

# Table of Contents

## Executive Summary

	page
<b>1. Introduction .....</b>	<b>1-1</b>
1.1 Project Background.....	1-1
1.2 Project Goals and Objectives .....	1-3
1.3 Proponent .....	1-5
1.4 The Ontario EA Act.....	1-6
1.4.1 Co-ordinated EA Process .....	1-9
1.4.2 Lower Don Lands Environmental Assessment Master Plan (LDL EAMP) .....	1-10
1.5 Other Approvals.....	1-12
1.6 Overview of EA Report .....	1-13
<b>2. Purpose of the Undertaking.....</b>	<b>2-1</b>
2.1 Problem Assessment.....	2-1
2.1.1 Ecologically Dysfunctional River Mouth.....	2-1
2.1.2 Flood Risk Vulnerability .....	2-2
2.1.3 Derelict Waterfront.....	2-4
2.2 Opportunity Assessment.....	2-4
2.2.1 A Naturalized River Mouth.....	2-4
2.2.2 Flood Protection.....	2-5
2.2.3 Revitalized Waterfront .....	2-5
2.2.3.1 Waterfront Toronto’s Sustainability Framework .....	2-6
2.2.3.2 International Design Competition .....	2-6
2.2.3.3 Port Lands Acceleration Initiative (PLAI).....	2-9
2.3 Study Areas .....	2-10
2.3.1 Project Study Area.....	2-10
2.3.2 Impact Assessment Study Area.....	2-13
2.4 Temporal Boundaries.....	2-15
<b>3. Description of the Potentially Affected Environment .....</b>	<b>3-1</b>
3.1 River Characteristics in the Project and Impact Assessment Study Areas .....	3-1
3.1.1 Channel Origins .....	3-6
3.1.1.1 Geology of the Project and Impact Assessment Study Areas.....	3-6
3.1.1.2 Soils of the Project and Impact Assessment Study Areas .....	3-6
3.1.1.3 Geomorphology of the Project and Impact Assessment Study Areas .....	3-7
3.1.2 Hydrology.....	3-7
3.1.3 Flooding .....	3-9
3.1.4 Water Quality .....	3-12
3.1.4.1 Impact Assessment Study Area .....	3-13
3.1.4.2 Project Study Area.....	3-13
3.1.5 Sediment Quality and Quantity .....	3-16
3.1.5.1 Sedimentation Modelling .....	3-16
3.1.5.2 Sediment Characterization .....	3-17

	3.1.5.3	Sediment Quality .....	3-17
	3.1.5.4	Sediment Quantity and Sediment Management.....	3-18
	3.1.6	Debris Management.....	3-19
	3.1.7	Ice Management .....	3-19
3.2		Natural Environment .....	3-19
	3.2.1	Designated Natural Areas.....	3-20
	3.2.1.1	Wetlands.....	3-22
	3.2.1.2	Areas of Natural and Scientific Interest (ANSI) .....	3-22
	3.2.1.3	Environmentally Significant Areas (ESAs) .....	3-23
	3.2.2	Vegetation.....	3-24
	3.2.2.1	Vegetation Communities .....	3-24
	3.2.2.2	Flora.....	3-26
	3.2.3	Terrestrial Wildlife .....	3-29
	3.2.3.1	Impact Assessment Study Area .....	3-29
	3.2.3.2	Project Study Area.....	3-32
	3.2.4	Fisheries and Aquatic Habitat.....	3-32
	3.2.4.1	Impact Assessment Study Area .....	3-32
	3.2.4.2	Project Study Area.....	3-34
	3.2.5	Landscape Connectivity and Cover .....	3-39
	3.2.5.1	Impact Assessment Study Area .....	3-39
	3.2.5.2	Project Study Area.....	3-39
3.3		Soil and Groundwater Contamination .....	3-39
	3.3.1	Overburden Conditions .....	3-40
	3.3.2	Groundwater Conditions .....	3-41
	3.3.3	Overburden Quality.....	3-41
	3.3.4	Groundwater Quality .....	3-41
3.4		Socio-economic Environment .....	3-41
	3.4.1	Population and Demographics.....	3-44
	3.4.2	Economic Activities .....	3-45
	3.4.2.1	Impact Assessment Study Area .....	3-45
	3.4.2.2	Project Study Area.....	3-45
	3.4.3	Existing Land Use .....	3-45
	3.4.3.1	Impact Assessment Study Area .....	3-45
	3.4.3.2	Project Study Area.....	3-46
	3.4.4	Recreation Uses .....	3-51
	3.4.4.1	Project and Impact Assessment Study Areas .....	3-51
	3.4.5	Existing Marine Uses .....	3-55
	3.4.5.1	Impact Assessment Study Area .....	3-55
	3.4.5.2	Project Study Area.....	3-57
	3.4.6	Land Use Planning.....	3-58
	3.4.6.1	Impact Assessment Study Area .....	3-58
	3.4.6.2	Project Study Area.....	3-64
	3.4.7	Cultural Resources .....	3-66
	3.4.7.1	Project Study Area.....	3-66
	3.4.8	Aboriginal Peoples' Interests .....	3-73
	3.4.9	Infrastructure .....	3-74
	3.4.9.1	Roadways .....	3-75
	3.4.9.2	Rail.....	3-81
	3.4.9.3	Bicycles, Pedestrians and Public Transit .....	3-84
	3.4.9.4	Utilities .....	3-86

<b>4.</b>	<b>Description, Evaluation and Rationale for ‘Alternatives To’ the Undertaking.....</b>	<b>4-1</b>
4.1	Identification of Potential ‘Alternatives To’ .....	4-1
4.2	Evaluation of ‘Alternatives To’ .....	4-4
<b>5.</b>	<b>Description, Evaluation and Rationale for ‘Alternative Methods’ of Carrying Out the Undertaking .....</b>	<b>5-1</b>
5.1	Step 1: Develop Long List of Alternatives.....	5-5
5.1.1	What are the Characteristics of the River Mouth? .....	5-5
5.1.1.1	Flow Rate.....	5-6
5.1.1.2	Water Quality .....	5-7
5.1.2	What Generic Cross-sections (Forms) and Vegetation Communities (Features) are Appropriate for the DMNP? .....	5-8
5.1.2.1	Description of Generic Cross-Sections .....	5-8
5.1.2.2	Description of Habitat (Vegetation Communities) .....	5-12
5.1.3	What are the Conditions for Survival of the Vegetation Communities? .....	5-14
5.1.4	What ‘Alternative Methods’ are Possible? .....	5-16
5.1.4.1	Identifying ‘Alternative Methods’ .....	5-16
5.1.4.2	Modelling the ‘Alternative Methods’ .....	5-18
5.1.4.3	Summary of Long List of Alternatives.....	5-19
5.2	Step 2: Technical Feasibility Assessment of Long List.....	5-19
5.2.1	What are the Screening Criteria? .....	5-20
5.2.2	What ‘Alternative Methods’ are Technically Feasible? .....	5-20
5.2.2.1	“Do Nothing” Alternative .....	5-20
5.2.2.2	Discharge Points 2 and 3 .....	5-21
5.2.2.3	Discharge Points 4W and 4S.....	5-23
5.2.2.4	Dealing with Sedimentation .....	5-24
5.2.2.5	Summary of Short List of ‘Alternative Methods’ .....	5-25
5.3	Step 3: Refinement of Short List.....	5-27
5.3.1	Step 3 Refinement Attributes .....	5-27
5.3.1.1	Optimize Habitat .....	5-27
5.3.1.2	Identify Flood Protection Features .....	5-31
5.3.1.3	Provide for Sediment, Ice and Debris Management.....	5-31
5.3.1.4	Address Existing and Planned Infrastructure .....	5-31
5.3.1.5	Provide Recreational Features .....	5-32
5.3.1.6	Identify Opportunities to Enhance Cultural and Heritage Resources.....	5-32
5.3.2	Re-evaluation Based on International Design Competition Results.....	5-32
5.3.2.1	Re-evaluation of Steps 1 and 2 .....	5-33
5.3.2.2	A New Alternative and Refinement of Step 3 .....	5-33
5.3.3	Description of the Refined Short List of Alternatives .....	5-35
5.3.3.1	Alternative 2: River with discharge to the Inner Harbour.....	5-35
5.3.3.2	Alternative 3: River with discharge through the Port Lands to the Ship Channel .....	5-37
5.3.3.3	Alternative 4W: Combination of discharge points to the Inner Harbour and Ship Channel (Primary discharge to the Inner Harbour) .....	5-39
5.3.3.4	Alternative 4S: Combination of discharge points to the Inner Harbour and Ship Channel (Primary discharge to the Ship Channel).....	5-41
5.3.3.5	Alternative 4WS: River with discharge to the Inner Harbour and two overflow spillways .....	5-43
5.4	Step 4: Evaluation of Short List Alternatives .....	5-45
5.4.1	Assumptions .....	5-46

5.4.2	Evaluation Methodology .....	5-46
5.4.2.1	Criteria and Indicators .....	5-46
5.4.2.2	Effects Assessment .....	5-47
5.4.2.3	Comparative Evaluation .....	5-48
5.4.3	Results of Comparative Evaluation.....	5-48
5.4.3.1	Naturalization.....	5-48
5.4.3.2	Flood Protection .....	5-51
5.4.3.3	Operational Management and Constructability .....	5-53
5.4.3.4	Integration with Infrastructure .....	5-57
5.4.3.5	Recreational and Cultural Opportunities .....	5-60
5.4.3.6	Co-ordination with Other Planning Efforts .....	5-63
5.4.3.7	Consistency with Waterfront Toronto Sustainability Framework.....	5-66
5.4.3.8	Confirmation of Construction-Related Effects Associated with the Short List Alternatives .....	5-71
5.4.3.9	Summary of Step 4 Comparative Evaluation of Alternatives .....	5-77
5.4.4	Description of the Preliminary Preferred Alternative and Confirmatory Studies.....	5-78
5.5	Port Lands Acceleration Initiative (PLAI) and Refinements to the Preliminary Preferred Alternative .....	5-79
5.5.1	Alternative 4WS Amended – River with Discharge to the Inner Harbour and an Overflow Greenway .....	5-79
5.5.1.1	Comparison between Alternative 4WS and Alternative 4WS Amended .....	5-81
5.5.1.2	Confirmation of Construction-Related Effects Associated with Alternative 4WS and Alternative 4WS Amended .....	5-83
5.5.1.3	Summary of the Comparative Evaluation of Alternative 4WS and Alternative 4WS Amended .....	5-85
<b>6.</b>	<b>Description of the Preferred Alternative .....</b>	<b>6-1</b>
6.1	Overview of the Conceptual Design .....	6-1
6.1.1	Flood Protection Features .....	6-3
6.1.1.1	River Valley Formation .....	6-4
6.1.1.2	Grading and Setbacks of Development Areas .....	6-18
6.1.2	Sediment, Debris and Ice Management .....	6-20
6.1.2.1	Sediment Trap .....	6-20
6.1.2.2	Sediment Conveyance System .....	6-22
6.1.2.3	Sediment Disposal and Reuse .....	6-26
6.1.2.4	Sediment and Debris Management Area .....	6-26
6.1.2.5	Ice Management.....	6-27
6.1.3	Naturalization.....	6-27
6.1.3.1	Terrestrial Habitat – Valley Slope Transition .....	6-28
6.1.3.2	Wetland Habitat – Levee System .....	6-30
6.1.3.3	Wetland Habitat – Lake-Connected Wetlands .....	6-32
6.1.3.4	Aquatic Habitat .....	6-34
6.1.3.5	Don Mouth .....	6-34
6.1.3.6	Don Narrows.....	6-37
6.2	Integration with the Lower Don Lands Planning .....	6-37
6.2.1	Vehicle and Rail Crossings.....	6-38
6.2.2	Utilities .....	6-40
6.2.3	Stormwater.....	6-40
6.2.4	Public Realm and Parkland for Recreational Uses.....	6-41
6.3	Summary by Reach .....	6-43

6.4	Maintenance Associated with the Preferred Alternative .....	6-44
6.5	Management of Contaminated Soil .....	6-46
6.5.1	Characterization of Contaminated Soils .....	6-47
6.5.2	Excavation and Removal of Contaminated Soil .....	6-48
6.5.3	Treatment, Disposal and Handling of Contaminated Soils .....	6-48
6.5.3.1	Disposal Off-site .....	6-49
6.5.4	Backfill Material brought onto the DMNP Lands .....	6-49
6.5.5	Soil Management Practices .....	6-49
6.5.6	Management of Groundwater / Surface Water .....	6-50
6.5.6.1	Characterization of Groundwater .....	6-50
6.5.6.2	Light Non-Aqueous Phase Liquids (LNAPL) / Dense Non-Aqueous Phase Liquid (DNAPL) .....	6-51
6.5.6.3	Groundwater Management Practices .....	6-51
6.5.6.4	Surface Water Management Practices .....	6-51
6.6	Phasing Plan and Construction Techniques .....	6-52
6.6.1	Phase 1: Protecting Lands West of Cherry Street .....	6-53
6.6.1.1	Land Creation Activities at Essroc Slip .....	6-55
6.6.1.2	Constructing New Keating Channel Bridge and Removing Existing Bridge .....	6-55
6.6.1.3	Raising and Filling Cousins and Polson Quay and 309 Cherry Street .....	6-56
6.6.1.4	Partial Removal of Dockwall along North Side of Polson Slip .....	6-56
6.6.1.5	Realignment and Reconstruction of Cherry Street .....	6-56
6.6.2	Phase 2: Protecting Land East of the Don Roadway and Creating a Valley Wall Feature .....	6-59
6.6.2.1	Excavating and Grading the Greenway, including the Ship Channel Wetland .....	6-60
6.6.2.2	Constructing the New Commissioners Street Bridge and Polson Slip Bridge Abutments / Piers .....	6-60
6.6.2.3	Lengthening the Lake Shore Boulevard and Harbour Lead Bridges .....	6-61
6.6.2.4	Widening the River North of Lake Shore Boulevard and Constructing the Sediment and Debris Management Area .....	6-63
6.6.2.5	Relocation of Infrastructure .....	6-65
6.6.2.6	Constructing the Don Roadway Valley Wall Feature .....	6-65
6.6.2.7	Modifying the Roadway to the Eastern Avenue Underpass .....	6-66
6.6.2.8	Construction of the Flood Protection Landform North of Lake Shore Boulevard (21 Don Roadway Site) .....	6-66
6.6.2.9	Raising the Grades in the Munitions Block .....	6-66
6.6.3	Phase 3: Establishing the New River Footprint .....	6-68
6.6.3.1	Constructing the Remainder of the River Valley System .....	6-69
6.6.3.2	Works to the Keating Channel .....	6-69
6.6.3.3	Construct Polson Slip Bridge and Basin Street Bridge Decking .....	6-69
6.6.3.4	Remove / Upgrade Area Infrastructure .....	6-69
6.6.3.5	Raising the Grades in the Remaining Areas of the Lower Don Lands .....	6-70
6.6.4	Phase 4: Naturalize Southern Dockwall in Polson Slip .....	6-73
6.6.4.1	Final Grading of the New River Mouth .....	6-73
<b>7.</b>	<b>Step 5: Detailed Assessment of the Preferred Alternative .....</b>	<b>7-1</b>
7.1	Approach to Step 5 Detailed Assessment .....	7-1
7.2	Assessment Criteria and Indicators .....	7-2
7.2.1	Identifying Net Effects .....	7-2

7.3	Effects Assessment by Objective .....	7-3
7.3.1	Objective 1: Naturalization .....	7-3
7.3.2	Objective 2: Flood Protection.....	7-11
7.3.3	Objective 3: Operational Management and Constructability .....	7-16
7.3.4	Objective 4: Integration with Infrastructure .....	7-25
7.3.5	Objective 5: Recreational and Cultural Opportunities.....	7-34
7.3.6	Objective 6: Co-ordination with Other Planning Initiatives .....	7-43
7.3.7	Objective 7: Consistency with Waterfront Toronto Sustainability Framework Objective .....	7-49
7.4	Summary of Mitigation Measures .....	7-55
<b>8.</b>	<b>Monitoring and Adaptive Environmental Management .....</b>	<b>8-1</b>
8.1	DMNP Monitoring Program.....	8-3
8.1.1	Baseline Conditions Monitoring .....	8-3
8.1.2	EA Compliance Monitoring .....	8-4
8.1.3	Environmental Performance Monitoring .....	8-10
8.2	Adaptive Environmental Management.....	8-10
8.2.1	What is Adaptive Environmental Management)? .....	8-10
8.2.2	AEM Strategy for the DMNP .....	8-11
8.2.2.1	Monitoring and Evaluation within the DMNP AEM Process .....	8-12
8.2.2.2	Adjustments, Refinements, Modifications within the DMNP AEM Process ...	8-13
8.2.2.3	Learning within the DMNP AEM Process .....	8-14
8.2.3	Operationalizing the AEM Strategy.....	8-15
<b>9.</b>	<b>EA Amendment Process .....</b>	<b>9-1</b>
9.1	The Ontario EA Act Provisions for Post EA Modifications.....	9-1
9.2	DMNP Approach to Post EA Modifications.....	9-1
9.2.1	Screening Criteria for Post EA Modification .....	9-4
<b>10.</b>	<b>Consultation Record .....</b>	<b>10-1</b>
10.1	Environmental Assessment Consultation Activities and Results (June 2005 – August 2011) .....	10-2
10.1.1	Public Consultation Activities and Results.....	10-2
10.1.1.1	Notices.....	10-2
10.1.1.2	Mailing Lists .....	10-3
10.1.1.3	Public Forums.....	10-3
10.1.1.4	Community Liaison Committee.....	10-8
10.1.1.5	Newsletters and Flyers .....	10-11
10.1.1.6	Web-Based Information.....	10-12
10.1.1.7	Community Workshops and Events .....	10-12
10.1.1.8	Lower Don Lands Planning Process Public Consultation .....	10-14
10.1.1.9	Other Public Feedback .....	10-15
10.1.1.10	Summary of Public Issues and Responses .....	10-16
10.1.2	Agency / Landowner Consultation Activities and Results .....	10-19
10.1.2.1	Technical Advisory Committee .....	10-20
10.1.2.2	EA Regulators.....	10-21
10.1.2.3	City of Toronto .....	10-23
10.1.2.4	Aquatic Habitat Toronto.....	10-28

10.1.2.5	Toronto Port Authority .....	10-30
10.1.2.6	Utilities .....	10-31
10.1.2.7	Railway Owners and Operators.....	10-32
10.1.2.8	Property Owners.....	10-33
10.1.2.9	Consultation for Related Projects .....	10-36
10.1.2.10	Summary of Agency / Property Owner Issues and Responses .....	10-36
10.1.3	Aboriginal Consultation Activities and Results .....	10-38
10.1.3.1	Mississaugas of the New Credit First Nation.....	10-39
10.1.3.2	Consultation with Five Other Mississauga First Nations, Chippewas First Nations and the Ogemawahj Tribal Council .....	10-41
10.1.3.3	Consultation with the Conseil de la Huronne-Wendat.....	10-43
10.1.3.4	Consultation with Miziwe Biik .....	10-44
10.1.3.5	Consultation with other Aboriginal Associations and Alliances .....	10-45
10.1.3.6	Summary of Aboriginal Issues and Responses.....	10-47
10.1.4	Review of 2010 Draft EA Report.....	10-48
10.1.4.1	Comments Received from Public and Other Stakeholders .....	10-48
10.1.4.2	Comments Received from Review Agencies .....	10-52
10.1.4.3	Comments Received from Aboriginal Communities and Associations .....	10-60
10.2	Port Lands Acceleration Initiative (PLAI) Consultation Activities and Results (September 2011 – August 2012).....	10-61
10.3	Environmental Assessment Amendment Consultation Activities and Results (January 2013 – Spring 2014) .....	10-61
10.3.1	Public Consultation Activities and Results.....	10-62
10.3.1.1	Community Liaison Committee.....	10-62
10.3.1.2	July 24, 2013 Public Meeting.....	10-63
10.3.1.3	Newsletters .....	10-65
10.3.2	Agency / Landowner Consultation Activities and Results .....	10-65
10.3.3	Aboriginal Consultation Activities and Results .....	10-72
10.3.4	Summary of Issues and Responses (January 2013 – Spring 2014) .....	10-72
10.3.5	Review of 2013 Draft EA Report.....	10-76
10.3.5.1	Comments Received from Public and Other Stakeholders .....	10-76
10.3.5.2	Comments Received from Review Agencies .....	10-78
10.3.5.3	Comments Received from Aboriginal Communities and Associations .....	10-82
10.4	Post-Approval Consultation .....	10-82
<b>11.</b>	<b>Advantages and Disadvantages.....</b>	<b>11-1</b>

## References



## List of Figures

	page
Figure 1-1	Project Location ..... 1-2
Figure 1-2	EA Study Areas ..... 1-11
Figure 2-1	Regulatory Flood Spill Zones for the Lower Don River ..... 2-3
Figure 2-2	Project Study Area..... 2-12
Figure 2-3	Impact Assessment Study Area ..... 2-14
Figure 3-1	Don River Watershed ..... 3-2
Figure 3-2	Surficial Geology of the Don River Watershed..... 3-3
Figure 3-3	Historical Detail from J.O. Browne and J. Ellis, Map of the Township of York in the County of York, Upper Canada, 1851, Toronto Public Library 912.71354 B68, courtesy of Derek Hayes (Bonnell, 2010) ..... 3-4
Figure 3-4	Annual Timing of Flows in the Don River at Todmorden (1994-2004)..... 3-8
Figure 3-5	Daily Toronto Harbour Water Surface Elevation (WSE), Probability of a WSE at or Above an Elevation as a Function of Julian Date (Limnotech, 2008) ..... 3-9
Figure 3-6	Impediments to Flood Conveyance..... 3-11
Figure 3-7	Keating Channel Dissolved Oxygen, July 2003 ..... 3-14
Figure 3-8	Keating Channel Turbidity (TRCA, 2008b)..... 3-15
Figure 3-9	Natural Areas in the Impact Assessment Study Area ..... 3-21
Figure 3-10	Natural Features of Interest in the Project Study Area..... 3-28
Figure 3-11	Fauna Species of Concern (TRCA, 2004b)..... 3-31
Figure 3-12	City of Toronto Wards in the Impact Assessment Study Area ..... 3-43
Figure 3-13	Official Plan Land Use Designations in the Impact Assessment Study Area (City of Toronto Official Plan, 2010) ..... 3-47
Figure 3-14	Land Use in the Project Study Area ..... 3-48
Figure 3-15	Property Ownership in the Project Study Area..... 3-50
Figure 3-16	Recreational Areas in the DMNP Project and Impact Assessment Study Areas..... 3-54
Figure 3-17	Locations of the Precinct Plans ..... 3-60
Figure 3-18	Central Waterfront Secondary Plan – Land Use Plan..... 3-61
Figure 3-19	Cultural Heritage Landscapes and Built Heritage Resources in the Project Study Area (City of Toronto’s Inventory of Heritage Properties) ..... 3-67
Figure 3-20	Archaeological Inventory of the Project Study Area ..... 3-70
Figure 3-21	Roadways within the Project Study Area ..... 3-79
Figure 3-22	Railway Tracks within the Project Study Area..... 3-83
Figure 3-23	Transit Services within the Impact Assessment Study Area ..... 3-85
Figure 3-24	Existing Utilities within the Project Study Area ..... 3-88
Figure 4-1	Alternative Discharge Points ..... 4-2
Figure 4-2	Alternative 2 from the MOE-Approved ToR..... 4-9
Figure 4-3	Alternative 3 from the MOE-Approved ToR..... 4-11
Figure 4-4	Alternative 4 from the MOE-Approved ToR..... 4-13
Figure 4-5	Alternative 5 from the MOE-Approved ToR..... 4-15



Figure 4-6	Alternative 6 from the MOE-Approved ToR.....	4-17
Figure 4-7	Alternative 7 from the MOE-Approved ToR.....	4-19
Figure 4-8	Alternative 8 from the MOE-Approved ToR.....	4-21
Figure 5-1	The Identification and Evaluation of ‘Alternative Methods’ .....	5-2
Figure 5-2	Flow Rates during Flood Events .....	5-6
Figure 5-3	Location of CN Rail Bridge in the Project Study Area .....	5-7
Figure 5-4	Venn Diagram Showing Combinations of Cross-sections.....	5-11
Figure 5-5	Framework for Developing the Long List of ‘Alternative Methods’ .....	5-17
Figure 5-6	Screening of Cross-sections and Habitats for Discharge Points 2 and 3 .....	5-22
Figure 5-7	Screening of Cross-sections and Habitats for Discharge Points 4W and 4S (Primary Channel) .....	5-24
Figure 5-8	Screening of Cross-sections and Habitats for Discharge Points 4W and 4S (Overflow Spillway) .....	5-24
Figure 5-9	Summary of ‘Alternative Methods’ for Primary Channel that Pass the Screening Criteria .....	5-26
Figure 5-10	Alternative 2.....	5-36
Figure 5-11	Alternative 3.....	5-38
Figure 5-12	Alternative 4W .....	5-40
Figure 5-13	Alternative 4S .....	5-42
Figure 5-14	Alternative 4WS.....	5-44
Figure 5-15	Design of Alternative 4WS Amended from the PLAI Final Report, 2012 .....	5-80
Figure 6-1	Conceptual Design for the DMNP .....	6-2
Figure 6-2	Don River Reaches .....	6-5
Figure 6-3	Reach 1 .....	6-7
Figure 6-4	General Dimensions of the Flood Protection Landform North of Lake Shore Boulevard .....	6-8
Figure 6-5	Reach 2 .....	6-10
Figure 6-6	General Dimensions of the Valley Wall Feature South of Lake Shore Boulevard .....	6-11
Figure 6-7	Reach 2a .....	6-12
Figure 6-8	Existing Dockwall and Proposed Stone Revetment .....	6-13
Figure 6-9	Reach 3 and 3a .....	6-15
Figure 6-10	Reach 4 .....	6-17
Figure 6-11	Regulatory Event Level and Setbacks from Floodplain .....	6-19
Figure 6-12	Sediment / Debris Management Layout .....	6-20
Figure 6-13	Examples of Hydraulic Dredges .....	6-21
Figure 6-14	Example of a Hydrocyclone.....	6-22
Figure 6-15	Approach to Sediment Management (Option A) .....	6-23
Figure 6-16	Approach to Sediment Management (Option B) .....	6-25
Figure 6-17	Terrestrial Habitat .....	6-29
Figure 6-18	Wetland Habitat .....	6-31
Figure 6-19	Ship Channel Outlet .....	6-32
Figure 6-20	Active Water Control Structure for Carp.....	6-33
Figure 6-21	Long Profile of Proposed Feeder Channels .....	6-34
Figure 6-22	Permanent Aquatic Habitat .....	6-35

Figure 6-23	Proposed Bridge Crossings.....	6-39
Figure 6-24	Conceptual Trail System .....	6-42
Figure 6-25	Phase 1 of Development .....	6-54
Figure 6-26	Phase 1 Construction Activities .....	6-57
Figure 6-27	Completion of Phase 1 Construction Activities .....	6-58
Figure 6-28	Phase 2 of Development .....	6-59
Figure 6-29	Phase 2 Construction Activities .....	6-62
Figure 6-30	Construction of the Sediment and Debris Management Area (Phase 2) .....	6-64
Figure 6-31	Completion of Phase 2 Construction Activities .....	6-67
Figure 6-32	Phase 3 of Development .....	6-68
Figure 6-33	Phase 3 Construction Activities .....	6-71
Figure 6-34	Completion of Phase 3 Construction Activities .....	6-72
Figure 6-35	Phase 4 of Development .....	6-73
Figure 6-36	Phase 4 Construction Activities .....	6-74
Figure 6-37	Completion of Phase 4 Construction Activities .....	6-76
Figure 8-1	Relationship between Monitoring Phases and Project Implementation .....	8-3
Figure 8-2	Relationship between Project Design and AEM.....	8-12
Figure 8-3	Monitoring and Evaluation within the AEM Cycle.....	8-13
Figure 9-1	Approval Process for Proposed Modifications to the DMNP.....	9-3

## List of Tables

	page
Table 1-1	Approved Terms of Reference Commitments ..... 1-7
Table 1-2	Other Authorizations / Approvals Required for the DMNP ..... 1-12
Table 3-1	Peak Flow (m <sup>3</sup> /s) Associated with Storm Events at the Mouth of the Don River ..... 3-7
Table 3-2	Delft3D Modelling of Hydraulic Conditions and Flood Flows under Existing Conditions ..... 3-12
Table 3-3	Median Concentrations and the Percent of Samples that Meet Guidelines at the Pottery Road Monitoring Station (January 2002 – July 2005) ..... 3-13
Table 3-4	Federal Dissolved Oxygen Guidelines (TRCA, 2004a) ..... 3-14
Table 3-5	Keating Channel Dredging Volumes, 2002 to 2007 ..... 3-18
Table 3-6	Keating Channel Debris Tonnage and Removal Costs, 2005 to 2007 ..... 3-19
Table 3-7	Aquatic Plant Species Found in 2007 Survey of Toronto Harbour ..... 3-24
Table 3-8	Ecological Communities in the Vicinity of the DMNP Project Study Area ..... 3-26
Table 3-9	Regionally Significant Plant Species in the DMNP Project Study Area ..... 3-27
Table 3-10	Mammals, Birds and Herpetofauna Reported from the Lower Don River (TRCA, 2012) ..... 3-29
Table 3-11	Regionally Significant Animal Species in the DNMP Project Study Area ..... 3-32
Table 3-12	Species Present in the Lower Don River Electrofishing Database from 1989 to 2012 (TRCA, 2013) ..... 3-35
Table 3-13	Fish Species Assemblage in the Lower Don River, 1991-2012 ..... 3-36
Table 3-14	Fish Species Assemblage in the Keating Channel, 1989-2012 ..... 3-38
Table 3-15	Population of Toronto and the Study Areas between 1996 and 2011 ..... 3-44
Table 3-16	Transportation in Toronto and the Impact Assessment Study Area in 2006 ..... 3-44
Table 3-17	Recreation Uses in the DMNP Project and Impact Assessment Study Areas ..... 3-51
Table 3-18	Recreational Boating Clubs, Marinas and Organizations in the Impact Assessment Study Area (TWRC, 2006b) ..... 3-56
Table 3-19	Registered Archaeological Sites within ~2 km of the Project Study Area ..... 3-68
Table 3-20	Archaeological Inventory: Summary of Features and Significance Evaluations ..... 3-72
Table 3-21	Roadways within the Impact Assessment Study Area ..... 3-75
Table 3-22	Roadways within the Project Study Area ..... 3-76
Table 3-23	Existing (2010) AM and PM Peak Hour Traffic Operations ..... 3-80
Table 3-24	Existing Railway Tracks within the Project Study Area ..... 3-82
Table 3-25	Detail of Utilities along the Project Study Area ..... 3-86
Table 4-1	Rationale for Alternative Discharge Points ..... 4-3
Table 4-2	Alternative Discharge Points and Descriptions ..... 4-3
Table 4-3	Criteria for Assessment of Alternative Discharge Points ..... 4-5
Table 4-4	Criteria Based Assessment ..... 4-7
Table 4-5	Summary Evaluation of Alternative Discharge Points or 'Alternatives To' Against Project Objectives ..... 4-22
Table 5-1	Generic Cross-Sections ..... 5-9
Table 5-2	Vegetation Communities ..... 5-12
Table 5-3	Summary Table of Survival Conditions for Vegetation Communities ..... 5-16
Table 5-4	Hydraulic Modelling Results for the Discharge Points ..... 5-19
Table 5-5	Screening Criteria ..... 5-20

Table 5-6	Objectives for Habitation Optimization .....	5-28
Table 5-7	Association between Vegetation Communities and Habitat Types .....	5-29
Table 5-8	Ability of Cross-sections to Achieve Naturalization Objectives .....	5-30
Table 5-9	Key Issues Revised During Step 3 in Response to the Design Competition .....	5-34
Table 5-10	Step 4 Comparative Evaluation Table – Naturalization.....	5-49
Table 5-11	Summary of Criteria Ratings for the Naturalization Objective.....	5-51
Table 5-12	Step 4 Comparative Evaluation Table – Flood Protection .....	5-52
Table 5-13	Summary of Criteria Ratings for the Flood Protection Objective .....	5-53
Table 5-14	Step 4 Comparative Evaluation Table – Operational Management and Constructability .....	5-54
Table 5-15	Summary of Criteria Ratings for the Operational Management and Constructability Objective .....	5-56
Table 5-16	Step 4 Comparative Evaluation Table – Integration with Infrastructure .....	5-58
Table 5-17	Summary of Criteria Ratings for the Integration with Infrastructure Objective .....	5-60
Table 5-18	Step 4 Comparative Evaluation Table – Recreational and Cultural Opportunities .....	5-61
Table 5-19	Summary of Criteria Ratings for the Recreation and Cultural Opportunities Objective .....	5-63
Table 5-20	Step 4 Comparative Evaluation Table – Co-ordination with Other Planning Efforts.....	5-64
Table 5-21	Summary of Criteria Ratings for the Co-ordination with Other Planning Efforts Objective .....	5-66
Table 5-22	Step 4 Comparative Evaluation Table – Consistency with Waterfront Toronto Sustainability Framework.....	5-67
Table 5-23	Summary of Criteria Ratings for the Consistency with Waterfront Toronto Sustainability Framework Objective.....	5-71
Table 5-24	Construction-Related Effects and Mitigation by Objective .....	5-73
Table 5-25	Summary of Step 4 Evaluation by Objective .....	5-77
Table 5-26	Construction-Related Effects and Mitigation by Objective for Alternative 4WS and Alternative 4WS Realigned.....	5-84
Table 5-27	Summary of the Comparative Evaluation of Alternative 4WS and Alternative 4WS Amended by Objective.....	5-85
Table 6-1	Description of Major Fish Habitat Features .....	6-36
Table 6-2	Potential Species Attracted to New Habitat Features .....	6-36
Table 6-3	Summary of Design Components by Reach .....	6-43
Table 7-1	Objective 1: Naturalization .....	7-4
Table 7-2	Overall Effects Related to Objective 1.....	7-10
Table 7-3	Objective 2: Flood Protection .....	7-12
Table 7-4	Overall Effects Related to Objective 2.....	7-15
Table 7-5	Objective 3: Operational Management and Constructability.....	7-17
Table 7-6	Overall Effects Related to Objective 3.....	7-24
Table 7-7	Objective 4: Integration with Infrastructure.....	7-26
Table 7-8	Overall Effects Related to Objective 4.....	7-33
Table 7-9	Objective 5: Recreational and Cultural Opportunities .....	7-35
Table 7-10	Overall Effects Related to Objective 5.....	7-42
Table 7-11	Objective 6: Co-ordination with Other Planning Initiatives .....	7-44
Table 7-12	Overall Effects Related to Objective 6.....	7-48
Table 7-13	Objective 7: Consistency with Waterfront Toronto Sustainability Framework Objective .....	7-50
Table 7-14	Overall Effects Related to Objective 7.....	7-55

Table 7-15	Summary of Mitigation Measures by Effect.....	7-55
Table 8-1	Minimum Design Requirements for the DMNP .....	8-2
Table 8-2	DMNP EA Commitments.....	8-6
Table 8-3	General Environmental Performance Monitoring Requirements for Biophysical Components of the DMNP .....	8-10
Table 8-4	Potential AEM Triggers and Adaptive Measures for Project Components .....	8-13
Table 9-1	Proposed Screening Criteria .....	9-4
Table 9-2	Examples of Minor vs. Major Project Modifications.....	9-5
Table 10-1	Summary of Notices .....	10-2
Table 10-2	Public Forums.....	10-4
Table 10-3	Community Liaison Committee Meetings.....	10-9
Table 10-4	Information Presented at Community Workshops and Events .....	10-13
Table 10-5	Lower Don Lands Public Forums Summary of Comments .....	10-14
Table 10-6	Summary of Key Discussions with Members of the Public .....	10-15
Table 10-7	Summary of Public Comments Received and Responses Provided .....	10-16
Table 10-8	TAC Member Organizations.....	10-20
Table 10-9	Consultation with Technical Advisory Committee .....	10-21
Table 10-10	Consultation with EA Regulators.....	10-21
Table 10-11	Consultation with the City of Toronto .....	10-24
Table 10-12	Consultation with Aquatic Habitat Toronto .....	10-28
Table 10-13	Consultation with the Toronto Port Authority.....	10-30
Table 10-14	Consultation with Utilities.....	10-31
Table 10-15	Consultation with Railway Owners and Operators.....	10-33
Table 10-16	Consultation with Property Owners .....	10-34
Table 10-17	Summary of Agency / Property Owner Issues and Responses .....	10-36
Table 10-18	Consultation with the Mississaugas of the New Credit First Nation.....	10-39
Table 10-19	Consultation with Five Other Mississauga First Nations, Chippewas First Nations and the Ogemawahj Tribal Council .....	10-42
Table 10-20	Consultation with the Conseil de la Hurrone-Wendat .....	10-43
Table 10-21	Consultation with Miziwe Biik .....	10-45
Table 10-22	Consultation with other Aboriginal Associations and Alliances .....	10-45
Table 10-23	Summary of Aboriginal Comments Received and Responses Provided .....	10-47
Table 10-24	Disposition of Comments Received from the Public/Stakeholders on the 2010 Draft EA Report.....	10-48
Table 10-25	Disposition of Comments Received from Review Agencies on the 2010 Draft EA Report.....	10-52
Table 10-26	Disposition of Comments Received from Aboriginal Communities and Associations on the 2010 Draft EA Report .....	10-60
Table 10-27	Community Liaison Committee Meetings – January 2013 – Spring 2014 .....	10-63
Table 10-28	July 24, 2013 Public Meeting .....	10-64
Table 10-29	Consultation with Agencies and Landowners .....	10-65
Table 10-30	Summary of Comments Received and Responses Provided (January 2013 – Spring 2014) .....	10-73
Table 10-31	Disposition of Comments Received from the Public / Stakeholders on the 2013 Draft EA Report.....	10-76
Table 10-32	Disposition of Comments Received from Review Agencies on the 2013 Draft EA Report.....	10-79
Table 11-1	Advantages and Disadvantages of the DMNP .....	11-1

## Appendices

- Appendix A. Terms of Reference and Conditions Letter**
- Appendix B. Navigation Risk Report and Updated Manoeuvring Circle Assessment**
- Appendix C. Cultural Heritage Properties**
- Appendix D. Archaeological Assessment Existing Conditions**
- Appendix E. Data for Criteria Assessment from the Terms of Reference and Comparison of “Alternatives To” Design Elements**
  - Appendix E-1 Data for Criteria Assessment
  - Appendix E-2 Data (Infrastructure)
  - Appendix E-3 Comparison of “Alternatives To” Design Elements
- Appendix F. Step 4 Assumptions, Comparative Evaluation, Criteria and Indicators**
  - Appendix F-1 Step 4 Assumptions
  - Appendix F-2 Comparative Evaluation Criteria for Step 4 of the Don Mouth Naturalization Project
  - Appendix F-3 Step 4 Criteria and Indicators Deferred to Step 5 Evaluation
  - Appendix F-4 Summary of Effects Assessment Methods by Criterion
- Appendix G. Standard Construction Techniques and Mitigation Measures**
- Appendix H. Comparison of Alternative 4WS and Alternative 4WS Amended by Environmental Factors**
- Appendix I. Bridge Lengthening and Weirs at Lake Shore Boulevard**
- Appendix J. Draft Grading Plan for Approval**
- Appendix K. Summary of Habitat Features**
- Appendix L. Don Narrows**
- Appendix M. Criteria, Measures and Indicators for Effects Assessment**
- Appendix N. Hydrodynamic and Sediment Transport Modelling Memorandums**
  - Appendix N-1 Hydrodynamic Modelling Technical Memorandum
  - Appendix N-2 Sediment Transport Modelling Technical Memorandum
  - Appendix N-3 Supplemental Technical Memorandum
- Appendix O. Economic Effects Assessment Technical Memorandum**
- Appendix P. Preliminary Noise Assessment Technical Memorandum**
- Appendix Q. Consultation Materials**
  - Appendix Q-1 Notices, Public Forums and Workshops, and Meeting Materials
  - Appendix Q-2 Community Liaison Committee (CLC) Meeting Materials and Minutes
  - Appendix Q-3 Newsletters
  - Appendix Q-4 Technical Advisory Committee (TAC) Meeting Minutes, Agency Correspondence and Meeting Materials
  - Appendix Q-5 History of the Mississaugas of the New Credit First Nation, Toronto Purchase Specific Claim & Globe and Mail Article
  - Appendix Q-6 Summaries of Meetings with Aboriginal Groups
  - Appendix Q-7 Port Lands Acceleration Initiative Consultation Process Summary Report
  - Appendix Q-8 Comments and Responses on the 2013 Draft EA Pre-submission



## Acronyms

ABTP.....	Ashbridges Bay Treatment Plant
AEM .....	Adaptive Environmental Management
AHT .....	Aquatic Habitat Toronto
ANSI.....	Area of Natural and Significant Interest
ASI .....	Archaeological Services Inc.
AWI .....	Area-Wide Initiative
BA .....	British-American Oil Company Limited
BFF .....	Ballasted Flocculation Facility
BMW .....	Bayerische Motoren Werke (Bavarian Motor Works)
BOD .....	Biological oxygen demand
BTEX.....	Benzene, Toluene, Ethylbenzene, Xylene
CCME.....	Canadian Council of Ministers of the Environment
CDF .....	Confined Disposal Facility
CEAA .....	<i>Canadian Environmental Assessment Act</i>
CHS.....	Canadian Hydrographic Service
CLC .....	Community Liaison Committee
CN / CNR .....	Canadian National or Canadian National Railway
COSEWIC.....	Committee on the Status of Endangered Wildlife in Canada
COSSARO .....	Committee on the Status of Species at Risk in Ontario
CP / CPR.....	Canadian Pacific or Canadian Pacific Railway
CSO .....	Combined Sewer Overflow
CW .....	Created Wetland
CWSP .....	Central Waterfront Secondary Plan
DFO.....	Fisheries and Oceans Canada
DMNP.....	Don Mouth Naturalization and Port Lands Flood Protection Project
DNAPL .....	Dense Non-aqueous Phase Liquid
DO.....	Dissolved Oxygen
DTAH .....	Du Toit Allsopp Hillier / Du Toit Architects Limited
DVP.....	Don Valley Parkway
DWA.....	Designated Waterfront Area
EA .....	Environmental Assessment
EC .....	Environment Canada
EC .....	Electrical Conductivity
ELC .....	Ecological Land Classification
EMS .....	Emergency Medical Services
ESA .....	Environmentally Significant Area
ESA.....	Environmental Site Assessment
ESSROC .....	Essroc Italcementi Group
FEAC.....	Federal Environmental Assessment Coordinator



FO (D/C/M)..... Upland Forest

FPL..... Flood Protection Landform

GIS ..... Geographic Information System

GLL ..... Gartner Lee Limited

GMMP ..... Groundwater Management Master Plan

GO..... Greater Toronto Transit Authority

GTA..... Greater Toronto Area

HAAT..... Habitat Alteration Assessment Tool

HASP ..... Health and Safety Plan

HEC-RAS..... Hydrologic Engineering Centres River Analysis System

HHI ..... Historic Horizon Inc.

HONI ..... Hydro One Networks Inc.

HR&A ..... HR&A Advisors Inc.

HRL ..... Heritage Research Limited

IBA ..... Important Bird Area

IEA ..... Individual Environmental Assessment

L ..... Lacustrine Environment

LDL..... Lower Don Lands

LDL EAMP ..... Lower Don Lands Environmental Assessment Master Plan

LDRW..... Lower Don River West

LEL..... Lowest Effects Level

LNAPL..... Light Non-aqueous Phase Liquid

LOA ..... Length Overall

LOS ..... Level of Service

MAM..... Meadow Marsh

MAS ..... Emergent Marsh

MBCA..... *Migratory Birds Convention Act*

MBR ..... Migratory Bird Regulations

MCTS ..... Marine Communication and Traffic Services

MMAH ..... Ministry of Municipal Affairs and Housing

MNR ..... Ministry of Natural Resources

MOE ..... Ministry of the Environment

MP..... Member of Parliament

MPP ..... Member of Provincial Parliament

MTRCA ..... Metropolitan Toronto and Region Conservation Authority

MVVA ..... Michael Van Valkenburgh Associates Inc.

NAPL..... Non-aqueous Phase Liquids

NHIC ..... Natural Heritage Information Centre

NOTMAR..... Notices to Mariners

NOTSHIP ..... Notices to Shipping

NTU..... Nephelometric *Turbidity* Units

NRI ..... NRI Industries Inc.

NWPA ..... *Navigable Waters Protection Act*

NWPP ..... Navigable Waters Protection Program

OASD ..... Ontario Archaeological Sites Database

OMB ..... Ontario Municipal Board

OMNR ..... Ontario Ministry of Natural Resources

OPA ..... Official Plan Amendment

OPSS ..... Ontario Provincial Standards Specifications

ORC ..... Ontario Realty Corporation

ORM ..... Oak Ridges Moraine – only used once, should be removed

PAH ..... Polycyclic Aromatic Hydrocarbon

PCB ..... Polychlorinated Biphenyl

PF ..... Public Forum

PHC ..... Petroleum Hydrocarbons

PLAC ..... Port Lands Action Committee

PLAI ..... Port Lands Acceleration Initiative

PPS ..... Provincial Policy Statement

PSQG ..... Provincial Sediment Quality Guidelines

PSS ..... Property Specific Standards

PTTW ..... Permit to Take Water

PWQO ..... Provincial Water Quality Objective

QEW ..... Queen Elizabeth Way

R ..... Natural River Channel

RA ..... Responsible Authority

RA/RM ..... Risk Assessment/Risk Management

RAP ..... Remedial Action Plan

RFP ..... Request for Proposal

ROW ..... Right-of-Way

SAR ..... Sodium Adsorption Ratio

SAS ..... Submergent Marsh

SCS ..... Site Condition Standard

SEDERI ..... South East Downtown Economic Redevelopment Initiative

SEL ..... Severe Effect Level

SLR ..... SLR Consulting Limited

SMF ..... Soil Management Facility

SMMP ..... Soils Management Master Plan

SPA ..... Special Policy Area

SRBA ..... South Riverdale Business Association

SSC ..... Suspended Sediment Concentration

SSO ..... Storm Sewer Outfall

SSP ..... Steel Sheet Piling

SW (D/C/M).....	Treed Swamp
SWT .....	Thicket Swamp
TAC .....	Technical Advisory Committee
TBS .....	Treasury Board of Canada Secretariat
TC .....	Transport Canada
TEDCO.....	Toronto Economic Development Corporation
THC.....	Toronto Harbour Commission
TMC .....	Turning Movement Count
ToR .....	Terms of Reference
TPA .....	Toronto Port Authority
TPLC .....	Toronto Port Lands Company
TRCA .....	Toronto and Region Conservation Authority
TRU.....	TRU is the company name, and does not have an associated acronym.
TSP .....	Total Suspended Particulate
TSS .....	Total Suspended Solids
TTC .....	Toronto Transit Commission
TTR .....	Toronto Terminals Railway
TWRC .....	Toronto Waterfront Revitalization Corporation
U.K. ....	United Kingdom
U.S. ....	United States of America
VFW .....	Valley Wall Feature
VIA .....	VIA Rail Canada
VOC .....	Volatile Organic Compound
WSE.....	Water Surface Elevation
WT.....	Waterfront Toronto

## Units

\$ .....	Canadian Dollars
% .....	Per cent
cm .....	Centimetre
ha .....	Hectare
km .....	Kilometre
km/hr .....	Kilometres per hour
km <sup>2</sup> .....	Square kilometres
m .....	Metre
m <sup>2</sup> .....	Square metre
m <sup>3</sup> .....	Cubic metre
m/s .....	Metres per second
m <sup>3</sup> /s .....	Cubic metres per second
mASL .....	Metres above sea level
mbgs .....	Metres below ground surface
µg/L .....	Microgram per litre
mg/L .....	Milligrams per litre
mL .....	Millilitres
mm .....	Millimetre
NTU .....	Nephelometric <i>turbidity</i> units
s .....	Second
tons/yr .....	Tons per year

## Glossary of Terms

<b>Abutment</b>	The end support of a bridge superstructure, i.e., the part of the structure that supports the arch.
<b>Active recreational space</b>	An area designated for active recreational, e.g., organized sports or individual exercise.
<b>Adaptive management/ Adaptive environmental management (AEM)</b>	The implementation of new or modified mitigation measures over the life of a project to address unanticipated environmental effects.
<b>Adverse environmental effect</b>	An effect leading to one or more of: <ul style="list-style-type: none"><li>• impairment of the quality of the natural environment for any use that can be made of it;</li><li>• injury or damage to property or to plant or animal life;</li><li>• harm, material discomfort, an adverse effect on health, or impairment of the safety of any person;</li><li>• rendering any property or plant or animal life unfit for human use;</li><li>• loss of enjoyment of normal use of property; or</li><li>• interference with the normal conduct of business</li></ul>
<b>Aerobic</b>	A situation or process requiring oxygen.
<b>Ambient air monitoring program</b>	A systematic, long-term assessment of pollutant levels in the air by measuring the quantity and types of certain pollutants in the outdoor air.
<b>Amenity value</b>	A feature that increases attractiveness or value, especially of a piece of real estate or a geographic location.
<b>Aliquot</b>	A portion of a sample.
<b>Anaerobic</b>	A situation or process not requiring oxygen.
<b>Archaeological resource</b>	Any material remains of past human life or activity which are of archaeological interest.
<b>Area of Natural and Scientific Interest (ANSI)</b>	An area of land and water that represents significant geological and biological features.
<b>Backfill</b>	The material that has been used to refill an excavation.
<b>Baffled settling tank</b>	An enclosure that regulates the flow of water and allows particulates to settle to the bottom, thereby separating the particulates from the water.
<b>Ballasted Flocculation Facility (BFF)</b>	A high-rate, physical-chemical clarification process involving the fixing of flocs, or suspended solids, onto ballast (sand) with the aid of a polymer.
<b>Barrier beach</b>	A somewhat linear landform within or extending into a body of water, typically composed of sand, silt or small pebbles.
<b>Bathymetry</b>	The study of underwater depth of lake or ocean floors.

<b>Bedload</b>	Particles in a flowing fluid (usually water) that are transported along a stream bed (bottom).
<b>Benthic</b>	Associated with the bottom of a water body such as a sea or a lake.
<b>Berm</b>	A level space, shelf, or raised barrier separating two areas.
<b>Biennial plant</b>	A flowering plant that takes two years to complete its biological lifecycle.
<b>Biodegradable</b>	A material that can be broken down easily by the environment.
<b>Bio-engineered</b>	Living plants, or a combination of living and non-living materials, that are used to stabilize slopes and drainage ways.
<b>Biological diversity/ Biodiversity</b>	The diversity of plant and animal life in a particular area (e.g., habitat, city, world).
<b>Biomass</b>	The mass of living biological organisms in a given area or ecosystem at a given time.
<b>Biomass export</b>	A measure of the amount of organic matter that is expelled from a system.
<b>Biophysical component</b>	The parts of the environment that are not socio-economic (e.g., recreation, traffic, economic cost). These include the natural environment (flora, fauna) and the physical environment (air, soil, water, etc.)
<b>Biophysical interaction</b>	A process by which one component of the environment comes into contact with one of the biophysical components.
<b>Bioswale</b>	Landscape elements designed to remove silt and pollution from surface runoff water.
<b>Biotreatment</b>	The processing of waste or hazardous substance using living organisms such as bacteria, fungi or protozoa.
<b>Boom</b>	A barrier placed in a river, designed to collect and/or contain floating debris.
<b>Borehole</b>	A hole drilled to construct a well.
<b>Bridge footing</b>	The supporting base or groundwork of a bridge.
<b>Brownfield</b>	Former industrial lands, now vacant or underused, but with potential for redevelopment.
<b>Built heritage feature</b>	A site with one or more significant buildings, structures, monuments, installations or remains associated with architectural, cultural, social, political, economic or military history and identified as being important to a community.
<b>Cantilever</b>	A projecting structure, such as a beam, that is supported at one end and carries a load at the other end or along its length.
<b>Channel invert</b>	The bottom of a river channel.

<b>Climate change</b>	A change in the statistical distribution of weather over periods of time that range from decades to millions of years.
<b>Coffer dam</b>	An enclosure within a water environment constructed to allow water to be displaced by air for the purpose of creating a dry work environment.
<b>Combined sewer overflow (CSO)</b>	An event where stormwater exceeds the capacity of a combined sewer and stormwater/sewage are released to an adjacent water body.
<b>Conceptual design</b>	A product of the design process that meets the stated objectives of the DMNP.
<b>Confirmatory studies</b>	Studies undertaken to confirm a project-related hypothesis.
<b>Contiguous wetland habitat</b>	Wetland habitat that is spatially connected without any interruptions by other habitat types or constructed areas.
<b>Controlled wetland</b>	A wetland area where hydrologic inputs are managed by outside controls (e.g., weir releases into the wetland area)
<b>Constructability</b>	The feasibility of constructing a given project component.
<b>Convey/Conveyance</b>	The ability of the valley form to direct flood water through the project area.
<b>Core contiguous area</b>	An area of wetland habitat within the DMNP approximately 10 ha in area.
<b>Core wetland area</b>	A primary constructed wetland within the DMNP.
<b>Crashwall</b>	A physical barrier used to intercept wave action offshore creating an area of calmer water near shore.
<b>Created wetland</b>	A wetland area that has been constructed as opposed to naturally occurring.
<b>Critical constraint</b>	A restriction that a system places on the design of a project which must be addressed if project objectives are to be met.
<b>Critical habitat</b>	An area essential to the conservation of a listed species.
<b>Cumulative environmental effect</b>	The sum of the net effects from a project (i.e., effects minus mitigation measures) with other past, present and reasonably foreseeable future environmental net effects from other actions.
<b>Cutterhead</b>	A rotating head, which itself forms a cutter, or a rotating stock to which cutters may be attached.
<b>Dataset</b>	A collection of data.
<b>Debris management</b>	An active process of removing non-sediment material from the Don River to maintain desired hydrologic function.
<b>Decommissioning</b>	A formal process to remove something from active status.
<b>Delft3D</b>	A 2D/3D modelling system to investigate hydrodynamics, sediment transport and morphology and water quality for fluvial, estuarine and coastal environments.



<b>Delta</b>	A landform composed of deposited sediment that is created at the mouth of a river where it flows into another water body.
<b>Dendritic drainage</b>	Drainage system with irregular stream branching, with tributaries joining the main stream at all angles.
<b>Dense non-aqueous phase liquid (DNAPL)</b>	A liquid that is denser than water and does not dissolve in water.
<b>Downcutting</b>	A geologic process that deepens the channel of a stream or valley by removing material from the stream bed or valley floor.
<b>Drainage basin</b>	The area from which all precipitation flows to a single stream or set of streams.
<b>Dredge spoil</b>	The material removed from the river bed through dredging activity.
<b>Dredging</b>	Removal of sand, silt, rock or other underwater sea bottom material.
<b>Drowned rivermouth</b>	A funnel-shaped estuary formed by the submergence of the lower portion of the river valley.
<b>Early/mid successional</b>	Vegetation in the early/middle stages of development.
<b>Ecosystem-based approach</b>	A strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use.
<b>Edge effect</b>	The effect of the juxtaposition of contrasting environments on an ecosystem.
<b>Electro-fishing</b>	A common scientific survey method used to sample fish populations, which uses electricity to stun fish before they are caught.
<b>Embayment</b>	A bay or bay-like formation.
<b>Emergent Marsh</b>	A wetland that is permanently flooded and dominated by grasses and broadleaved flowering plants with less than 25% woody species.
<b>Environment</b>	As defined in the <i>Canadian EA Act</i> , “environment” means the components of the Earth, and includes: <ul style="list-style-type: none"><li>• land, water and air, including all layers of the atmosphere,</li><li>• all organic and inorganic matter and living organisms, and</li><li>• the interacting natural systems that include [the components listed above].</li></ul>
<b>Environmental Assessment</b>	A process for identifying project and environment interactions, predicting environmental effects, identifying mitigation measures, evaluating significance, reporting and following-up to verify accuracy and effectiveness.
<b>Environmentally sensitive area (ESA)</b>	An area with values which are identified to be of local interest and is designated and managed by a municipality.
<b>Erosion</b>	A condition in which the Earth's surface is worn away by the action of water and wind.

<b>Estuary</b>	A partly enclosed coastal body of water with one or more rivers or streams flowing into it, and with a free connection to the open sea.
<b>Exotic (invasive) species</b>	A species that has been introduced from another geographic region to an area outside of its natural range.
<b>Extirpated</b>	A species or subspecies that has been eliminated from a particular area, but not from its entire range.
<b>Fauna</b>	Animal life.
<b>Feeder channel</b>	A stream or river connected to a larger river.
<b>Floating skimmer</b>	Equipment used to remove free and floating oil.
<b>Flood protection</b>	Measures taken to prevent the flooding of an area (e.g., embankments, wetlands, etc.).
<b>Flood protection landform (FPL)</b>	An earthen structure which has been designed with geotechnically suitable material and has dimensions which minimize the three primary risks of failure associated with typical earthen dyke structures to negligible levels. The design specifications outlined in the DMNP are the minimum requirements that provide permanent flood risk removal. Consequently, to ensure the long term viability of the FPL to provide permanent flood risk removal, several restrictive operational constraints are required that have been outlined in the DMNP. These restrictions are administered by the Toronto and Region Conservation Authority and include, but may not be limited to, plantings, urban related servicing and land use.
<b>Flow rate</b>	The volume of fluid which passes through a given surface per unit time.
<b>Forage fish</b>	Also called prey fish, are small fish which are preyed on by larger predators for food.
<b>Fossiliferous</b>	Bearing or containing fossils.
<b>Foundry</b>	A factory that produces metal castings.
<b>Freeboard</b>	The distance between normal water level and the top of a river bank.
<b>French drain</b>	A ditch covered with gravel or rock that redirects surface and groundwater away from an area.
<b>Geoenvironmental</b>	Related to the part of the lithosphere (crust of the Earth) which is affected by humans.
<b>Geographic Information System (GIS)</b>	A computerized system that captures, stores, analyzes, manages, and presents data that are linked to location.
<b>Geomembrane</b>	An impermeable membrane (layer) used widely as cut-offs and liners, usually in canals and ponds.
<b>Geomorphology</b>	The scientific study of landforms and the processes that shape them.

<b>Geotextile</b>	A permeable fabric which, when used in association with soil, has the ability to separate, filter, reinforce, protect, or drain.
<b>Grab sampling</b>	A research technique by which all of the test material is collected at one time.
<b>Grading</b>	Ensuring a level (or possibly sloped to specific degree) base for a construction work.
<b>HAAT model</b>	The Habitat Alteration and Assessment Tool (HAAT) model, which is used for assessing productivity of fish habitat based on substrate and other criteria.
<b>Habitat suitability indices</b>	Numerical indices that represents the capacity of a given habitat to support a selected species. Results represent the interactions of the habitat characteristics and how each habitat relates to a given species.
<b>Hardpiped utility</b>	A utility transferred or connected through inflexible piping.
<b>Headwater</b>	The place from which the water in a river or stream originates.
<b>Herbaceous</b>	Describes a plant that has leaves and stems that die down at the end of the growing season to the soil level, with no persistent woody stem above ground.
<b>Hydraulic</b>	Applied science term relating to fluids in motion.
<b>Hydrocyclone</b>	A machine used to separate solid particles in a liquid suspension (e.g., sediment contained in water) based on the densities of the particles.
<b>Hydrograph</b>	A graph showing changes in the discharge (amount of water) of a river over a period of time.
<b>Hydrology</b>	The study of the movement, distribution, and quality of water.
<b>Hydroperiod</b>	The length of time, frequency, and depth that a particular area remains flooded.
<b>Ice management</b>	Measures used to ensure that ice does not block river flow.
<b>“In the dry”</b>	Construction activities completed in generally dry conditions.
<b>“In the wet”</b>	Construction activities completed in generally wet conditions (e.g., completely or partially under water).
<b>Indicator</b>	Measurement used to assess the effect of a project an environmental component.
<b>Indigenous species (plant or animal)</b>	A species that is native to a given region or ecosystem as a result of only natural processes, with no human intervention.
<b>Inert</b>	Materials that are uncontaminated and/or do not move about easily in the environment.
<b>Inorganic</b>	Compounds considered to be of a mineral, not biological, origin.
<b>Interbeds</b>	Alternating layers of different materials in a section of bedded rocks.

<b>Interior habitat</b>	The forest area located greater than 300 feet from the forest edge.
<b>Intermixed gravel</b>	Various forms of rock that are between 2 mm and 64 mm mixed together with one another.
<b>Interpolate</b>	To introduce (something additional or extraneous) between other things or parts.
<b>Inundate</b>	To flood with water.
<b>Isostatic</b>	Changes in elevation created by the weight of one material on another.
<b>Lake level fluctuation</b>	Changes in the level of a lake due to various factors, including climatic fluctuations and variations in inputs and outputs to the lake.
<b>Lacustrine</b>	Pertaining to lakes.
<b>Leachate</b>	A liquid formed by water percolating through soil or waste in a landfill.
<b>Levee</b>	A natural or artificial slope or wall to regulate water levels that is often parallel to the course of a river.
<b>Life-cycle assessment</b>	Methodology used to assess a product's full environmental cost, from the harvesting of raw material to final disposal.
<b>Light non-aqueous phase liquid</b>	A liquid that is less dense than water and does not dissolve in water (e.g., oil and gasoline).
<b>Listed wildlife species</b>	Animals with some conservation status, either provincially or federally.
<b>Low-flow channel</b>	The channel of the new river mouth where water will flow under normal (non-flooding) conditions.
<b>Low-level interceptor</b>	A sewer designed to convey dry weather flow (and a minor component of wet weather flow) from the combined sewer system to the treatment plant.
<b>Lower Don Lands (LDL)</b>	The area of land generally bordered by Lake Shore Boulevard/Gardiner Expressway to the north, the Inner Harbour to the west, the Ship Channel to the south, and the Don Roadway to the east.
<b>Macrophyte</b>	An aquatic plant that grows in or near water and is either emergent (coming out of the water), submergent (fully underwater), or floating.
<b>Meadow marsh</b>	A wetland that is seasonally flooded and dominated by grasses and broadleaved flowering plants with less than 25% woody species.
<b>Microtopography</b>	Very small scale variations in the height and roughness of the ground surface.
<b>Mitigation</b>	An attempt to offset potential adverse effects of human activity on the environment.
<b>Mitigative measure</b>	Action or program intended to offset known impacts to an existing natural resource such as a stream, wetland, or endangered species.
<b>Morphologic/Morphology</b>	Relating to the shapes of river channels and how they change over time.

<b>Net Effects</b>	The impacts, both positive and negative, of an alternative, which remain after mitigation measures have been applied.
<b>Non-aqueous phase liquid (NAPL)</b>	A liquid that does not dissolve in water.
<b>Nuisance effect</b>	An effect of a project that is considered to be inconvenient or annoying (e.g., noise, traffic).
<b>Oligochaetes</b>	A subclass in the biological phylum Annelida and includes various earthworms.
<b>Orthophoto</b>	An aerial photograph geometrically corrected (“orthorectified”) such that the scale is uniform and the photo has the same lack of distortion as a map.
<b>Overbank area</b>	The area that is covered by water as a river floods over its banks.
<b>Overflow channel</b>	The channel of the new river mouth where water will flow under flooding conditions, once there is too much water to be contained in the low-flow channel.
<b>Overflow spillway</b>	See “Overflow channel”.
<b>Oxidation</b>	A process where minerals in the soil combine with some of the oxygen dissolved in the soil moisture.
<b>Palaeontological</b>	Relating to the study of prehistoric life, including organisms’ evolution and interactions with each other and their environments.
<b>Permeability/Permeable</b>	The ability of a substance or layer (e.g., rocks, ground covering) to allow certain substances (e.g., water, dust) to pass through it.
<b>Petroleum hydrocarbons</b>	A group of organic compounds containing hydrogen and carbon. Most are derived from crude oil and geological sources such as coal.
<b>Phreatic surface</b>	The level of groundwater where hydrostatic pressure is equal to that of the atmosphere, and usually coincides with the water table.
<b>Piscivore</b>	A carnivorous animal whose diet consists primarily of fish.
<b>Polycyclic aromatic hydrocarbons (PAH)</b>	A group of approximately 10,000 compounds, most of which arise from the incomplete burning of carbon-containing materials such as oil, garbage, coal or wood.
<b>Precinct Plan</b>	A plan that provides guidance for future changes to an area. It is published after extensive public consultation and usually acts as a preceptor to Secondary Plan and Zoning By-law amendments.
<b>Promontory</b>	A prominent mass of land which overlooks lower lying land or a body of water.
<b>Provincially Significant Wetland (PSW)</b>	A wetland that is protected by the Province of Ontario under the Provincial Policy Statement (PPS). The Ontario Ministry of Natural Resources uses an evaluation system to classify wetlands in Ontario as either Provincially Significant or Locally Significant.

<b>Refugia</b>	A location of an isolated or relict population of a once widespread animal or plant species.
<b>Recharge (groundwater)</b>	A process where water moves downward from surface water to groundwater.
<b>Remedial Action Plan (RAP)</b>	A document prepared and implemented through cooperation between federal, provincial, and municipal governments, with the goal of reducing pollution in Areas of Concern identified under the Canada-United States Great Lakes Water Quality Agreement.
<b>Revetment</b>	A sloping structure placed on banks or cliffs in such a way as to absorb the energy of incoming water.
<b>Riffle</b>	A part of a stream characterized by shallow, fast-moving water broken by the presence of rocks and boulders.
<b>Riparian vegetation/ Riparian zone</b>	Plant communities along river margins (edges).
<b>Riprap</b>	Rock or other material used to armour (protect) shorelines, streambeds, bridge abutments, pilings and other shoreline structures against scour, water or ice erosion.
<b>Riverine habitat</b>	Habitat offered by a river.
<b>Riverine wetland</b>	Riverine wetlands are found within river and stream channels and are strongly influenced by seasonal runoff patterns. When inundated, riverine wetlands provide habitat for water-tolerant plants such as willows, and aquatic animals such as tadpoles and immature fish.
<b>Rivulet</b>	A type of stream (a flowing body of water with a current, confined within a bed and stream banks).
<b>Roughness coefficient</b>	Part of an empirical formula for river water flow, which affects the speed of water in the river.
<b>Ruderal plant</b>	Plants robust enough to grow on bare ground or contaminated land.
<b>Ruderal plant community</b>	A group of plants that is first to colonize disturbed lands. The disturbance may be natural (e.g., wildfires or avalanches), or due to human influence – constructional (e.g., road construction, building construction or mining), or agricultural (e.g., abandoned farming fields or abandoned irrigation ditches).
<b>Sand horizon</b>	A specific layer of sand which is parallel to the soil surface and possesses physical characteristics which differ from the layers above and beneath.
<b>Scalable map</b>	A map which has been defined as the ratio of a distance on the map to the corresponding distance on the ground.
<b>Scouring and deposition</b>	The wearing away of a material due to the movement of water and the associated settling of the material elsewhere.
<b>Seawaymax</b>	Vessels which are the maximum size that can fit through the canal locks of the St. Lawrence Seaway (225.6 m in length, 23.8 m wide, and with a draft of 7.92 m).

<b>Secchi depth</b>	The depth in water at which the pattern on a Secchi disk is no longer visible; this is a measure of the transparency of the water and is related to water turbidity.
<b>Seiches</b>	Periodic oscillations of water level set in motion by some atmospheric disturbance.
<b>Seepage wetland</b>	A wetland that is located where a gently sloping land surface intersects the water table, and receives water from subterranean aquifers (groundwater).
<b>Shear stresses</b>	Stresses which are applied parallel to the face of a material, as opposed to normal stresses which are applied perpendicularly.
<b>Sinuosity</b>	A measure of deviation of a path length from the shortest possible path.
<b>Slurry</b>	A thick suspension of solids in a liquid
<b>Spill Zone</b>	An area of land predicted to flood during the Regulatory Flood.
<b>Stratum</b>	A layer of rock or soil with internally consistent characteristics that distinguish it from contiguous layers.
<b>Thalweg</b>	A line drawn to join the lowest points along the entire length of a stream bed or valley in its downward slope, defining its deepest channel. It thus marks the natural direction (the profile) of a watercourse, and is almost always the line of fastest flow in any river.
<b>Trophic</b>	Relating to the position that an organism occupies on the food chain (a succession of organisms that eat another organism and are, in turn, eaten themselves). Primary producers (plants) are level 1, herbivores (plant eaters) are level 2, and so on.
<b>Utilidor</b>	A corridor built underground or aboveground to carry utility lines such as electricity, water and sewers.
<b>Valley wall feature (VWF)</b>	A modification of the FPL that extends the dry side slopes and width of the crest to create fill dimensions well beyond that which exist within a typical FPL. By doing this, the risk of failure is minimized to as near zero as is feasible, thereby allowing the Conservation Authority to relax a number of the restrictions that exist within the FPL feature, specifically related to urban servicing and land use, and instead apply standard valley and stream corridor development guidelines.
<b>Volatile organic compounds (VOCs)</b>	Compounds with a high vapour pressure which can easily be released as gases at normal temperatures.
<b>Walkability</b>	A measure of how friendly an area or community is to walking.
<b>Weir</b>	A small overflow-type dam commonly used to raise the level of a river or stream.
<b>Wharfage</b>	The charge assessed against cargo or merchandise, vessel's stores, fuel and supplies for passage on, over, under or through a wharf.