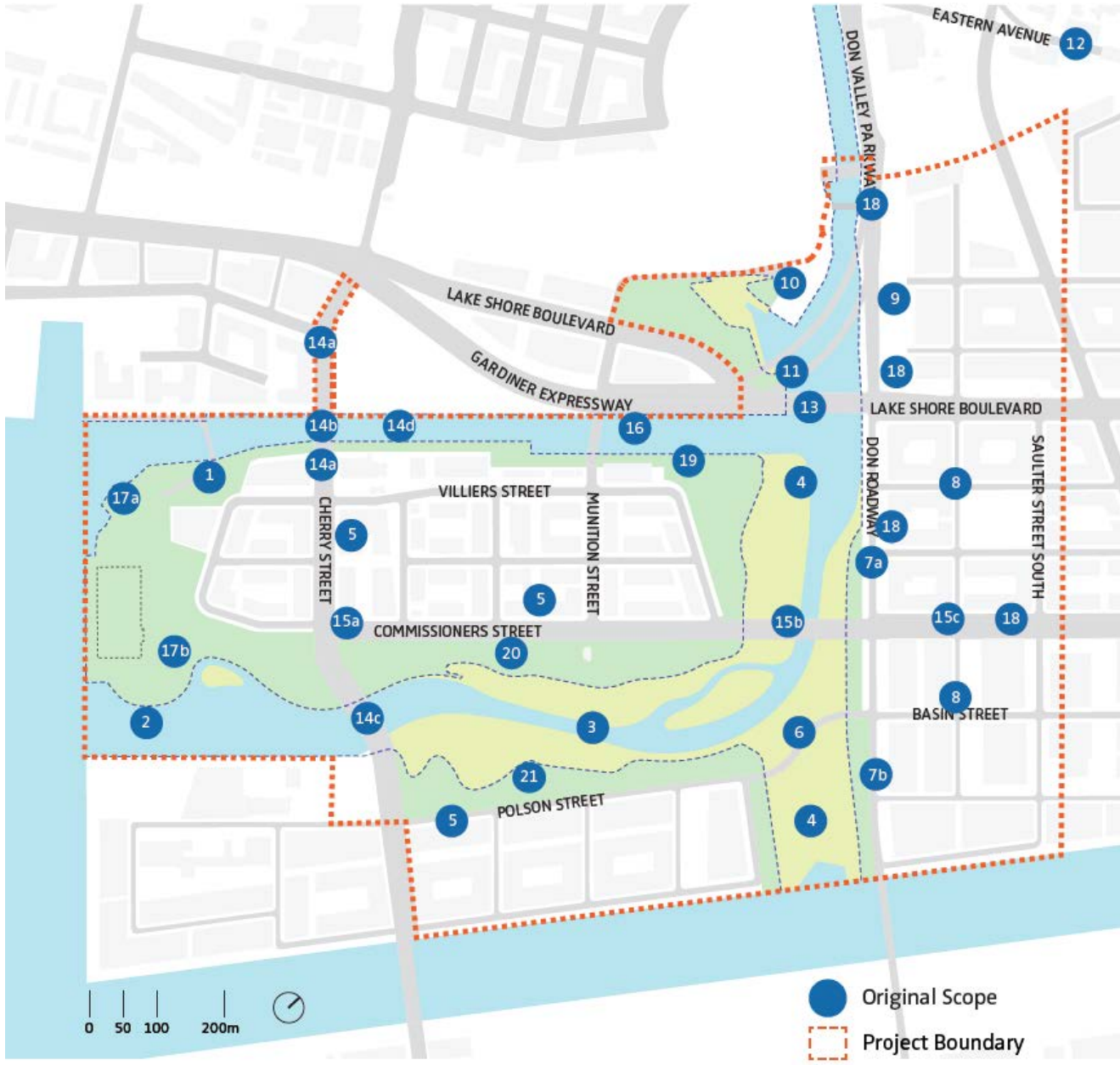
The Project: The Port Lands Today



Project Scope: individual Components

Legend

- 1 Essroc Quay Lakefilling
- 2 Polson Slip Naturalization
- 3 River Valley System
- 4 Don Greenway (Spillway & Wetland)
- 5 Site Wide Municipal Infrastructure
- 6 Basin Street Bridge
- 7a Don Roadway North
- 7b Don Roadway South
- 8 Don Roadway Valley Wall Feature
- 9 First Gulf/Unilever Site Flood Protection Land Form
- 10 Sediment and Debris Management Area
- 11 Flow Control Weirs
- 12 Eastern Ave. Flood Protection
- 13 Lake Shore Road & Rail Bridge Modifications
- 14a Cherry Street Re-alignment
- 14b Cherry Street Bridge North
- 14c Cherry Street Bridge South
- 14d Old Cherry Street Bridge Demolition
- 15a Commissioners Street West to New Cherry Street
- 15b Commissioners Street Bridge
- 15c Commissioners Street East to Saulter Street
- 16 Keating Channel Modifications
- 17a Promontory Park North
- 17b Promontory Park South
- 18 Hydro One Integration
- 19 Villiers Island Grading
- 20 River Park North
- 21 River Park South



● Original Scope
 [Dashed Orange Line] Project Boundary

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Understand the project's unknowns and provide as much assurance as possible on costs, risks, and schedule to reduce uncertainty

- Develop the design concept for the project – beyond the EA design
- Define project scope
- Detailed site-specific information on soils, etc.
- Environmental and regulatory approval requirements and processes
- Construction logistics
- Risk identification, assessment and quantification = contingency setting
- Implementation strategies and schedule

Achieves an exceptional level of due diligence for a large public infrastructure project

- **Conceptual designs** prepared for key project components allowed for better understanding of unknown conditions
 - Informed how the project will be constructed and implications for the cost, schedule and risk
- **Refined Project scope** to better balance flood protection and development-enabling infrastructure in light of the new cost, schedule and risk information
- **Updated construction cost estimate** based on the concept design and refined project scope
- **Updated project schedule** that includes design, regulatory and environmental approvals and construction
- **Risk Register** comprehensive list of potential risks and opportunities,
- **Probabilistic risk simulation model** developed using updated schedule, cost and risk register
 - Identified the probability of the project meeting its cost and schedule goals
 - Informed decision making on schedule, cost estimate and risks contingencies

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7. Questions

Due Diligence: Key Findings

Cost Estimate: \$1.25 billion

Probability of completion within \$1.25 billion: 90%

Major Risks/Cost Drivers:

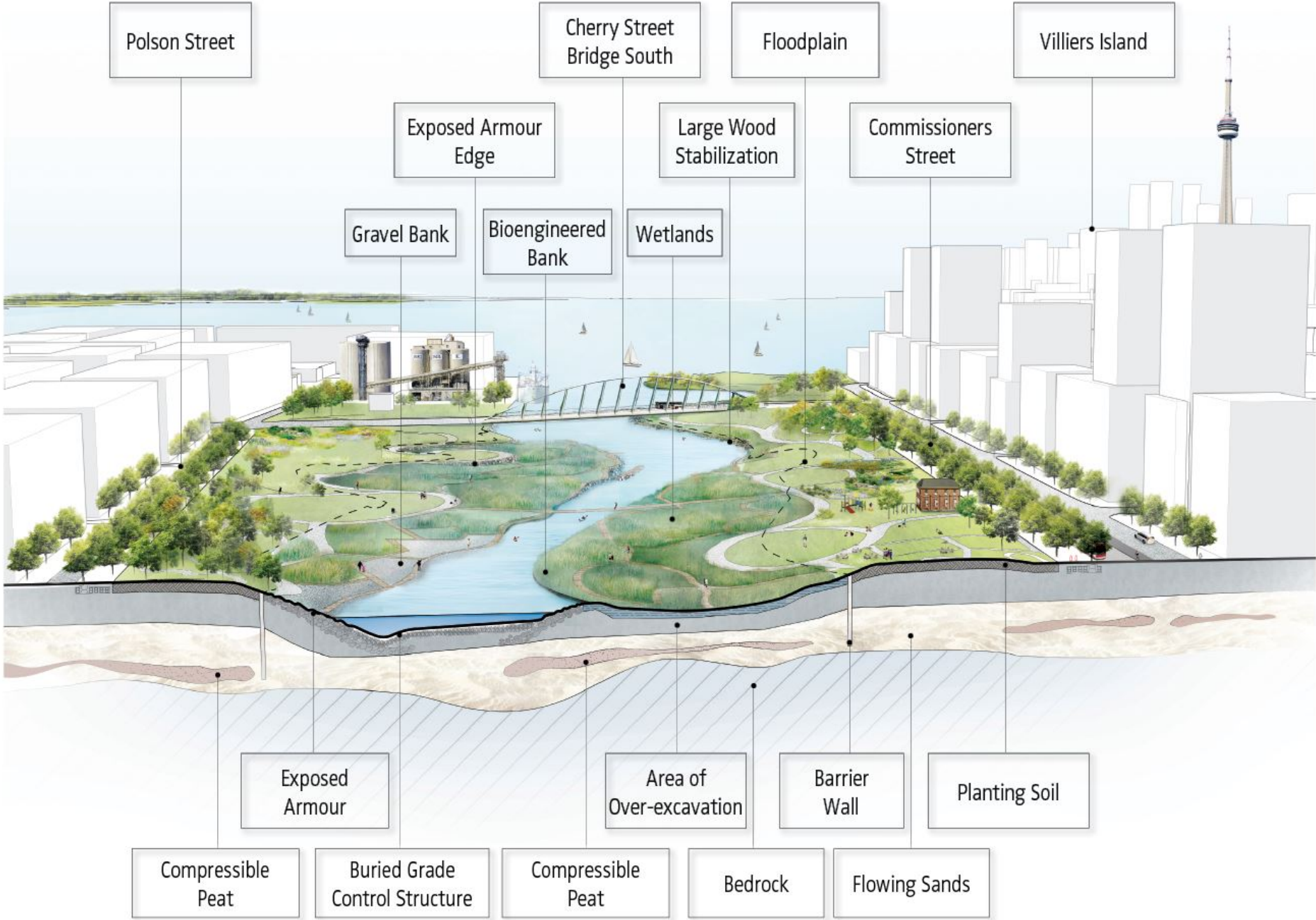
- Site Conditions: flowing sand, compressible peat
- No established regulatory approval process for creating a river in brownfield

Contingency: 30%

Timeline: Seven-year construction period










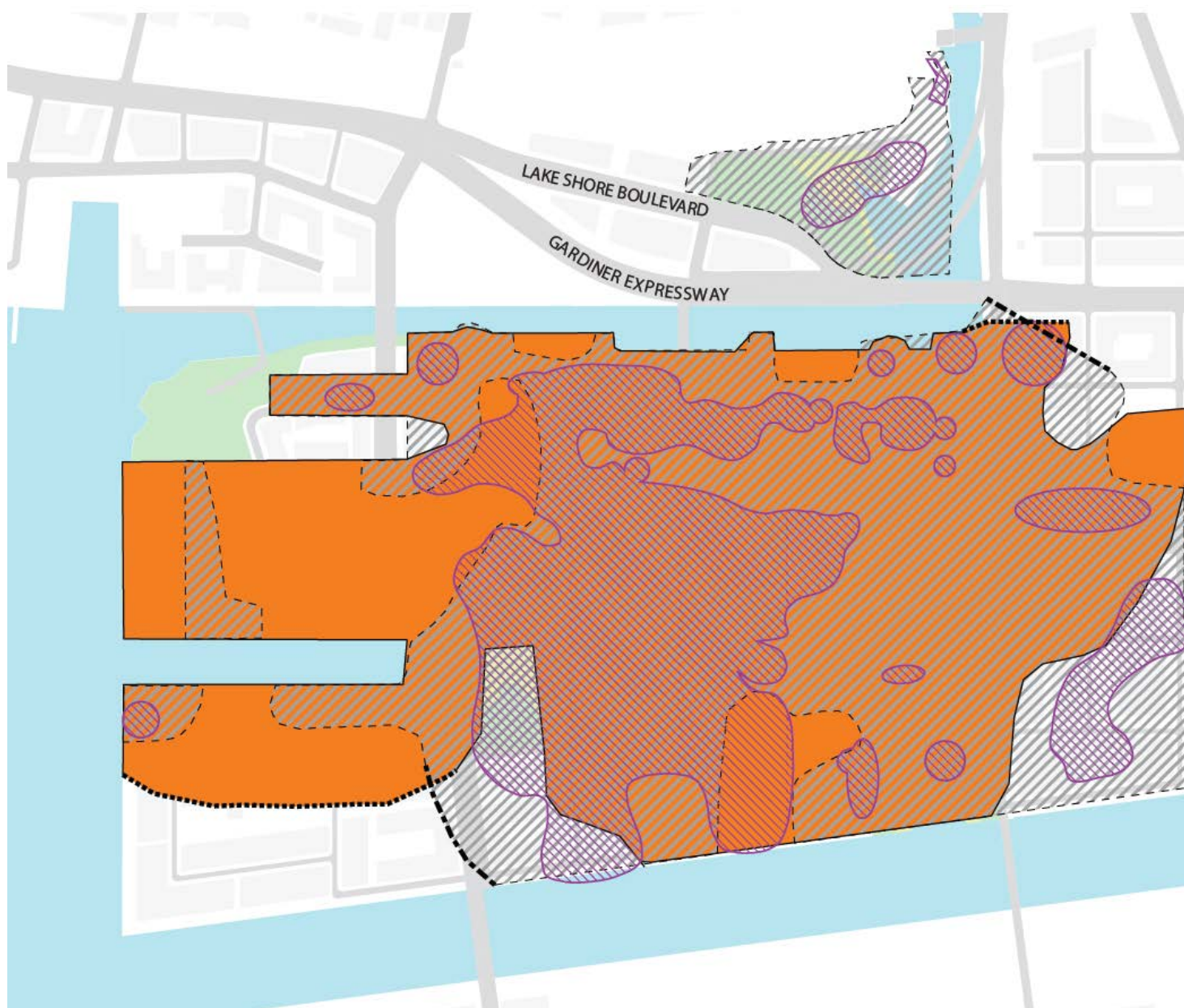
Due Diligence: Key Findings



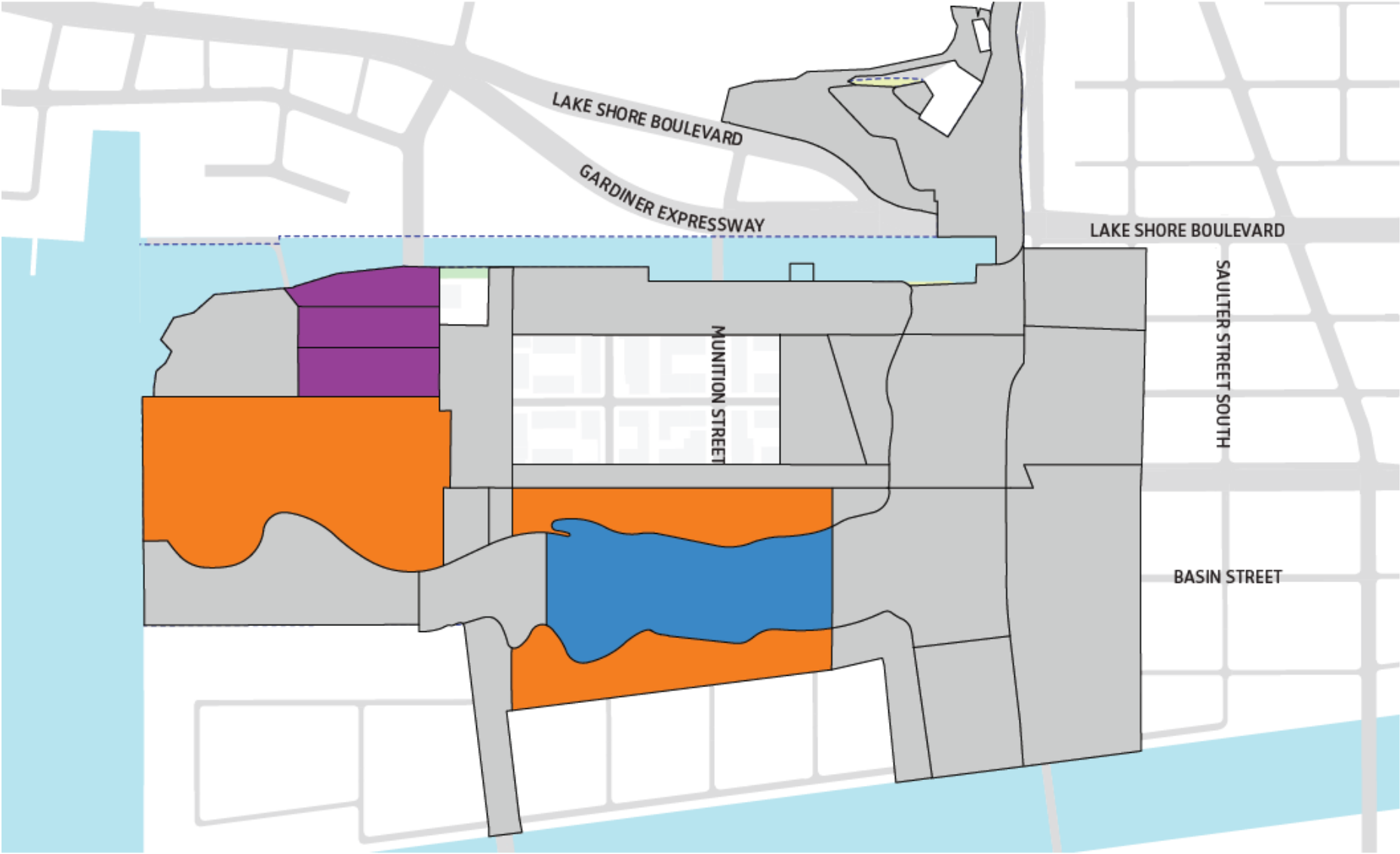
Due Diligence Findings: Soil and Water Contamination Profile

Legend

-  Zone affected by Surface Contamination
-  Surface Contamination Extent
-  Surface Contamination Extent Unknown
-  Zone affected by Significant Contamination
-  Zone affected by Sub-surface Contamination
-  Sub-surface Contamination Extent
-  Sub-surface Contamination Extent Unknown



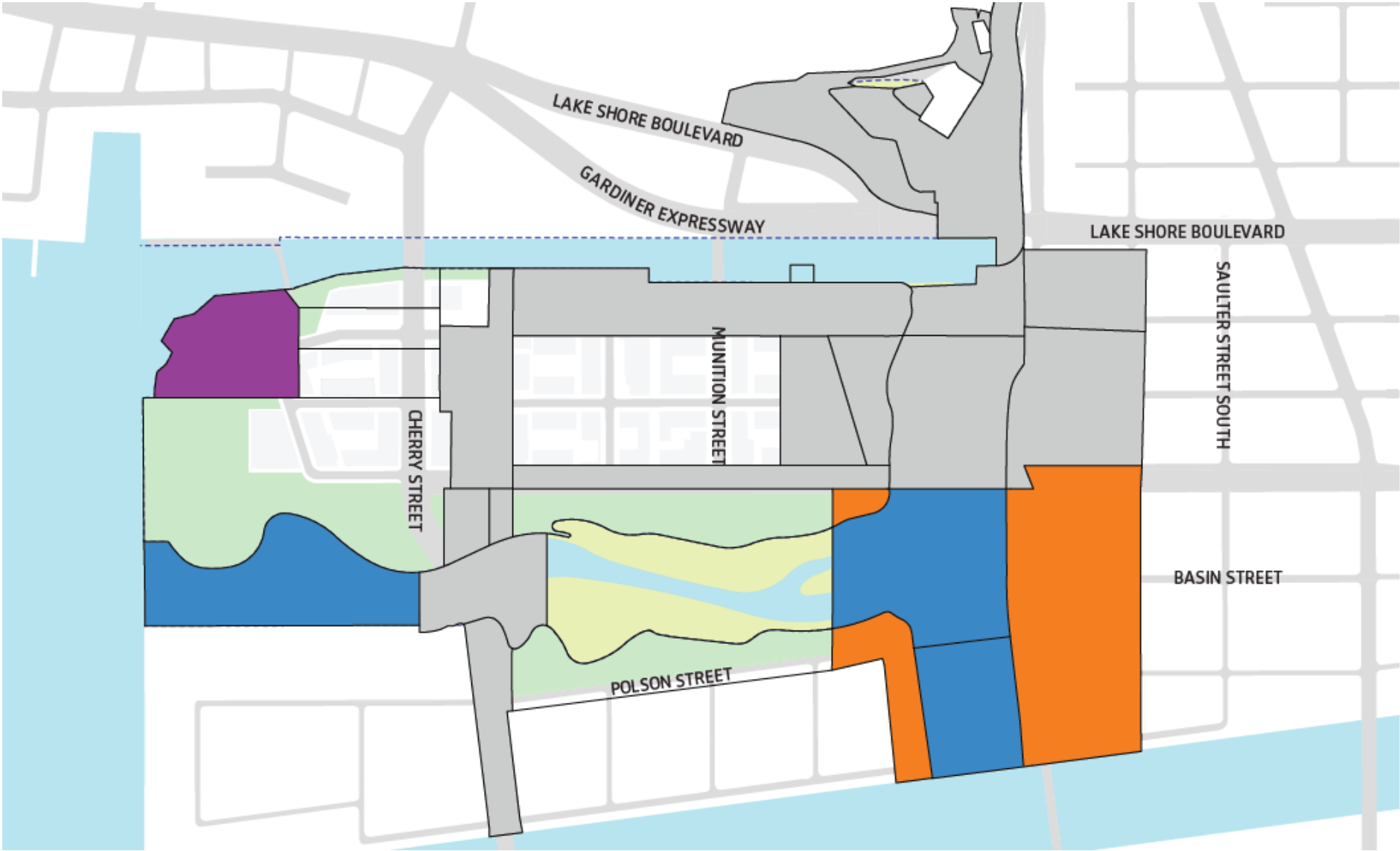
Due Diligence Findings: Excavation and Fill Sequencing, Stage 1



Legend

- Area to Cut
- Area to Fill
- RA/RM Cut Area to Fill
- Area to be Constructed

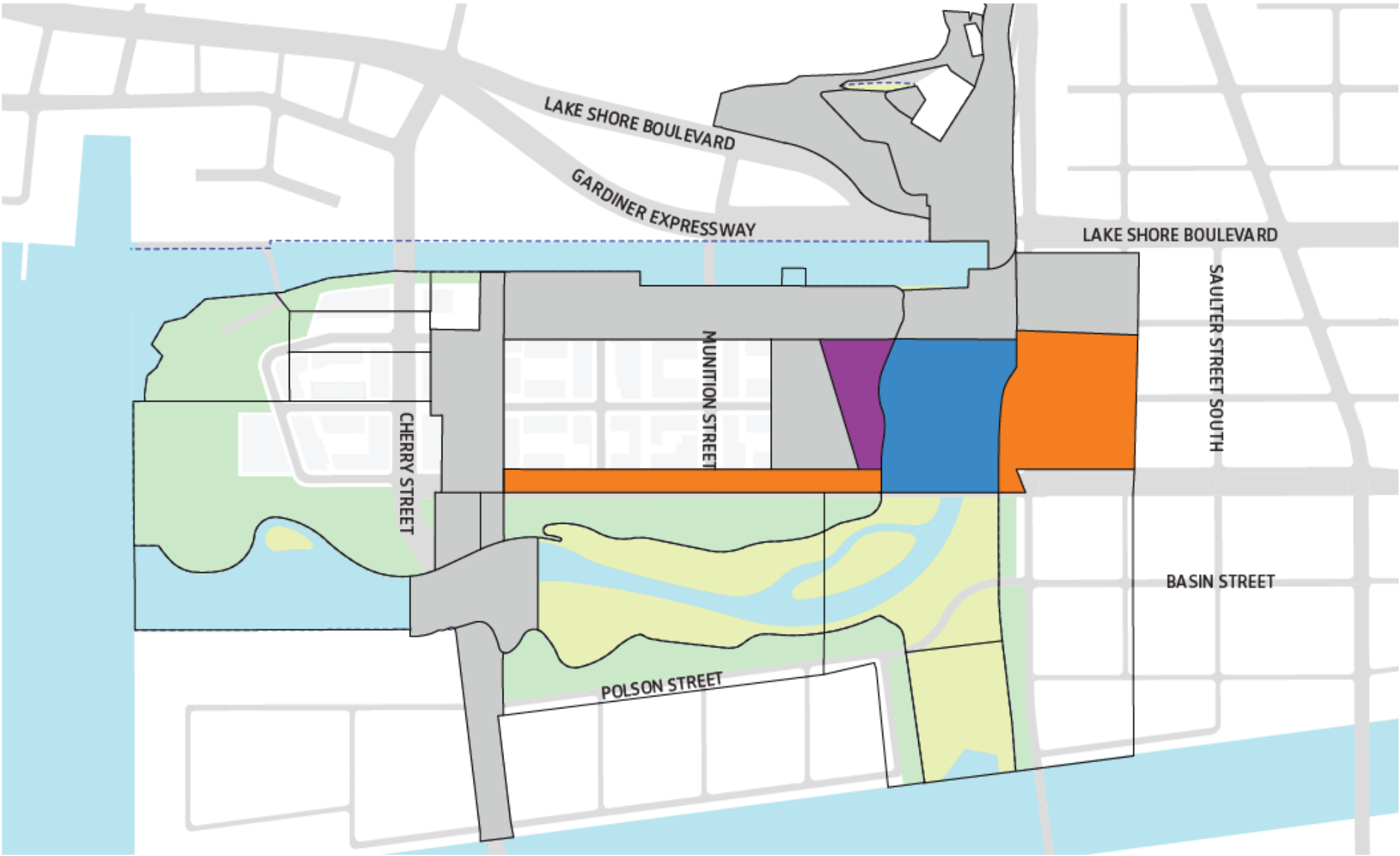
Due Diligence Findings: Excavation and Fill Sequencing, Stage 2



Legend

- Area to Cut
- Area to Fill
- RA/RM Cut Area to Fill
- Area to be Constructed

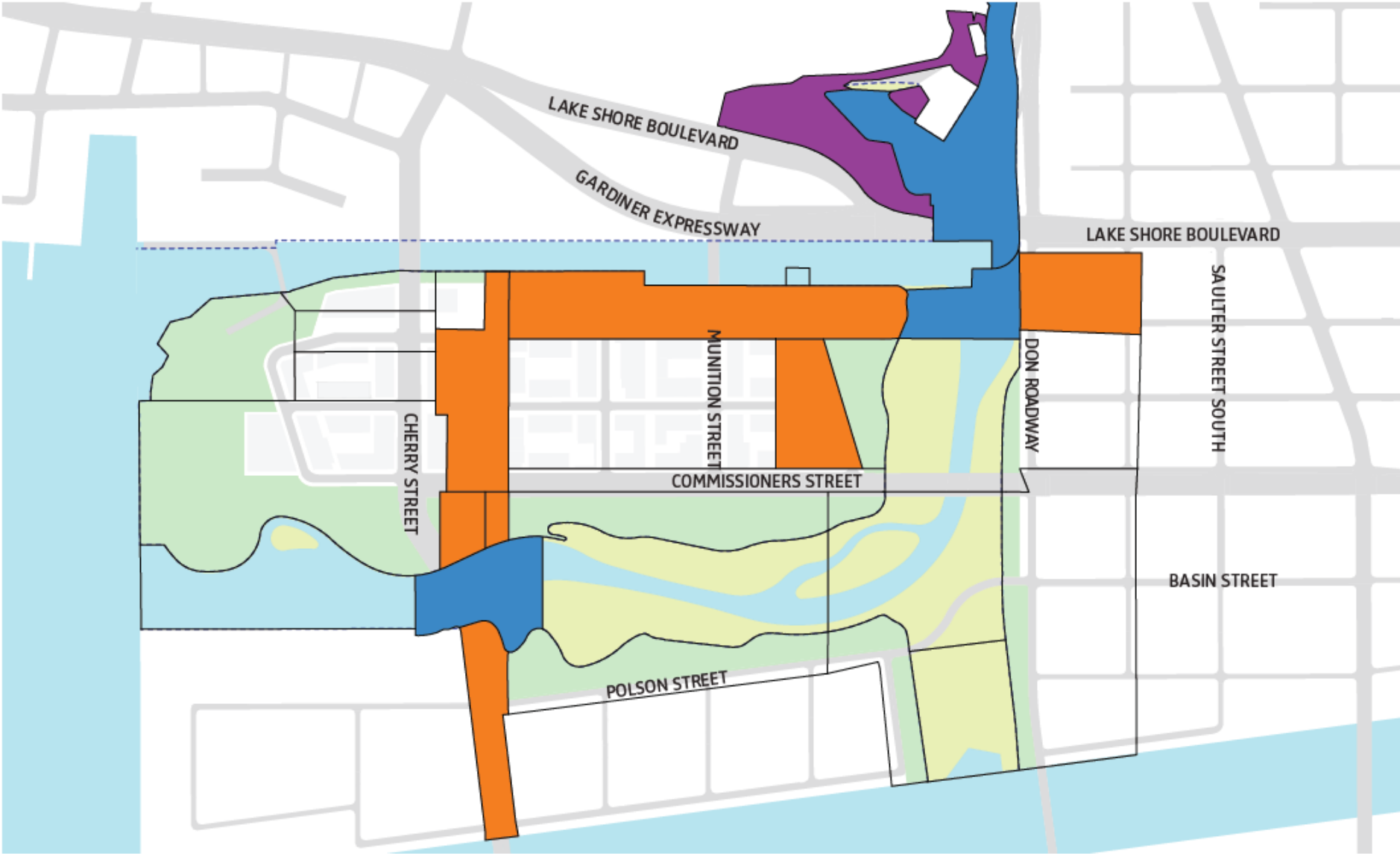
Due Diligence Findings: Excavation and Fill Sequencing, Stage 3



Legend

- Area to Cut
- Area to Fill
- RA/RM Cut Area to Fill
- Area to be Constructed

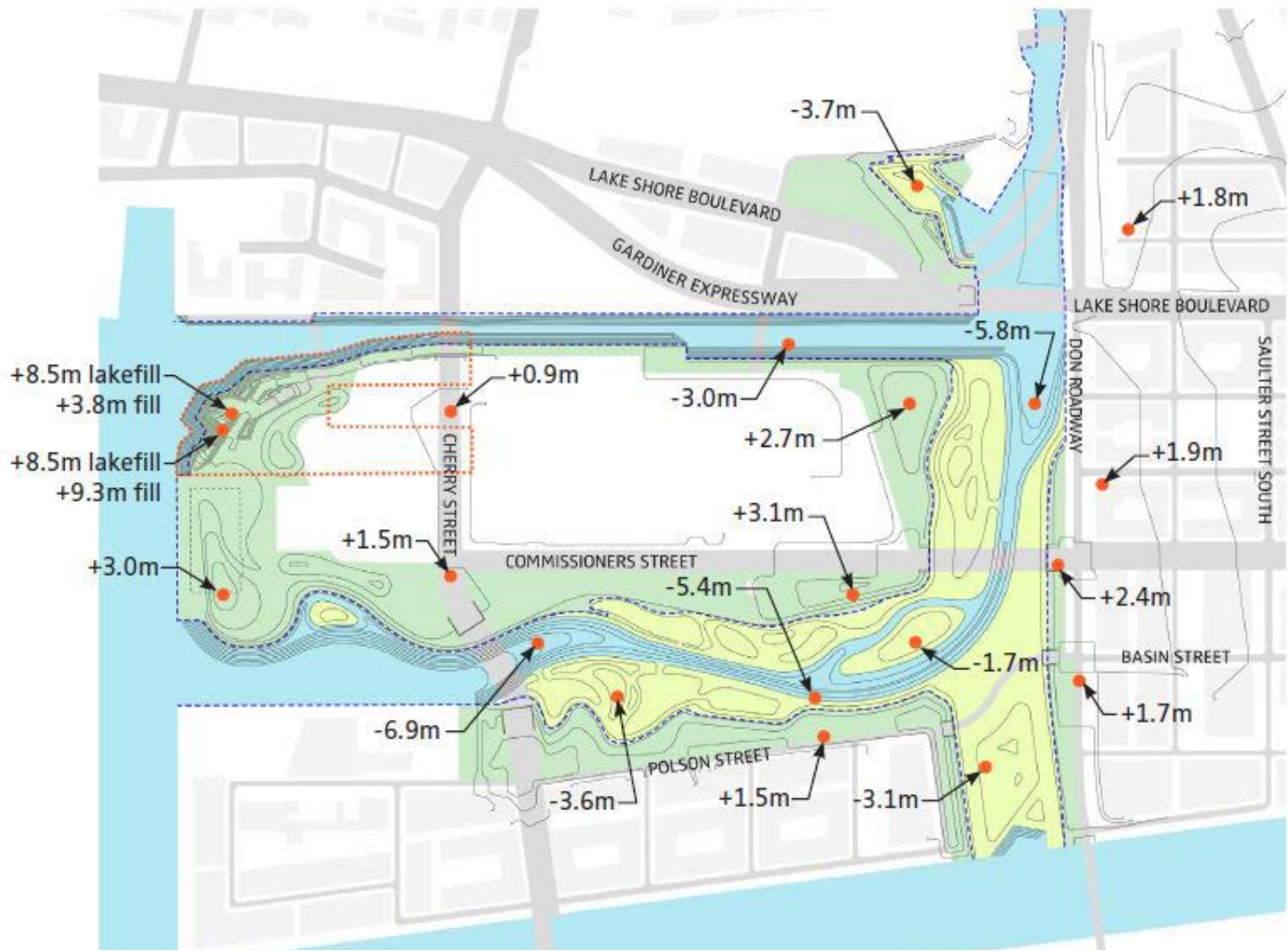
Due Diligence Findings: Excavation and Fill Sequencing, Stage 4



Legend

- Area to Cut
- Area to Fill
- RA/RM Cut Area to Fill
- Area to be Constructed








Due Diligence Findings: Site Grading

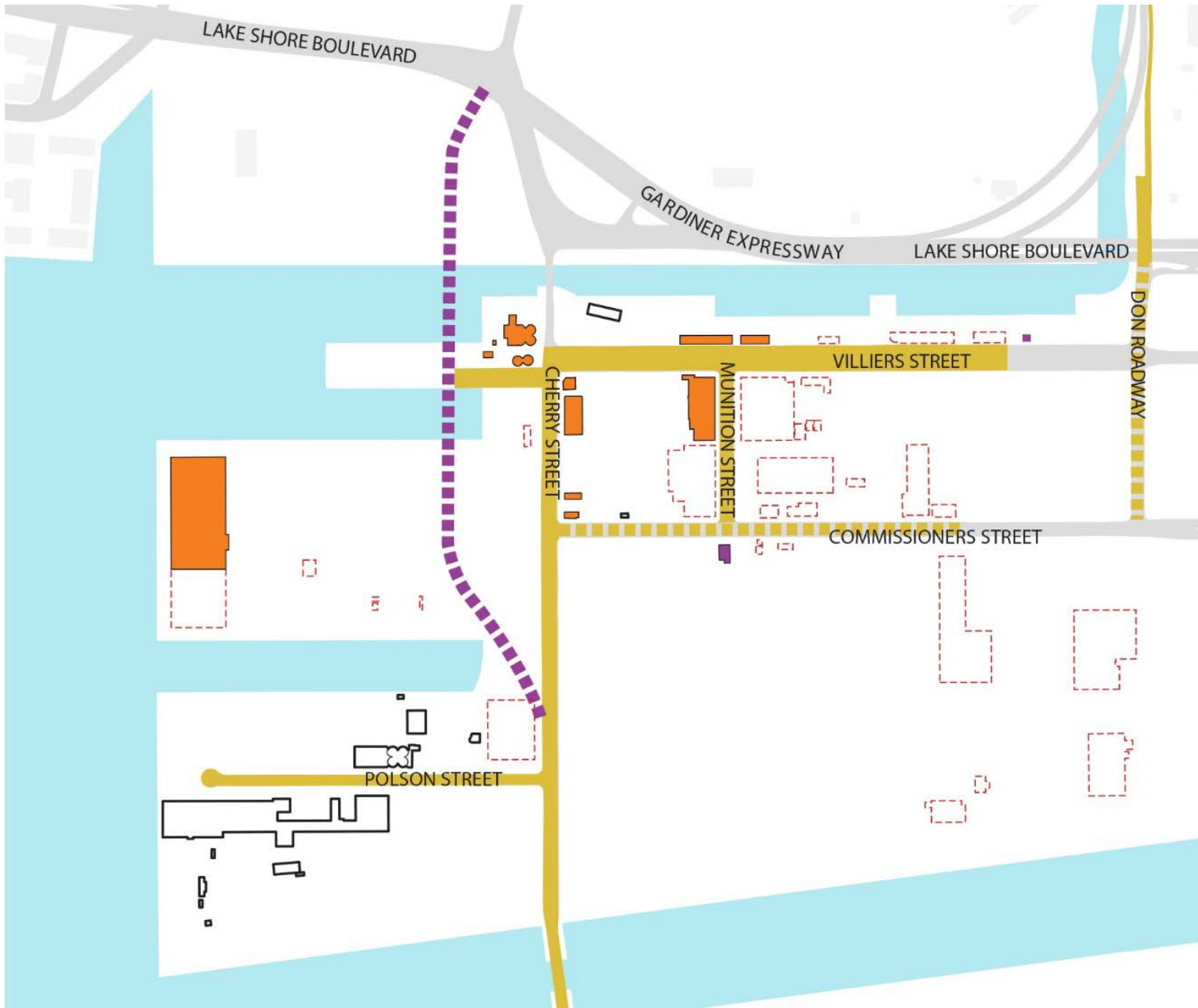


- Legend**
- Spot Elevation
 - ±m Grade Difference
 - Proposed 1.0m Contour Lines
 - - - Regulatory Flood Line
 - Zone of Lakefill

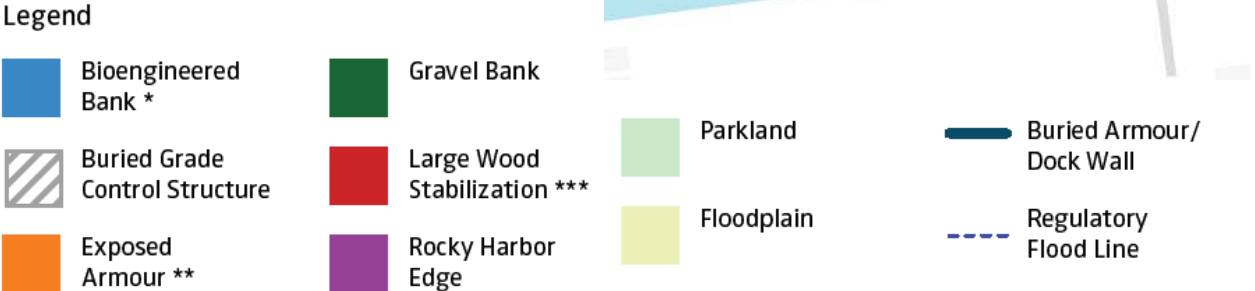
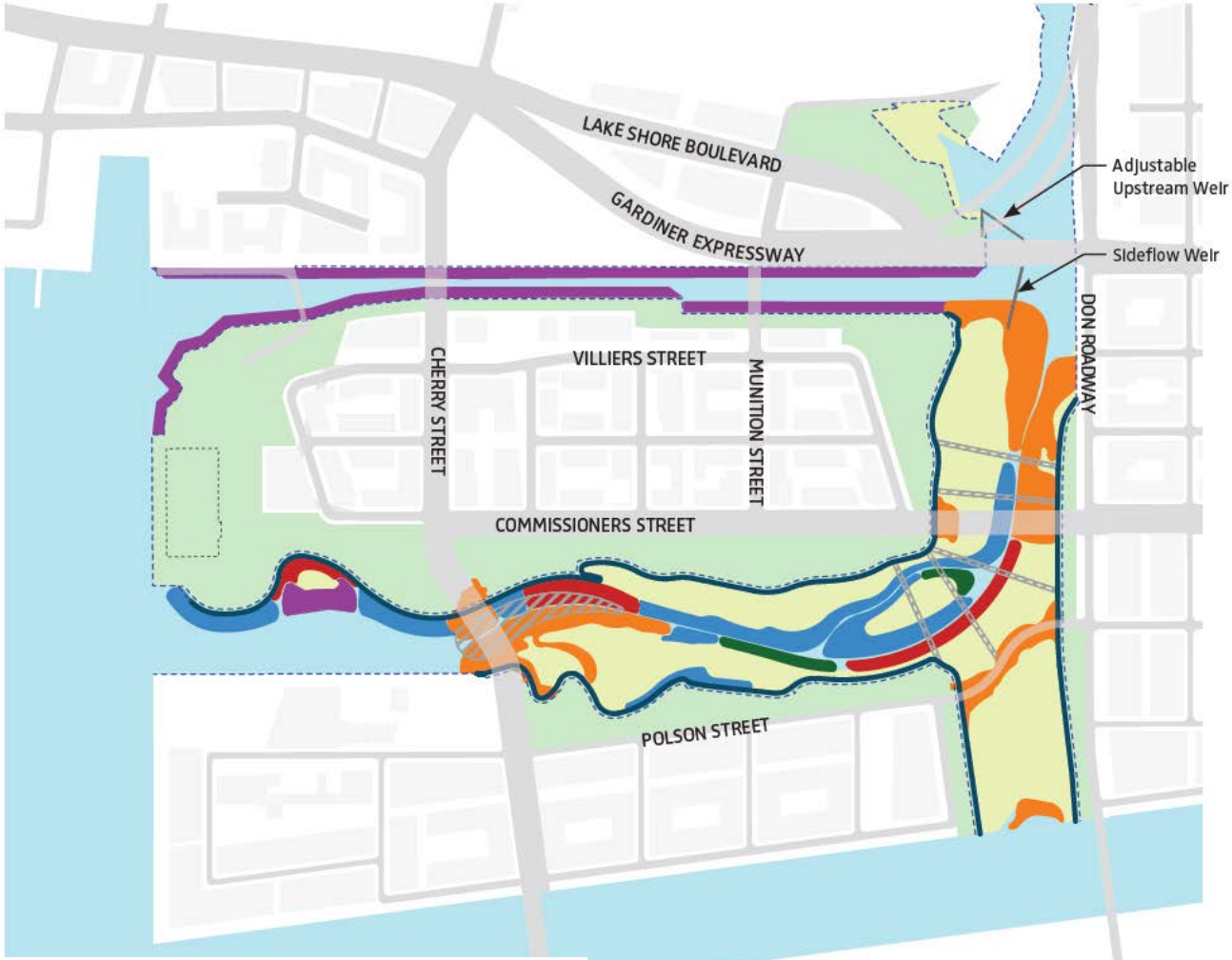
Due Diligence Findings: Interim Road Network and Building Removal/Relocation

Legend

-  Heritage Building
-  Heritage Building to be relocated
-  Building to Remain
-  Building to be Demolished
-  Future Cherry Street
-  Road Access to be Maintained
-  Road to be Replaced



Due Diligence Findings: Flood Protection Components



Due Diligence Findings: Wetland Habitat and Park Components



Legend

- | | | | |
|-------------------------|---------------------|-----------------------|-------------------|
| River Valley + Wetlands | Esplanade | Other Parkland | Trail |
| Wooded Upland | Playground | Floodplain | Small Boat Launch |
| Passive Use Lawn | Public Gardens | Private Land | Fishing Area |
| Active Recreation | Event Space | Regulatory Flood Line | |
| Water Access | Prospect / Overlook | | |

Due Diligence Findings: Bridges and Roads



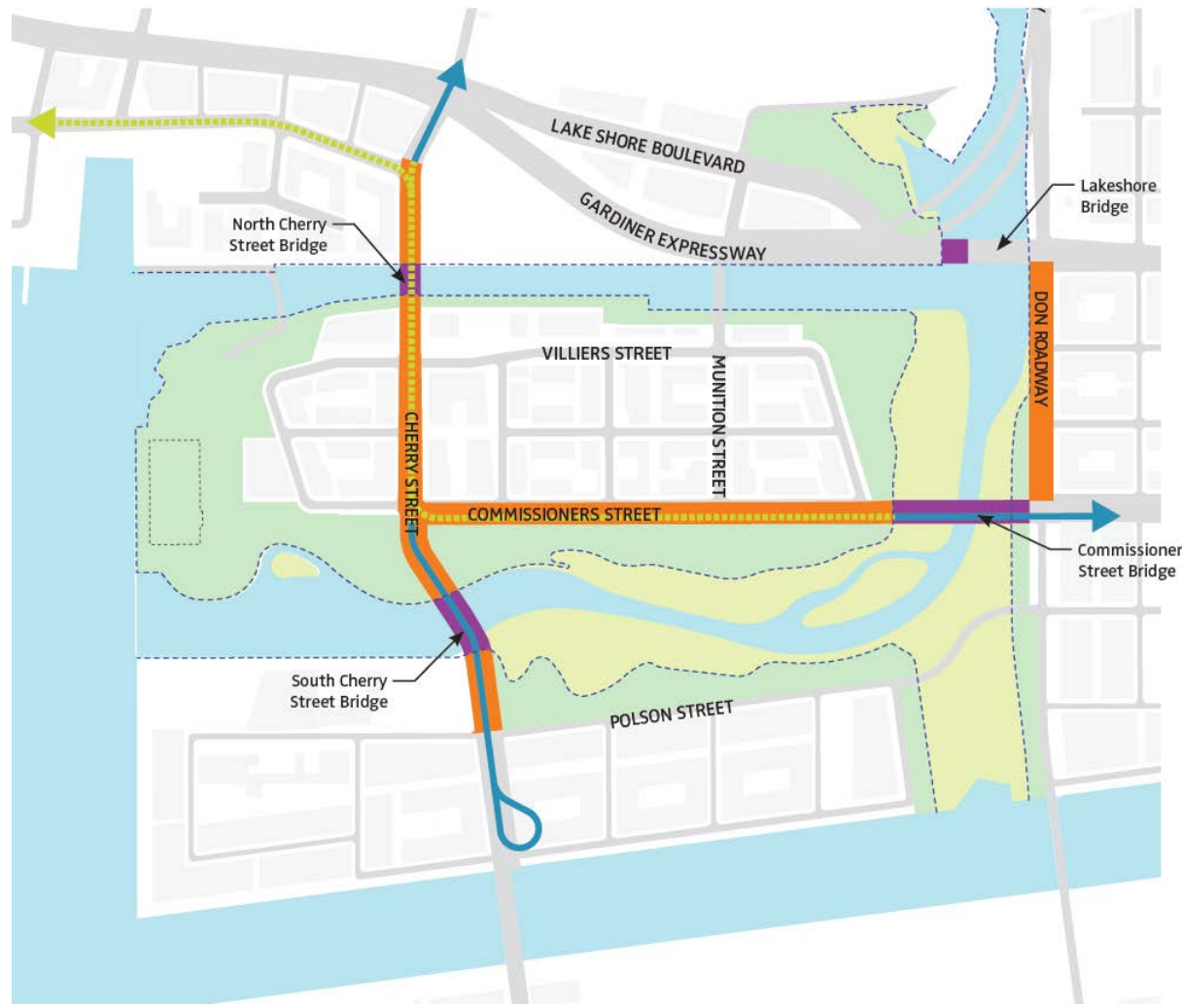
New Cherry Street



Commissioners Street



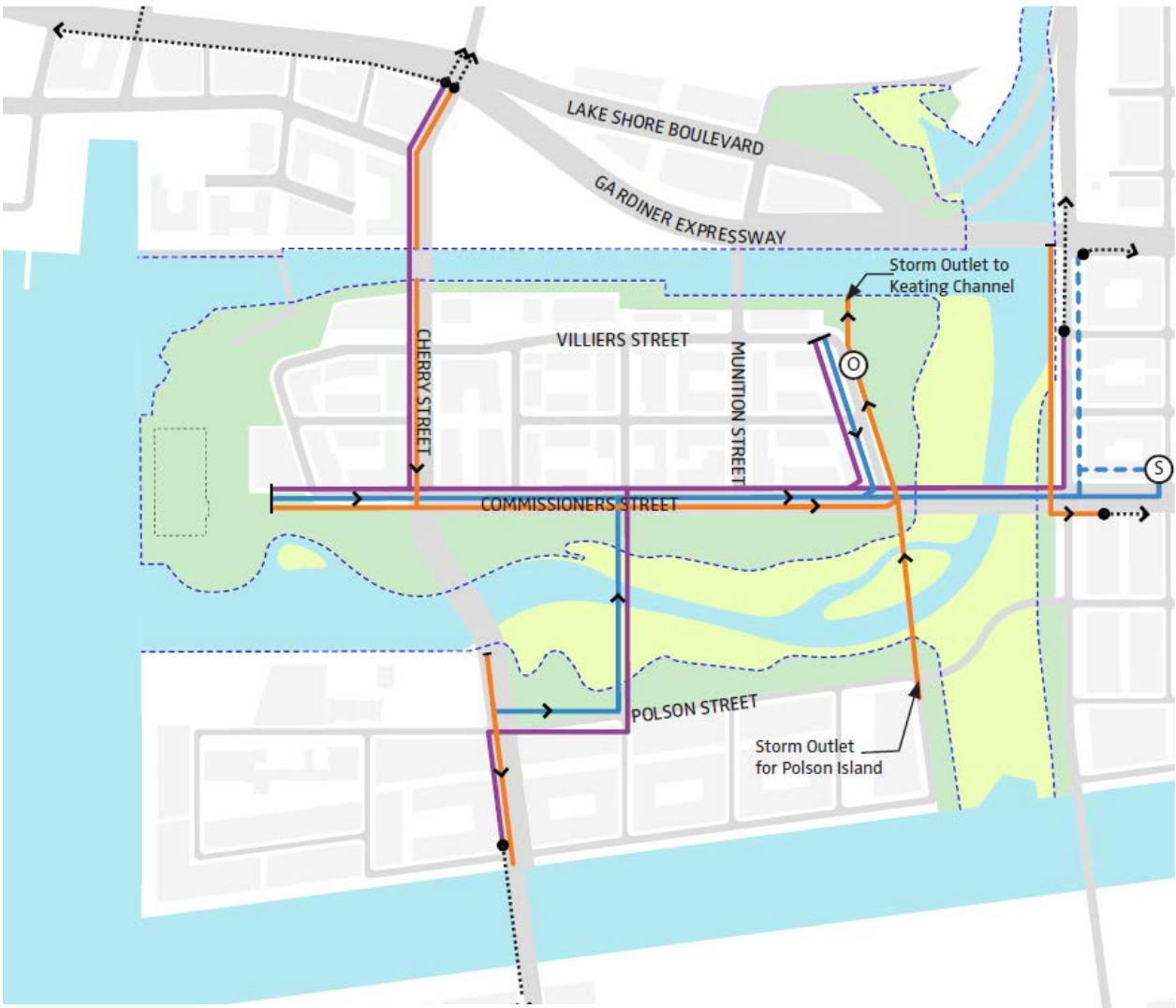
Don Roadway



Legend

- Proposed Roads
- Proposed Bridges
- Bridges (not in scope)
- Interim BRT (Future LRT Route, not in scope)
- Regulatory Flood Line
- Bus Route (in mixed traffic)

Due Diligence Findings: New and Replacement Services



Legend

- Connect to Existing Infrastructure
- Force main Existing S
- Storm Sewer
- Regulatory Flood Line
- Gravity-Flow Sewer
- Sanitary F Station
- Proposed Water Main
- BFF Outlet Shaft

Due Diligence Findings: Project Scope and Cost Estimate

Original Cost Estimate (\$YoE): \$975 million

- Key finding that shaped revised cost estimate
 - Site Conditions: flowing sand, compressible peat = additional soil excavation, soil/groundwater treatment
 - Escalation/Inflation
- Re-evaluated Project Scope
 - Three new components identified
 - Three components deferred
 - Scope reductions

Current Cost Estimate (\$YoE): \$1.25 billion

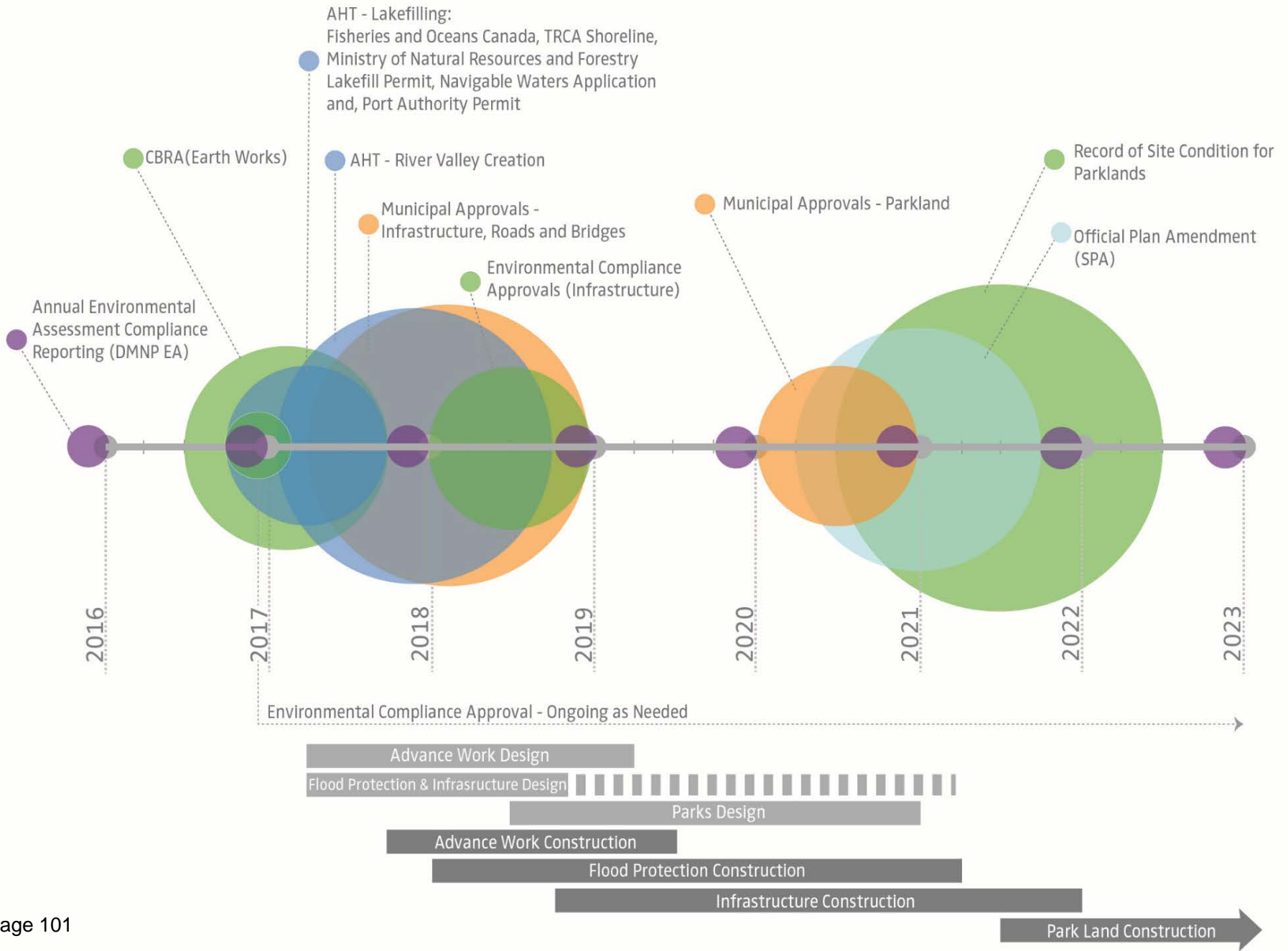
Includes:

- Contingency
- Design Allowance
- Indirect Contractor Costs
- Soft costs (legal, approvals, engineering)
- Non-recoverable HST

		Estimated Cost (YOE \$millions)			Explanation	
		Recommended Scope	Original Scope	Variance		
1	2	Essroc Quay Lakefilling and Polson Slip Naturalization	\$ 125	\$ 90	\$ 35	Refined design of lakefill and naturalized river mouth; more complex construction requirements.
3	4	River Valley System and Don Greenway (Spillway and Wetland)	\$ 486	\$ 128	\$ 358	Refined earthwork methodology/quantity and cost assumptions and environmental management requirements.
5		Site Wide Municipal Infrastructure	\$ 102	\$ 36	\$ 66	Municipal services originally carried with roads is now broken out separately, actual network design have replaced previous allowances.
6		Basin Street Bridge	-	\$ 37	\$ (37)	
7a	7b	Don Roadway North and South	\$ 7	\$ 63	\$ (56)	South portion deferred. Current estimate breaks out costs for municipal services and Hydro One infrastructure modifications elsewhere. See items 5 & 18.
8		Don Roadway Valley Wall Feature	\$ 27	\$ 12	\$ 15	Refined design
9		First Gulf/Unilever Site Flood Protection Landform	\$ 5	\$ 5	\$ 0	
10		Sediment and Debris Management Area	\$ 78	\$ 53	\$ 25	Refined design
11		Flow Control Weirs	\$ 38	\$ 38	\$ 0	
12		Eastern Avenue Flood Protection	\$ 5	\$ 5	\$ 0	
13		Lake Shore Road and Rail Bridge Modifications	\$ 19	\$ 71	\$ (52)	Dimensions reduced from prior assumptions. Proposed Gardiner/Lake Shore reconfiguration has eliminated need for the rail bridge modifications.
14a		Cherry Street Re-alignment (incl. BRT)	\$ 22	\$ 62	\$ (40)	Current estimate breaks out costs for municipal services elsewhere. See item 5. Improvements deferred south of Polson Street.
14b		Cherry Street Bridge North (incl. BRT)	\$ 55	\$ 32	\$ 23	Revised pricing assumptions and additional design information.
14c		Cherry Street Bridge South (vehicular only)	\$ 42	\$ 42	\$ 0	
14d		Old Cherry Street Bridge Demolition	\$ 4	\$ 13	\$ (9)	Reduced extent of dockwall work related to demolition.
15a		Commissioners Street West (incl. BRT)	\$ 18	\$ 40	\$ (22)	Current estimate breaks out costs for municipal services elsewhere. See item 5.
15b		Commissioners Street Bridge (vehicular only)	\$ 43	\$ 54	\$ (11)	Revised pricing assumptions and additional design information.
15c		Commissioners Street East (vehicular only)	\$ 7	\$ 60	\$ (53)	Current estimate breaks out costs for municipal services and Hydro One infrastructure modifications elsewhere. See Items 5 & 18.
16		Keating Channel Modifications	\$ 35	\$ 50	\$ (15)	Duplicate scope eliminated.
17a	17b	Promontory Park North and South	\$ 42	\$ 63	\$ (21)	Refined design and park programming. Full landscaping limited to south end of park.
18		Hydro One Integration	\$ 12	\$ 21	\$ (9)	Reduced scope of work assumed required specifically to enable flood protection. Note: original estimate also included supplementary allowances for modifications to Hydro One assets in Items 7a & 15c.
19		Villiers Island Grading	\$ 28	-	\$ 28	New scope required to achieve complete flood protection without reliance on adjacent development progress.
20		River Park North	\$ 23	-	\$ 23	Partially replaces deferred (north) portion of Promontory Park.
21		River Park South	\$ 27	-	\$ 27	Partially replaces deferred (north) portion of Promontory Park.
		Total	\$ 1,250	\$ 975	\$ 275	

● Original Scope ● Added Scope ● Deferred Scope

Project Approvals and Construction Timeline



Due Diligence Key Findings: Construction Coordination



Legend

- 1 Don River Metrolinx Rail Bridge Widening/Lengthening
- 2 GO Transit Electrification
- 3 Don Rail Yard Expansion
- 4a Gardiner Expressway East Hybrid 3 Implementation
- 4b Gardiner Expressway-Don Valley Parkway Ramp Demolition
- 4c Lake Shore Boulevard Realignment
- 5 Gardiner East Linear Public Space
- 6 First Gulf/Unilever Site
- 7 The Don River and Central Waterfront Project

Due Diligence Key Findings: Peer Review

- Unprecedented Project
- Important to Peer Review
- Independent review by qualified organizations
- Examine Report's adequacy and accuracy



The Netherlands Ministry of Infrastructure and Environment

A global construction services provider specializing in water and marine-based projects.

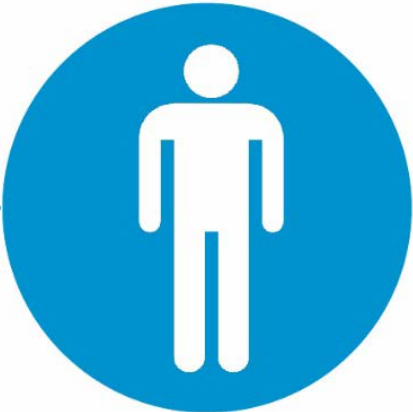


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Project Benefits: Economic Impact and Jobs



\$5.1 billion
in value to the Canadian economy



51,900
full time years of employment
and \$4.0 billion in labour income



\$1.9 billion
in government revenues

Source: Economic Impacts of Planned Investments, urbanMetrics, 2016

Unlocking Future Development: Port Lands and First Gulf/Unilever Site



Sustainable, Livable & Beautiful Communities



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The Project:

Funding:

City of Toronto Council has directed staff to identify funding its one-third share through the 2017-2026 capital budget process. The Government of Canada and Province of Ontario have not yet committed funding .

Start Date:

The Project is not yet fully funded and, as a result, there is no official start date for construction at this time, with the exception of the Essroc Quay Lakefilling Project

Essroc Quay Lakefilling:

Funding:

Committed

Start Date:

Detailed Design Starts February 2017

Construction Starts August 2017

Consultation:

Stakeholder engagement in early 2017

Port Lands Framework Plan, Villiers Island Precinct Plan, and Transportation and Servicing Master Plan:

Waterfront Toronto and the City of Toronto have continued to refine the plans since the public and stakeholder consultation in Fall 2015

Stakeholder update will follow in early 2017