



# Cherry Street Lakefilling and Design

June 21, 2017

## Introduction

- This project was last presented at DRP in April 2017 for Schematic Design
- This is the third time the project is presenting to the Panel.



## Policy Context - Central Waterfront Secondary Plan

C21\_RENATURALIZING THE MOUTH OF THE DON RIVER - This project is part of the approved plan for the naturalization of the mouth of the Don River.

(P28) Lakefilling will be considered only for stabilizing shorelines, improving open spaces, creating trail connections, preventing siltation and improving natural habitats and is subject to Provincial and Federal Environmental Assessment processes. Consideration will be given to the impact of such lakefilling on recreational uses.

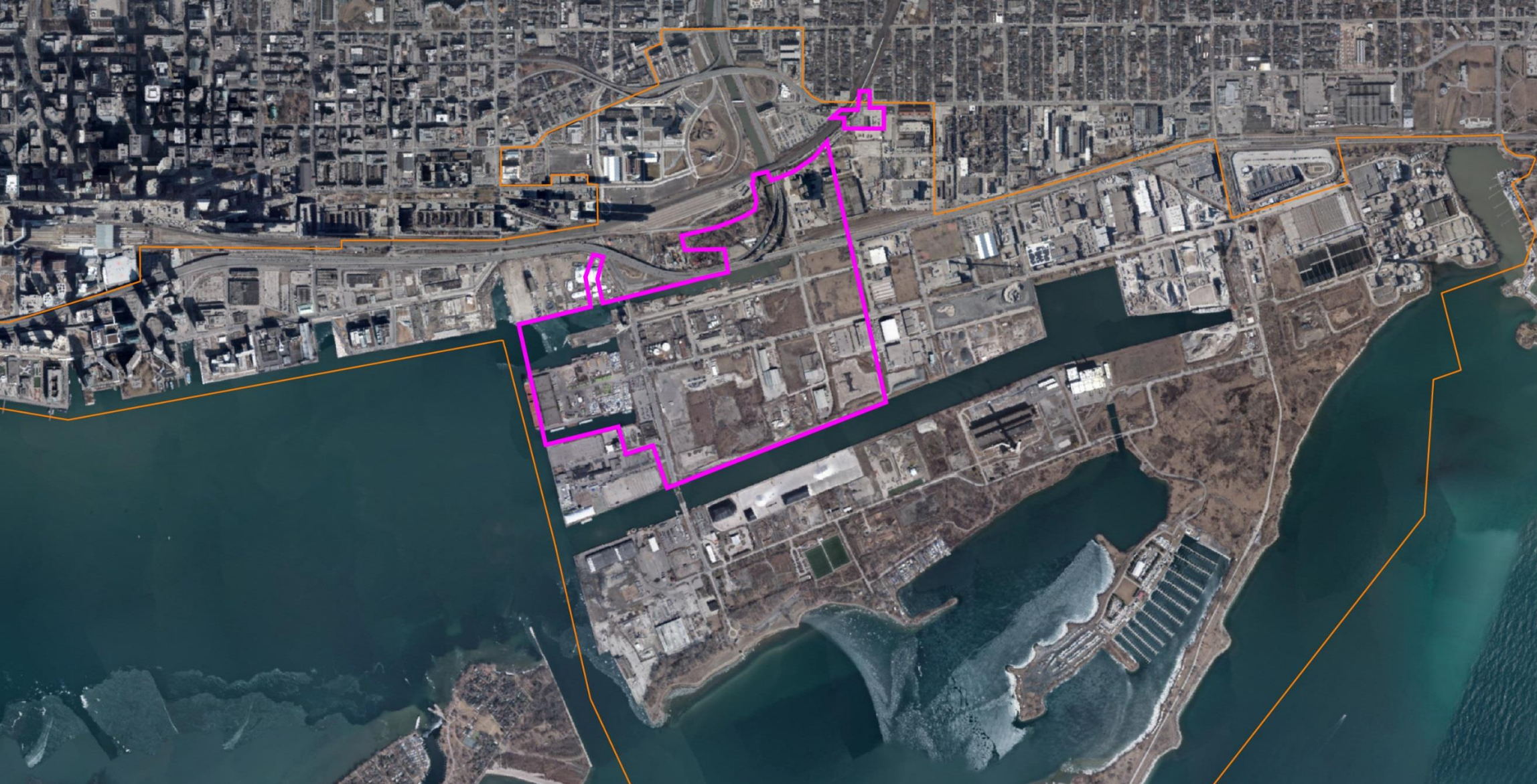
# Site Context

## Cherry Street Lakefilling Design

Proponent: Waterfront Toronto

Presenters: Herb Sweeney, MVA

Review Stage: Schematic Design

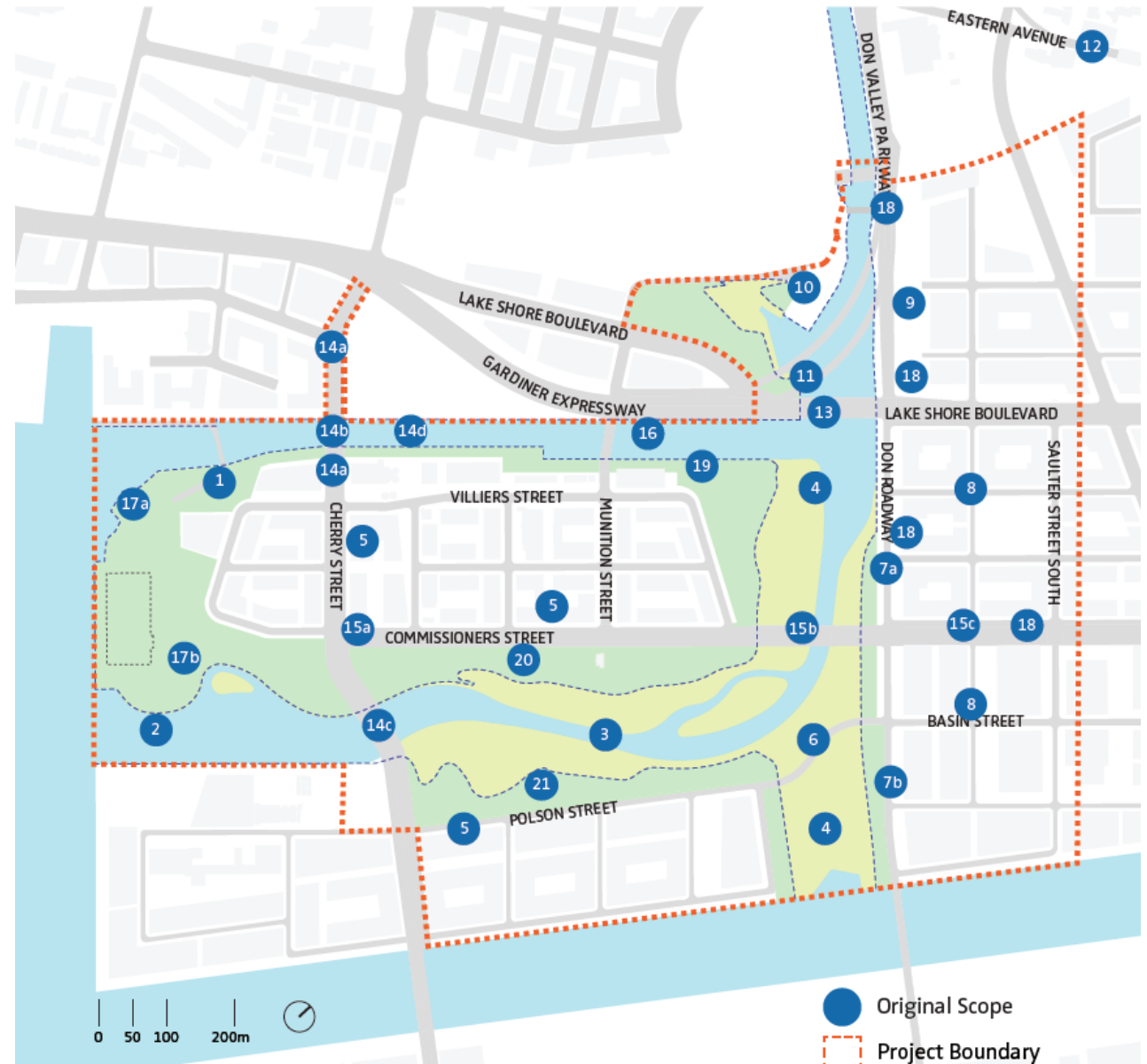




## Site Context – Port Lands Flood Protection Project Scope

### 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



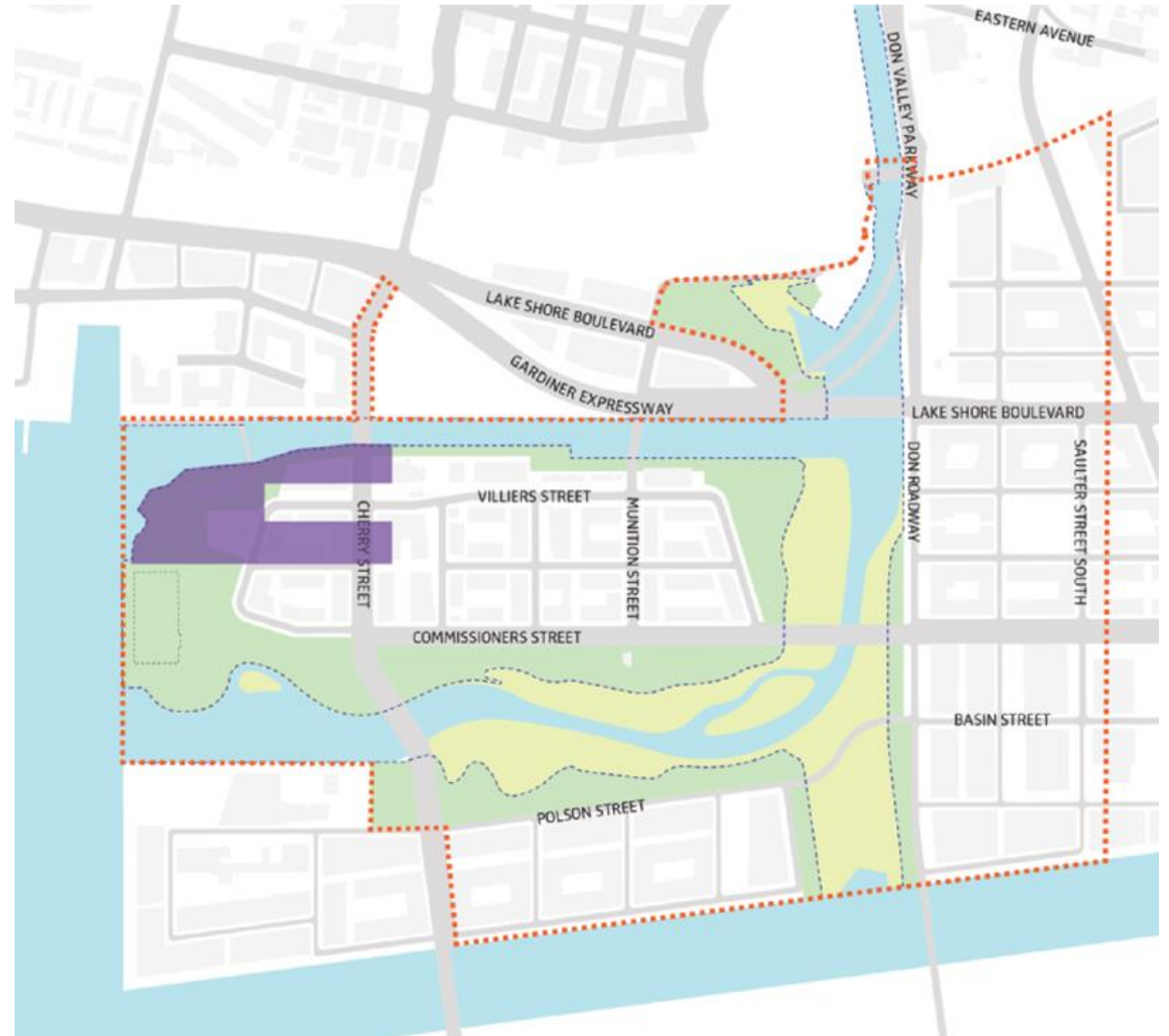
● Original Scope  
 □ Project Boundary



## Background

September 14<sup>th</sup>, the three orders of Government announced \$65M for the Essroc Quay Lakefilling Project:

- Part of the broader Project yet can be completed on a stand-alone basis
- Create a new landmass around the current Essroc Quay and stabilize the area shoreline under flood conditions
- Improve water quality, optimize water and storm water infrastructure
- Create new naturalized open spaces and aquatic habitat
- Facilitate the construction of roads and transit into the Port Lands by enabling shift of Cherry Street Bridge
- Does not include Promontory Park design/construction



## Scope of Work:

- Lead Engineer (CH2M) was retained in March, 2017
- MVVA, MMM, LimnoTech and Interfluve have been retained to:
  - Provide design integration as it relates to the future Promontory Park
  - Design Fish Habitat Compensation
  - Undertake design for diversion of existing sewers and oversee Construction Administration for this work.
- Design integration for Promontory Park north and south will proceed as part of detailed design for major river project
- This presentation will focus on detailed design scope of present Cherry Street Lakefilling project only, which includes:
  - Aquatic habitat
  - Park edge

### Project Schedule:

- The Essroc Quay Lakefilling must be complete by 2019 due to condition of funding.
- Construction for Essroc Quay Lakefilling containment structures must commence in August 2017.



# Recap

## Summary of the Panel's comments from April 2017:

- Overall a strong and clear concept
- Views back to the City, Lake and the neighbourhood are all critical – refine how the linear and curved features of the park elements will enhance the views
- **Think about how the cove meets the wall including size, placement, integration of soft landscape with hard stone armour**
- Bridge element to be studied before making a conclusion on whether it is necessary
- Think about the integration of the two sides of the hill: the water side and the neighbourhood side



## Areas for Panel Consideration

- Integration of the causeway and harbour overlook staircase
- Character of the beach
- Use of the dimensional stone

# **Cherry Street Lakefilling Design Review Submission**

**21 June 2017**

**Michael Van Valkenburgh Associates, Inc.  
Landscape Architects**

**Project Name:** Cherry Street Lakefilling

**Proponent:** Michael Van Valkenburgh Associates, Inc. Landscape Architects

<b>Design Review Panel Consensus Comments</b>	<b>Proponent's Response</b>
1. MT35 building preservation is supported – further explore how vegetation dissolves into the structure.	1. Due to the recent fire on 05/25 this has not been advanced. Further advancement of this item will be addressed in Promontory Park Schematic Design Phase.
2. Views back to the City, Lake and the neighbourhood are all critical – refine how the linear and curved features of the park elements will enhance the views.	2. Further advancement of this item will be addressed in Promontory Park Schematic Design Phase.
3. Think about how the cove meets the wall including size, placement, integration of soft landscape with hard stone armour.	3. The design and alignment of the rocky causeway has been modified to resemble the language of the rest of the park. The stone size at the armour slope has been reduced and dimensional stones have been incorporated for water access. The vegetated area at the east side of the West Cove has been expanded.
4. Bridge element to be studied before making a conclusion on whether it is necessary.	4. Further advancement of this item will be addressed in Promontory Park Schematic Design Phase.
5. Think about the integration of the two sides of the hill: the water side and the neighbourhood side.	5. Further advancement of this item will be addressed in Promontory Park Schematic Design Phase.

## Proponent Response Chart





Toronto Inner Harbour

Central Waterfront Esplanade

East Bayfront

Queens Quay Alignment

Slip Head

Victory Soya Silos

Gardiner Expy

Downtown Grid Alignment  
Trinity Street

Downtown Grid Alignment  
Cherry Street

Marine Terminal 35

Cousins Quay

Essroc Silos

Essroc Quay

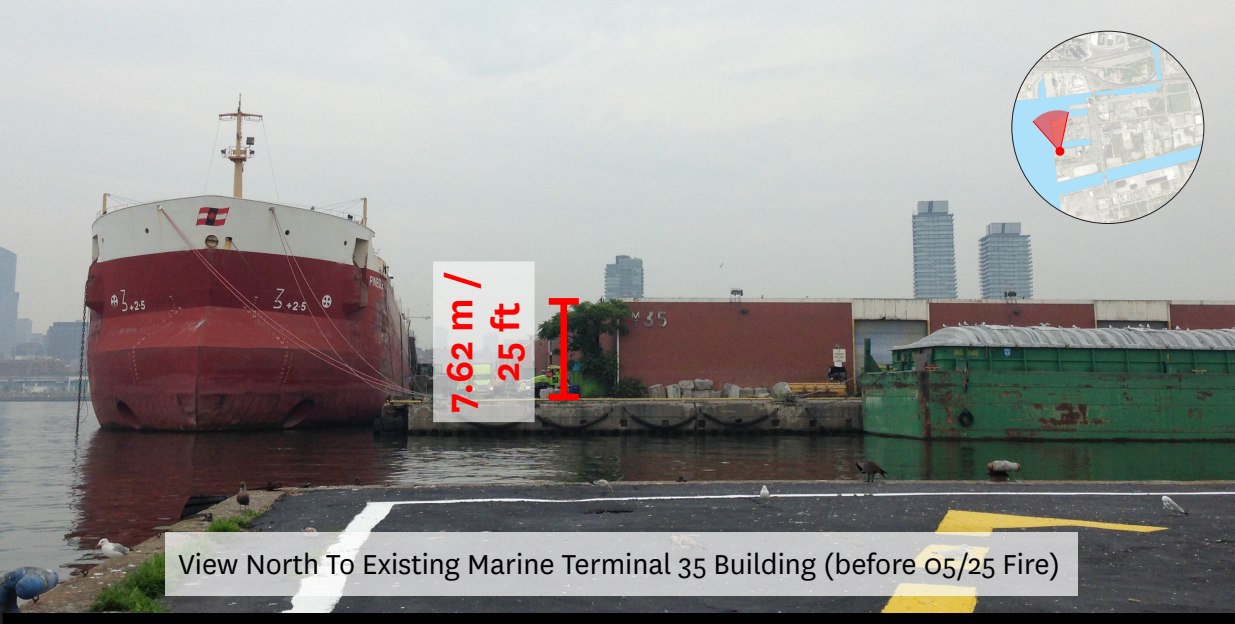
Keating Channel

Existing Cherry Street R.O.W.

Villiers Street

Cherry Street Lakefill Project Area





View North To Existing Marine Terminal 35 Building (before 05/25 Fire)



View West from Southeast Corner of Essroc Quay



View South to Existing Essroc Silos and Building Structure to Remain

# Existing Site Conditions

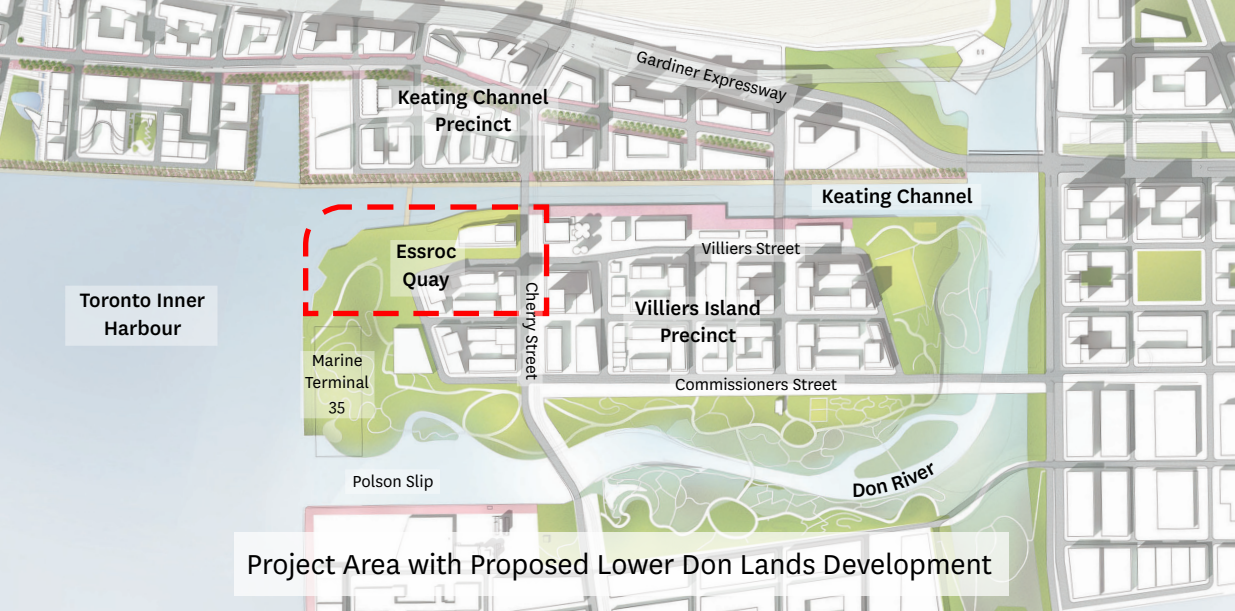




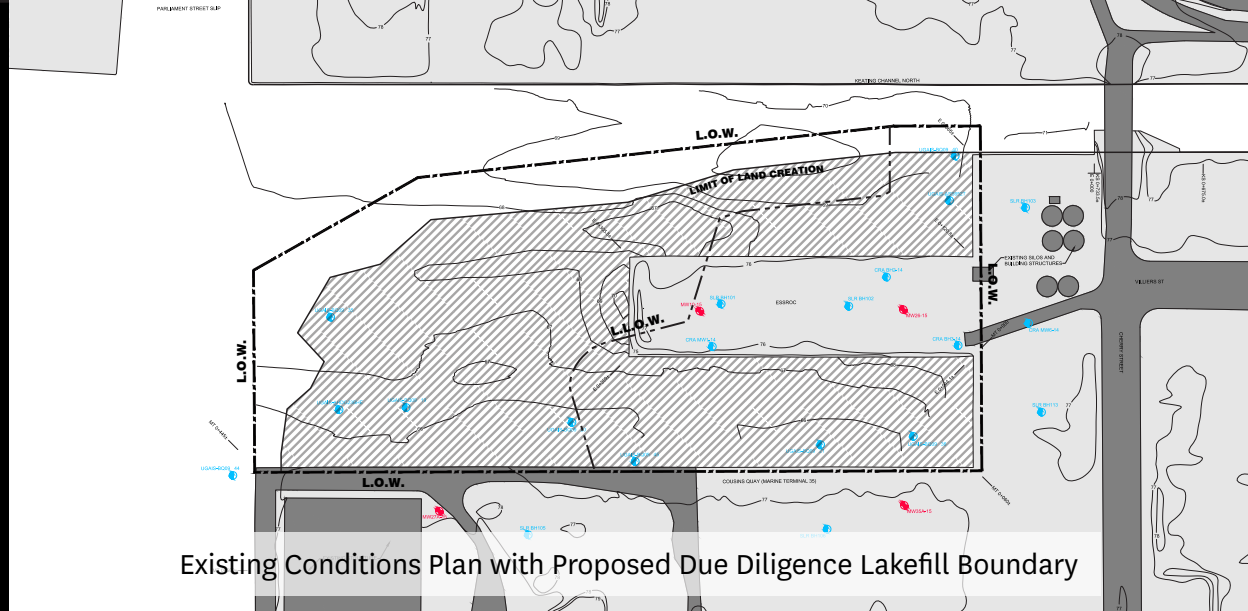
Courtesy of Toronto and Region Conservation Authority, June 2017

## Existing Site Conditions at Marine Terminal 35 Building

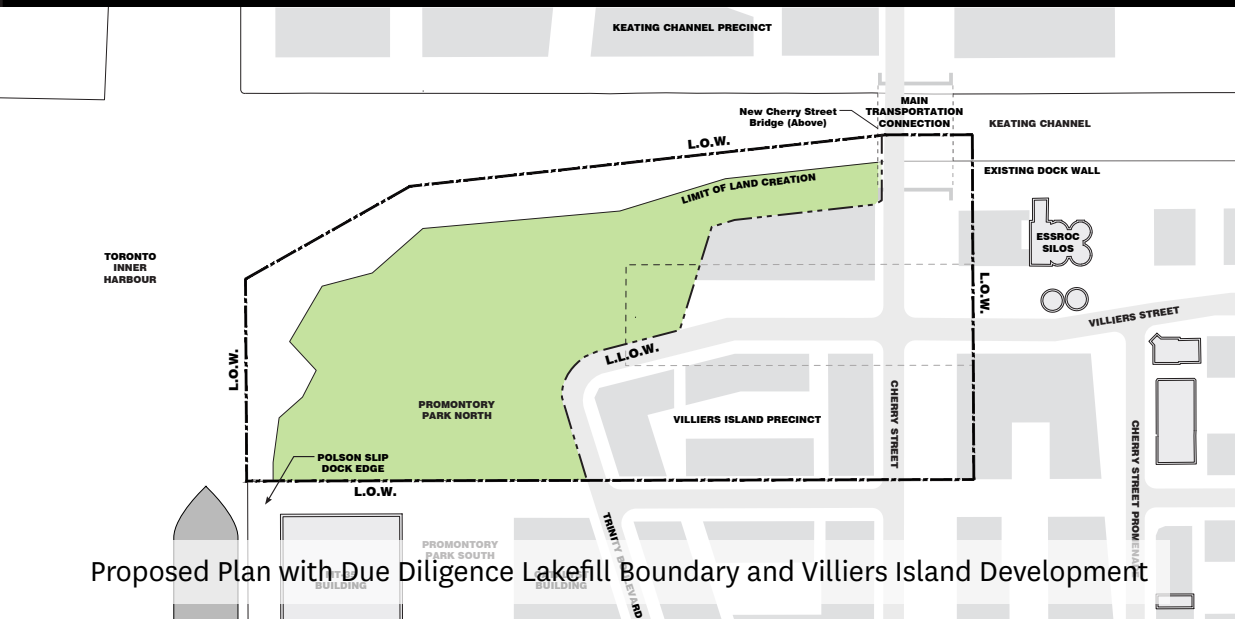




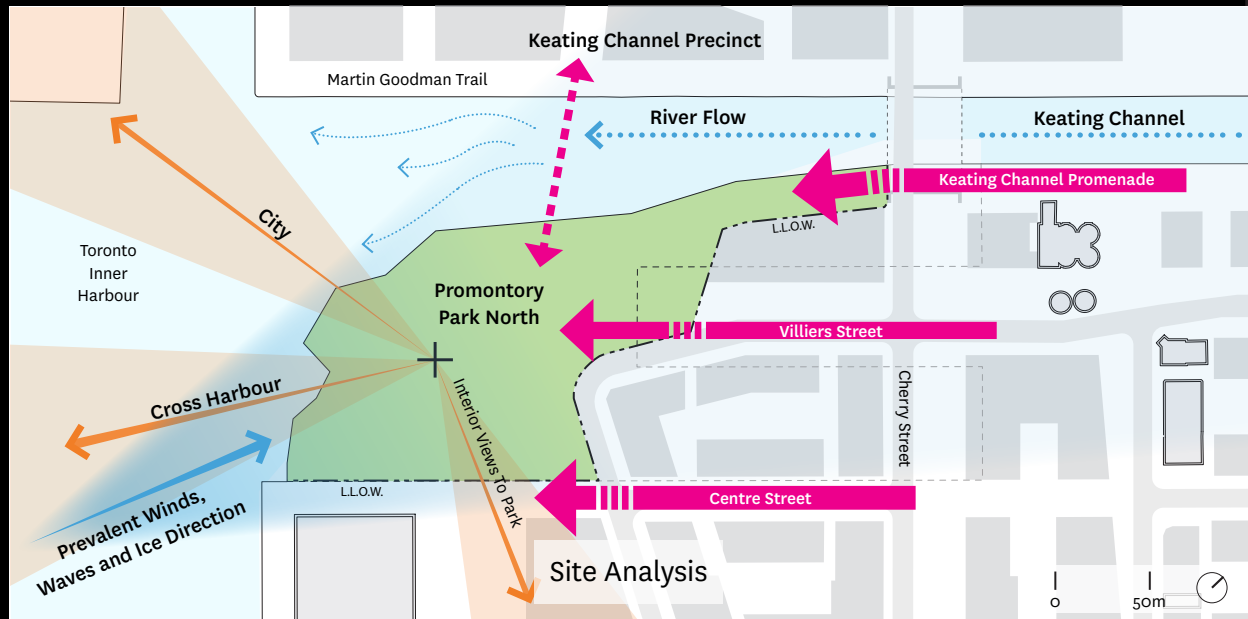
Project Area with Proposed Lower Don Lands Development



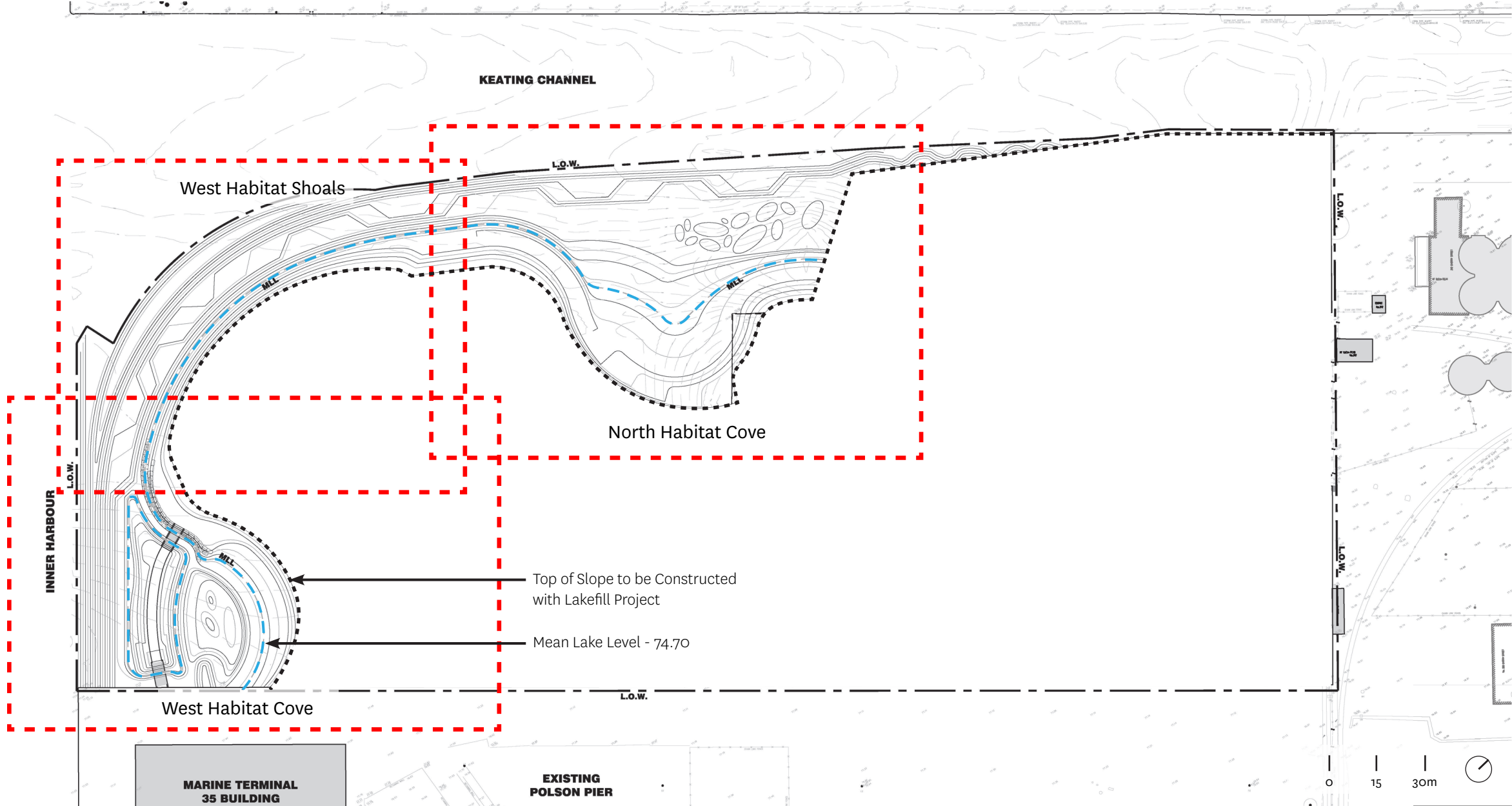
Existing Conditions Plan with Proposed Due Diligence Lakefill Boundary



Proposed Plan with Due Diligence Lakefill Boundary and Villiers Island Development



# Cherry Street Lakefill Site Context

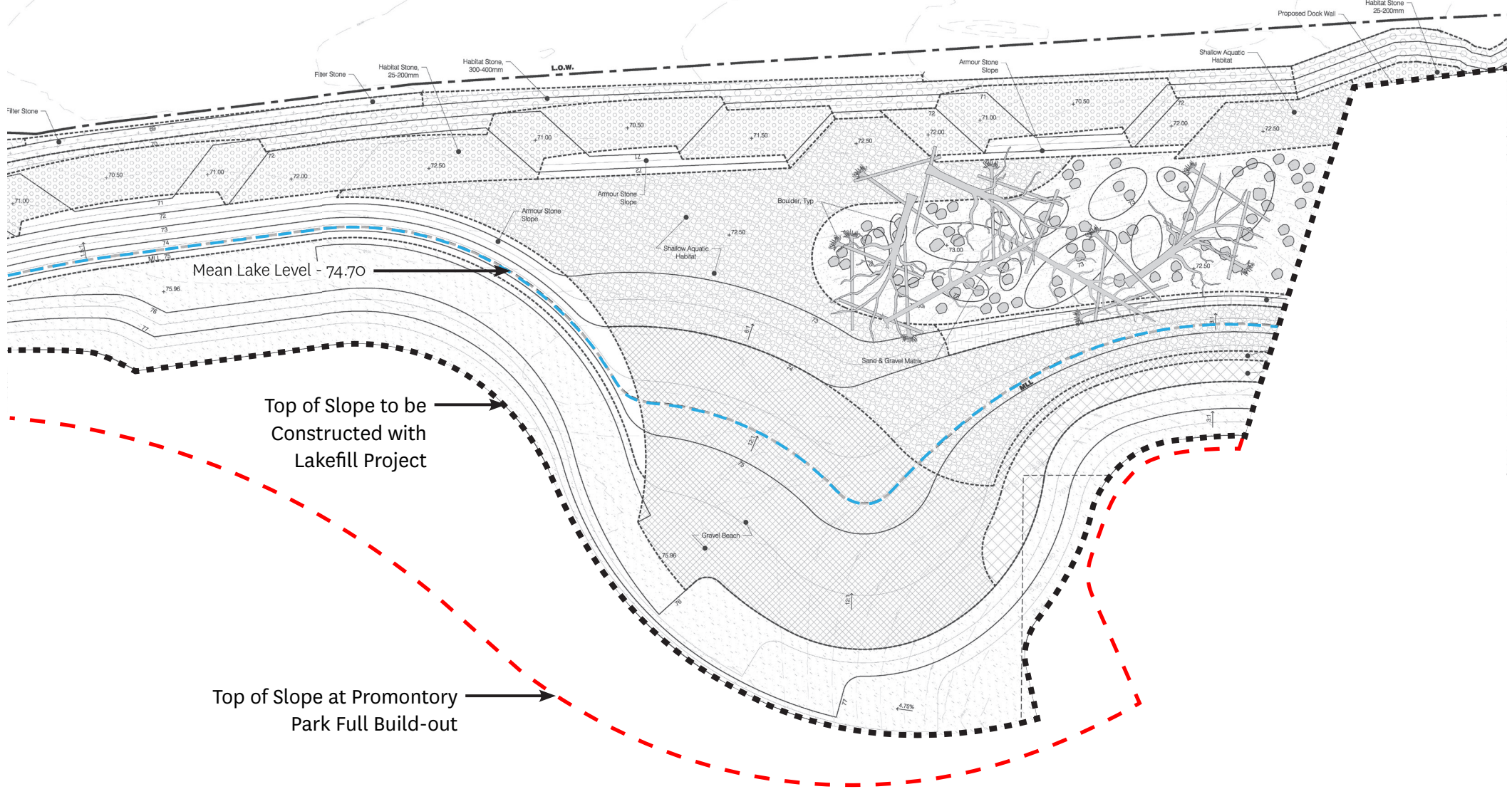


**Cherry Street Lakefilling Aquatic Habitat - Reference Plan**



**Layout & Materials Plan Legend**

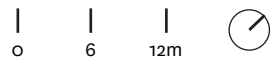
- L.O.W.** Limit of Work
- Matchline**
- MLL** Mean Lake Level
- Habitat Stone - 25-200mm Dia, Typ
- Habitat Stone - 300-400mm Dia, Typ
- Filter Stone - (35 Kg +/-), Typ
- Armour Stone Slope -(2) Layers 450mm Dia, Typ
- Shallow Aquatic Habitat - Cobble to Small Riprap, Typ
- Sand/Gravel Matrix 50% coarse sand, 50% small gravel 10-30mm Dia
- Gravel Beach, Type, Unsorted Gradation from small gravel to small cobble 40-150mm Dia
- Gravel Beach, Type 2, Unsorted Gradation from small gravel to small cobble 150-250mm Dia
- Stacked Boulder Wall, 1-1.5m Dia
- Stone Revetment - 1-2m Stone Blocks
- Low Lacustrine Vegetation, EL 74.9-76
- Wetted Fringe Vegetation, EL 74.4-74.9
- Shallow Submergent Vegetation, EL 73.9-74.4
- Deep Submergent Vegetation, EL 72.5-73.9
- Exposed Aggregate Pavement
- Limit of Lake Fill
- Concrete
- Anchored Wood Habitat, Refer to Ecology Dwgs
- Anchored Wood Pilings, Refer to Ecology Dwgs
- Boulders



Mean Lake Level - 74.70

Top of Slope to be Constructed with Lakefill Project

Top of Slope at Promontory Park Full Build-out



**North Habitat Cove - Enlargement Plan**



**Cobble Beach**  
5-150 mm ø

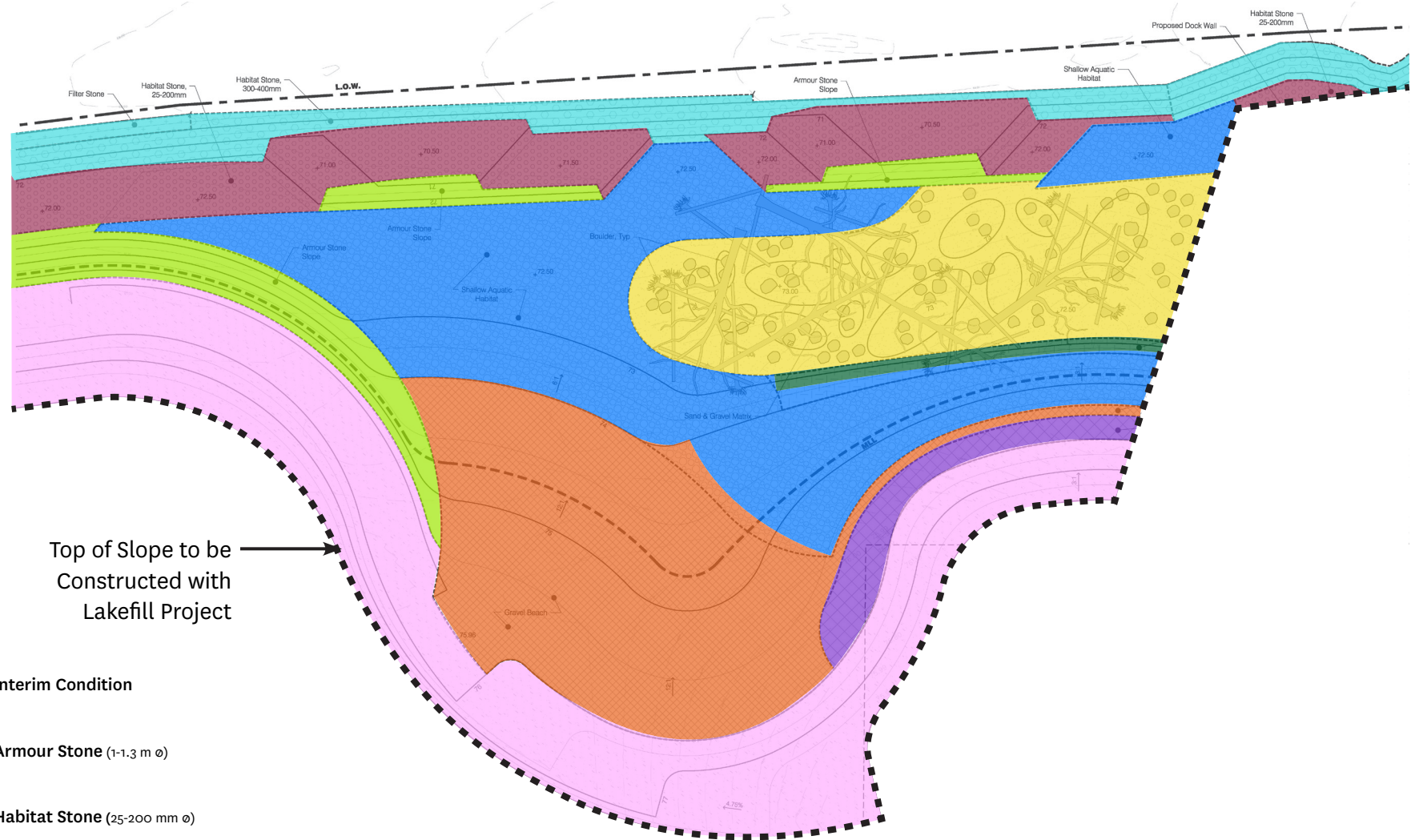
**Cobble Beach**  
150-250 mm ø



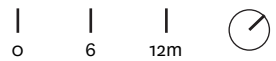
**Armour Stone** (450 mm ø)



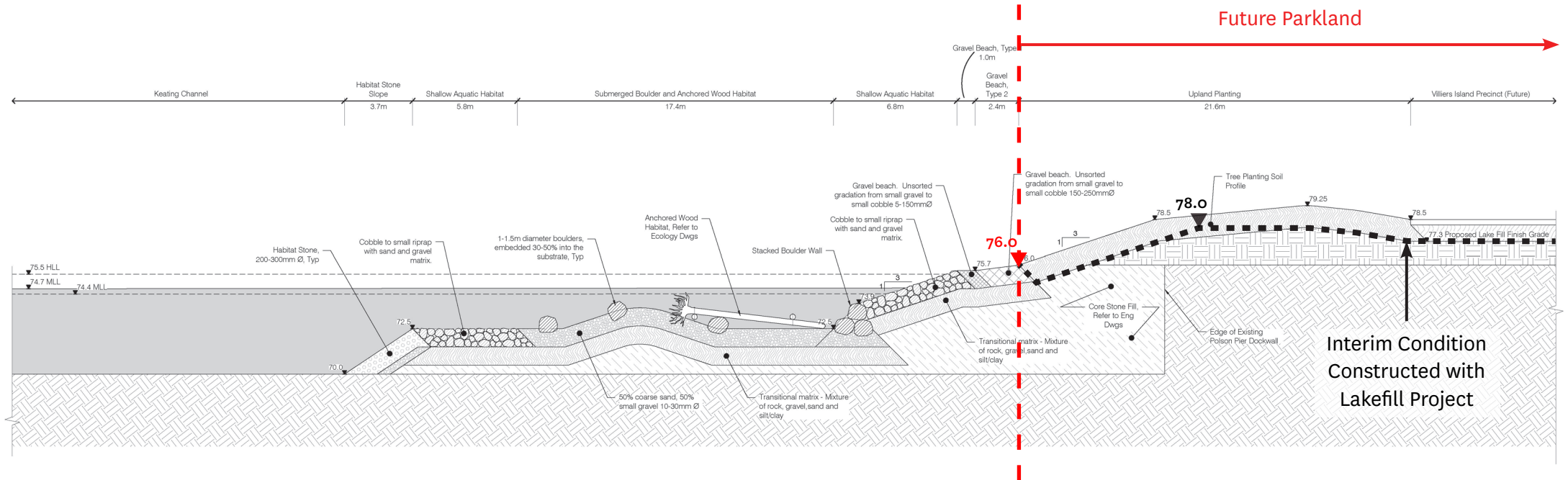
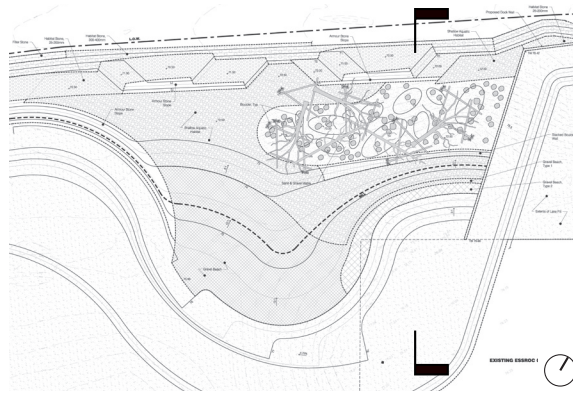
**Wood + Boulder Habitat**



- Interim Condition**
- Armour Stone** (1-1.3 m ø)
- Habitat Stone** (25-200 mm ø)
- Habitat Stone** (200-300 mm ø)
- Shallow Aquatic Habitat** (Cobble to Small Riprap)

















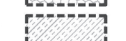








# North Habitat Cove - Materials Diagram

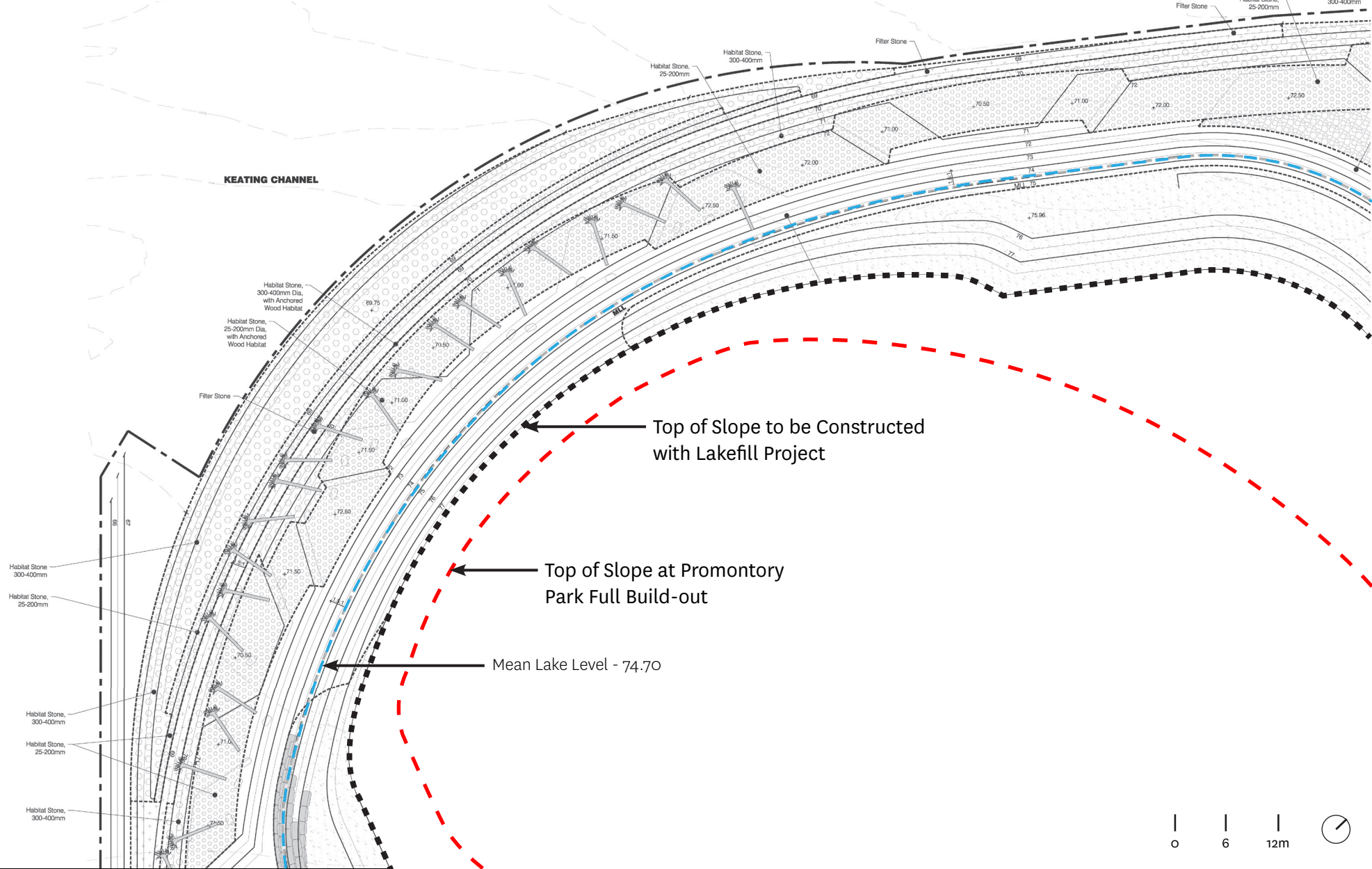


North Habitat Cove - Section



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**West Habitat Shoals - Enlargement Plan**

**Armour Stone (450 mm  $\phi$ )**



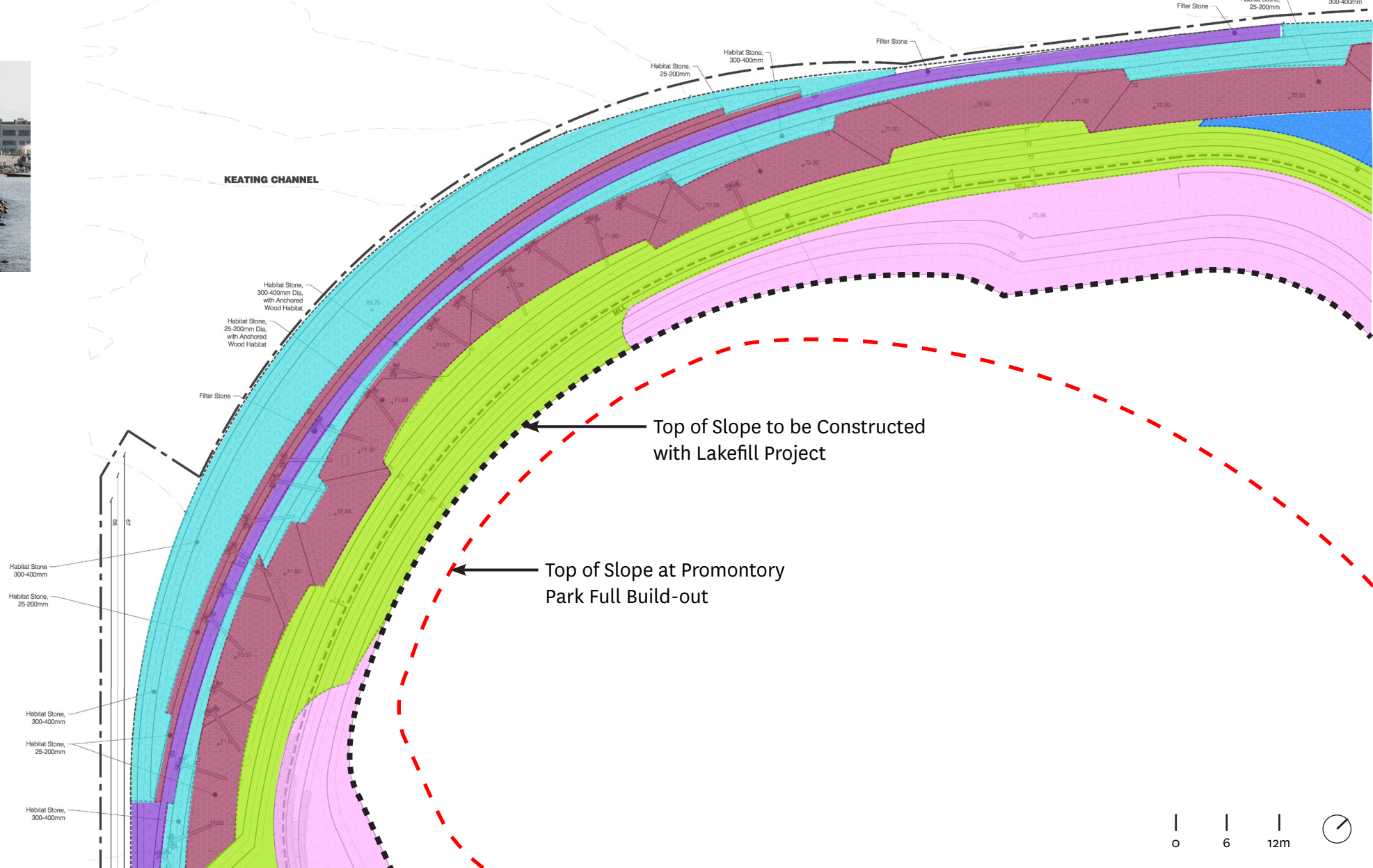
**Habitat Stone (25-200 mm  $\phi$ )**

**Habitat Stone (200-300 mm  $\phi$ )**

**Filter Stone**

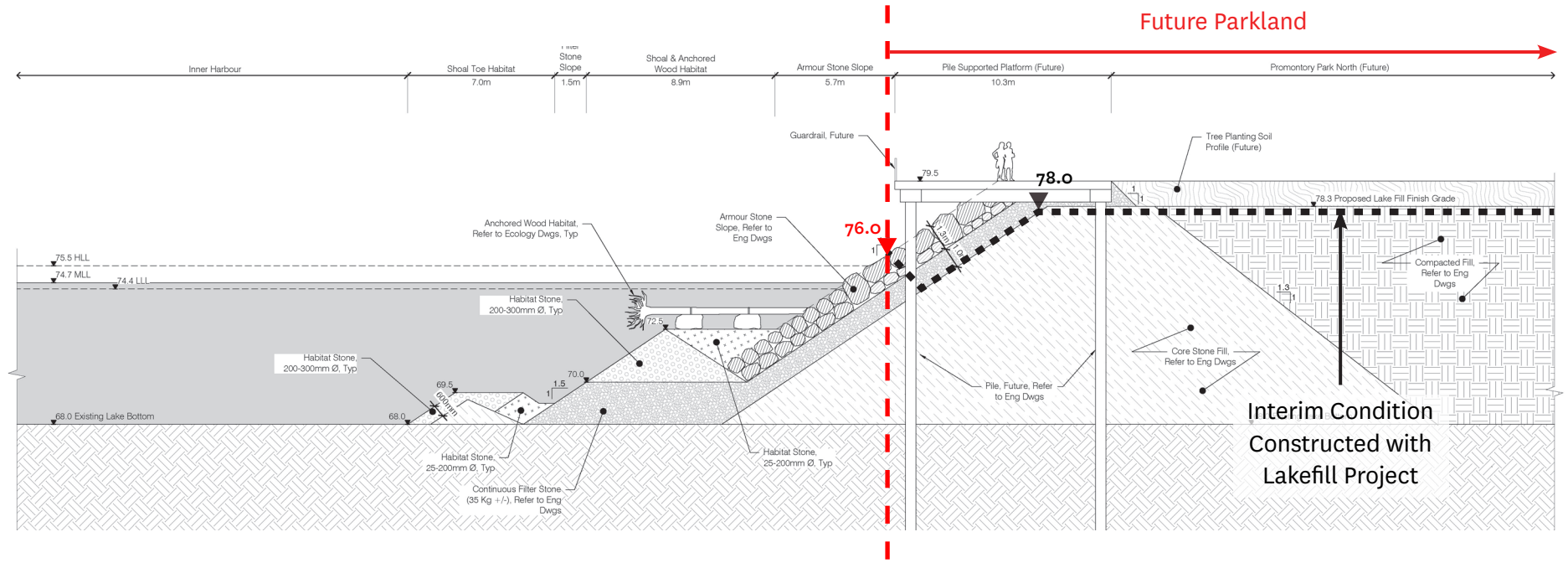
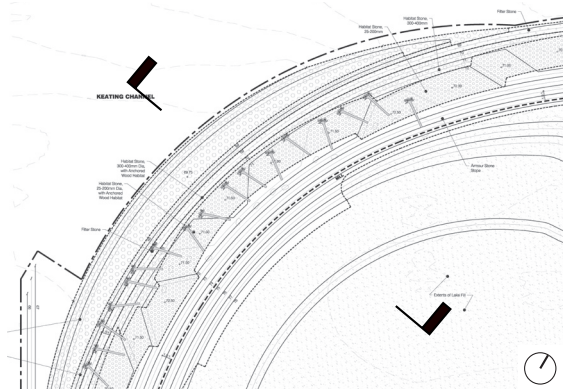
**Shallow Aquatic Habitat  
(Cobble to Small Riprap)**

**Interim Condition**

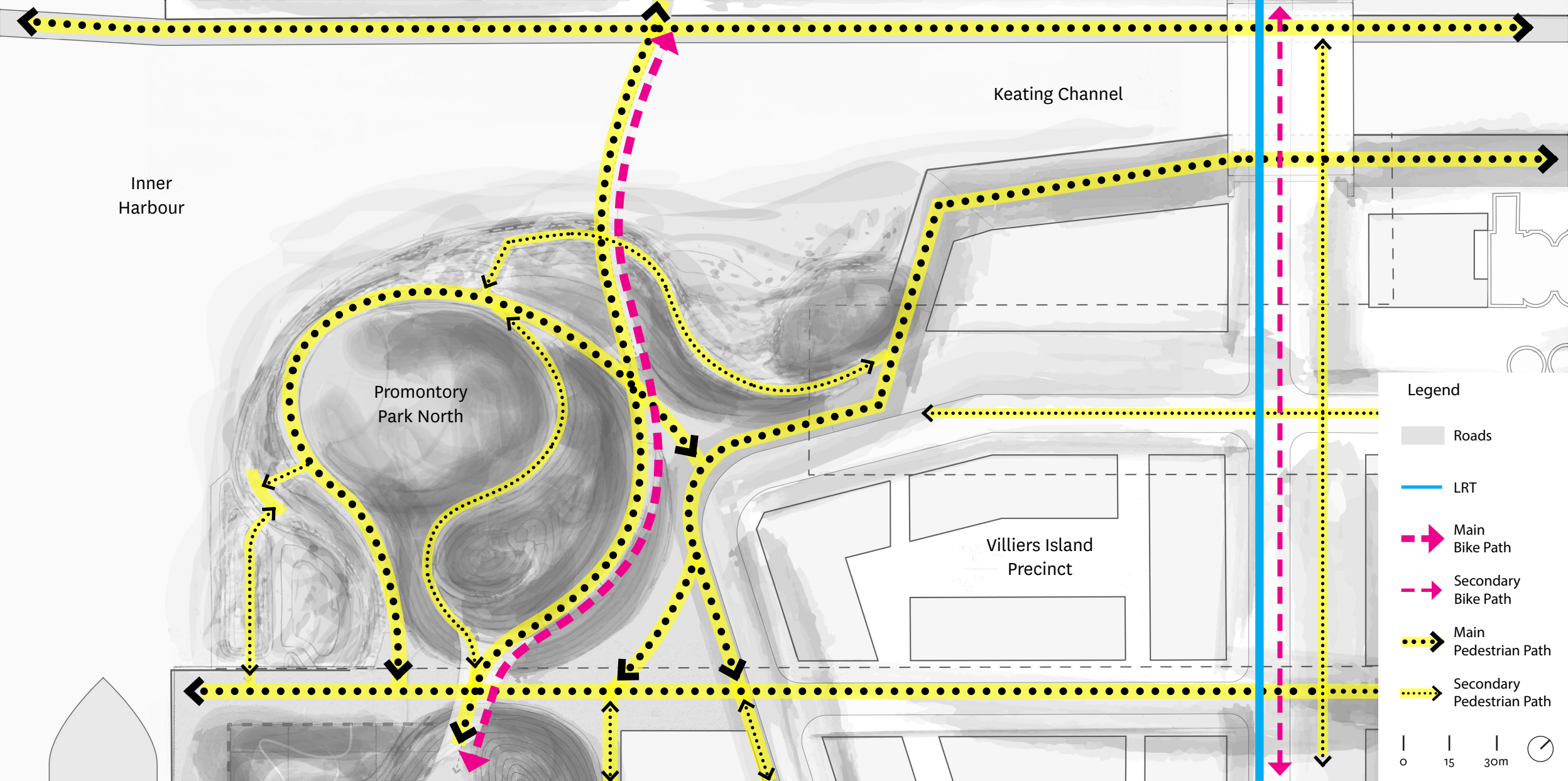


**West Habitat Shoals - Materials Diagram**

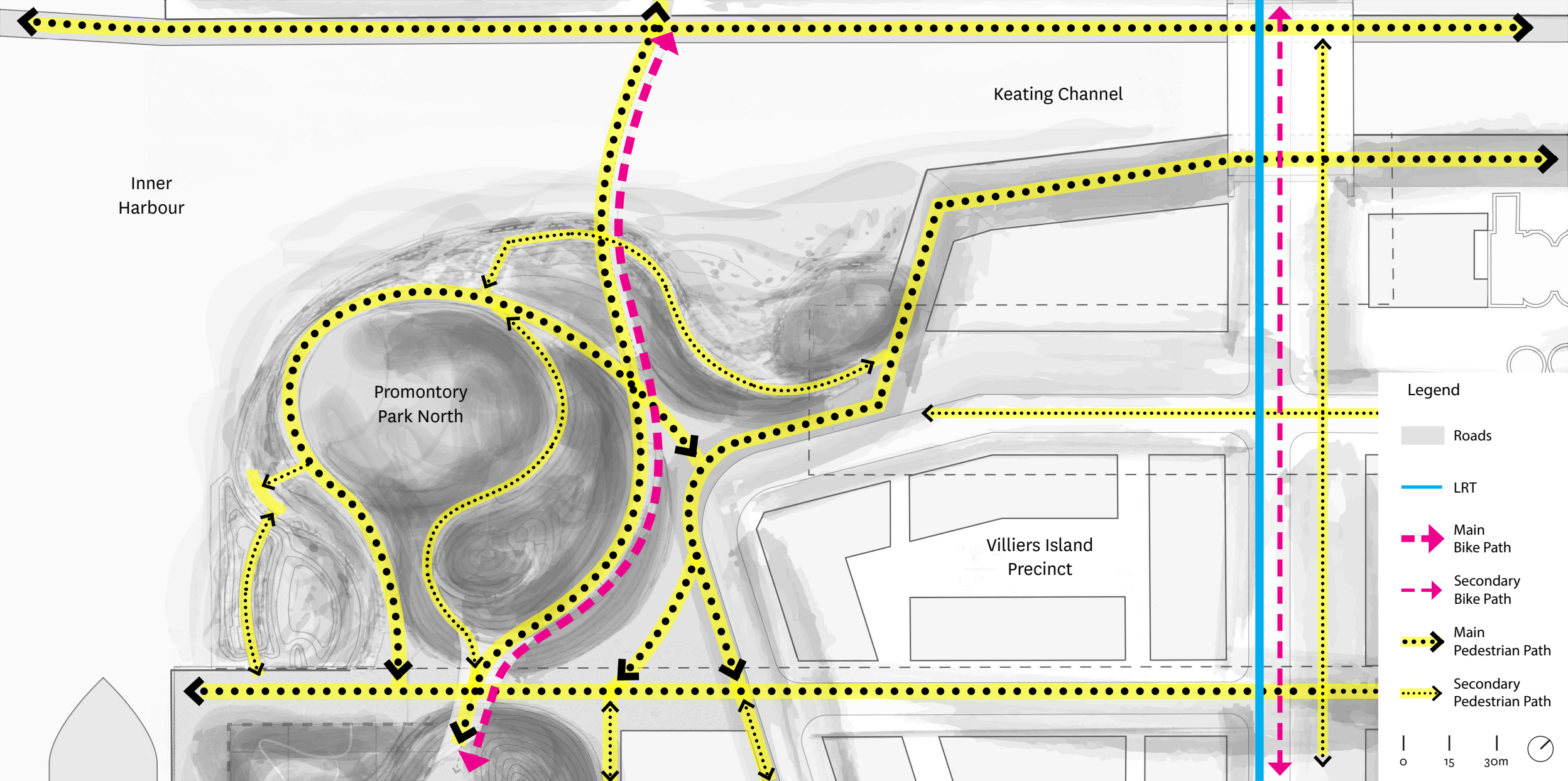




**West Habitat Shoals - Section**

















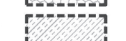








Promontory Park North - Connectivity Diagram DRP Meeting 04/19



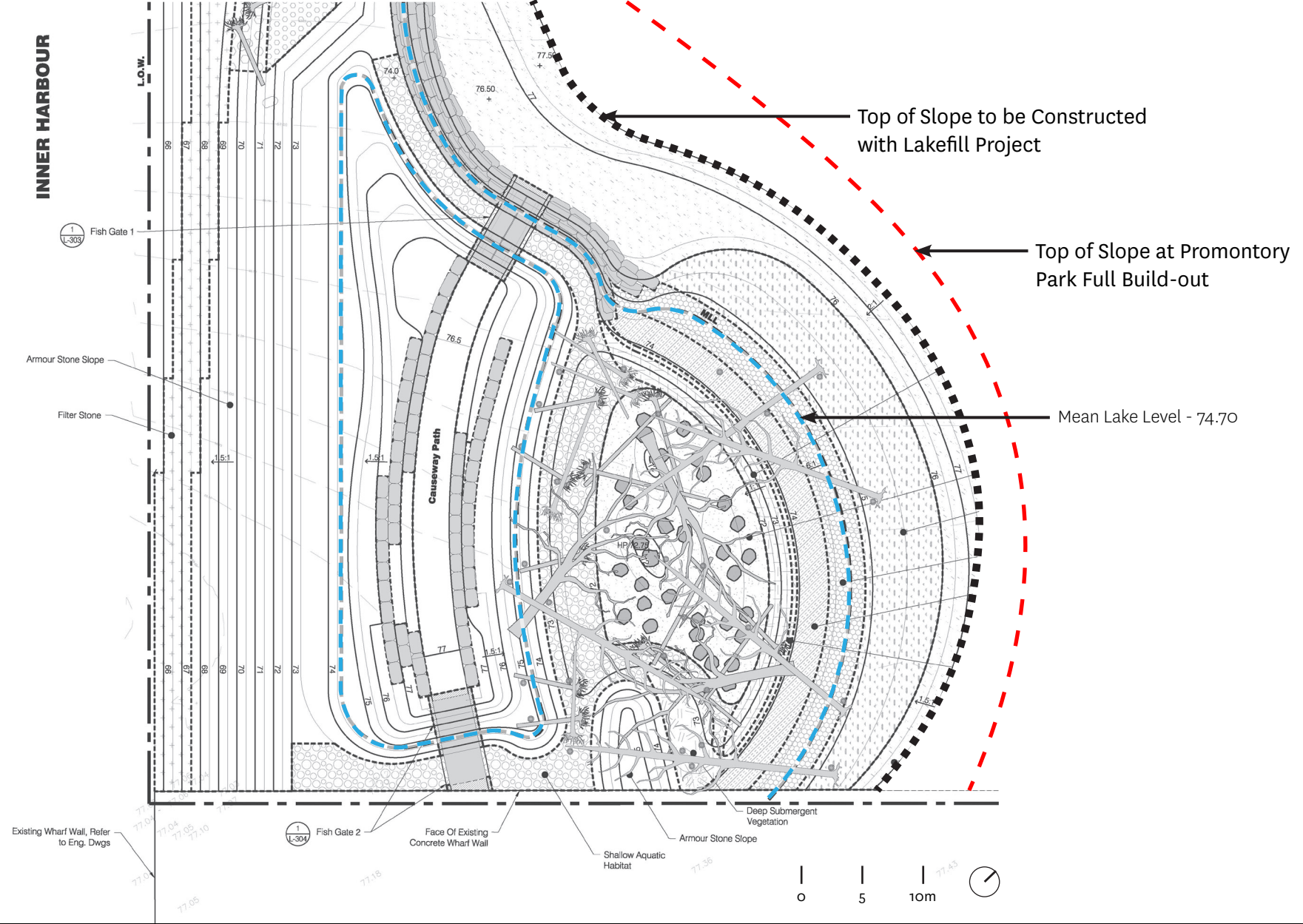
**Promontory Park North - Connectivity Diagram Proposed**



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-  Boulders

**INNER HARBOUR**



Top of Slope to be Constructed with Lakefill Project

Top of Slope at Promontory Park Full Build-out

Mean Lake Level - 74.70

**West Habitat Cove - Enlargement Plan**



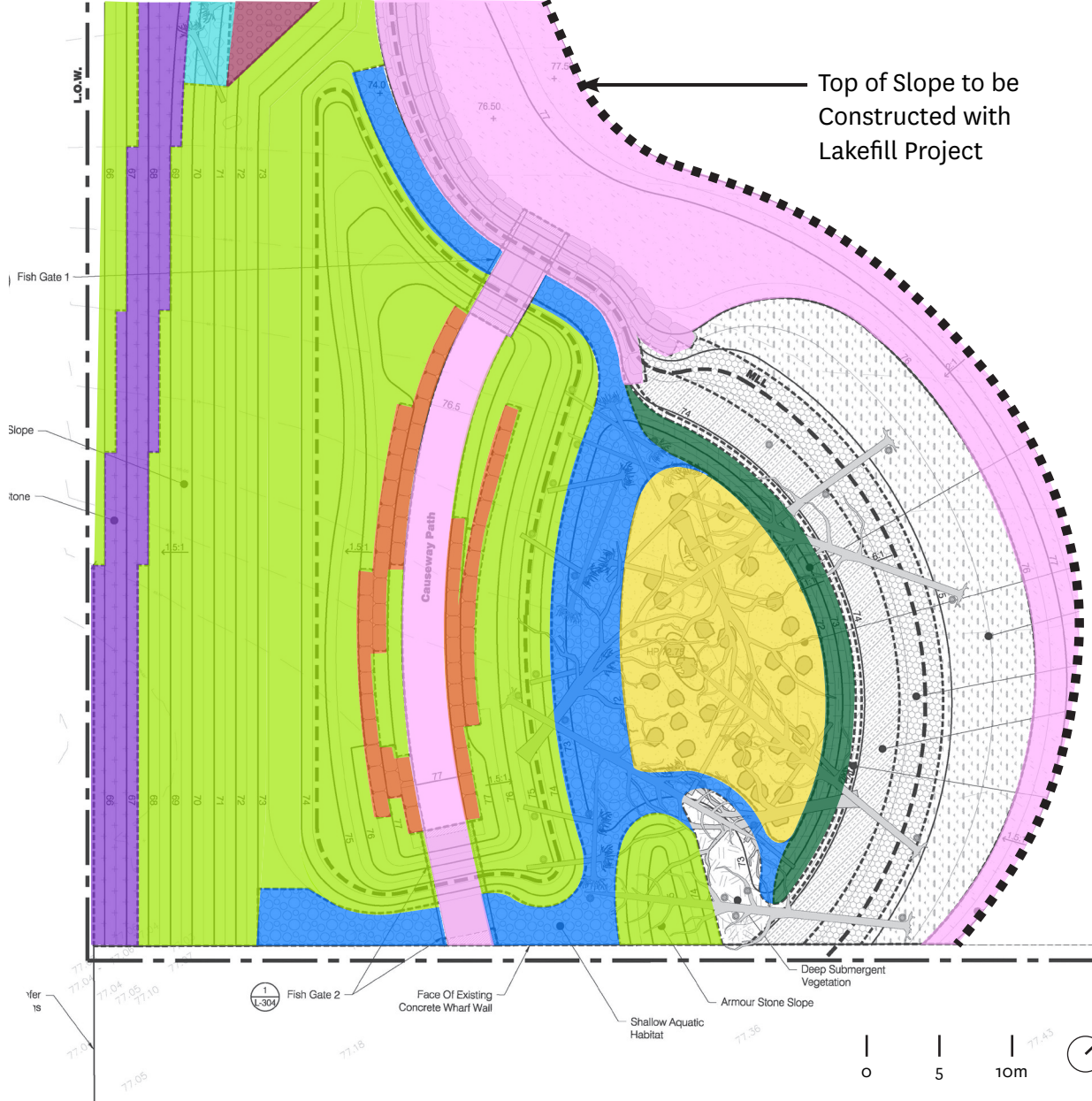
**Stone Blocks** (1-1.5m W x 1-4m L x 0.75 m H)



**Armour Stone** (450 mm ø)



**Wood + Boulder Habitat**

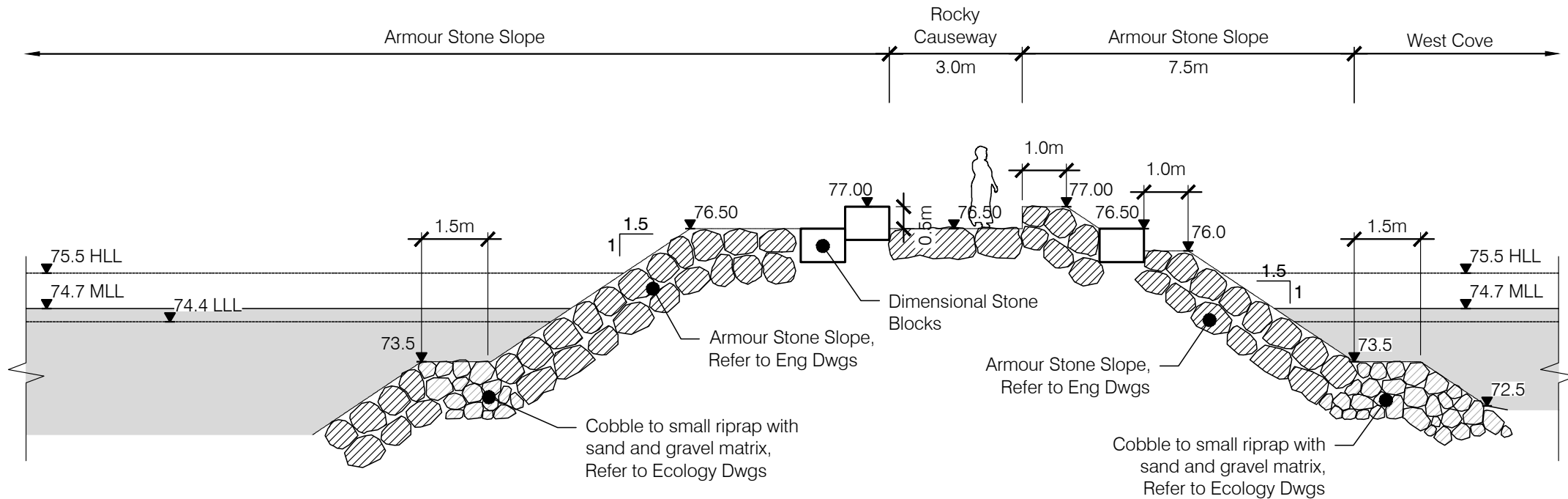
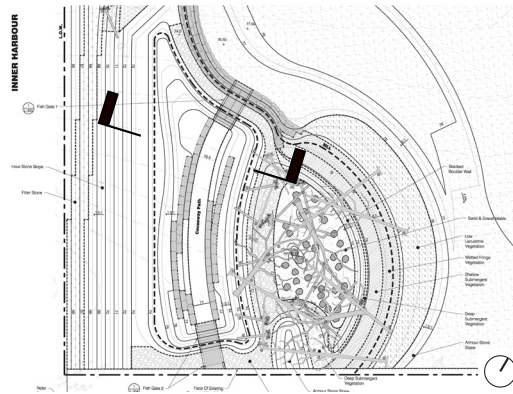


- Armour Stone** (1-1.3 m ø)
- Shallow Aquatic Habitat** (Cobble to Small Riprap)
- Habitat Stone** (25-200 mm ø)
- Habitat Stone** (200-300 mm ø)
- Filter Stone**
- Interim Condition**

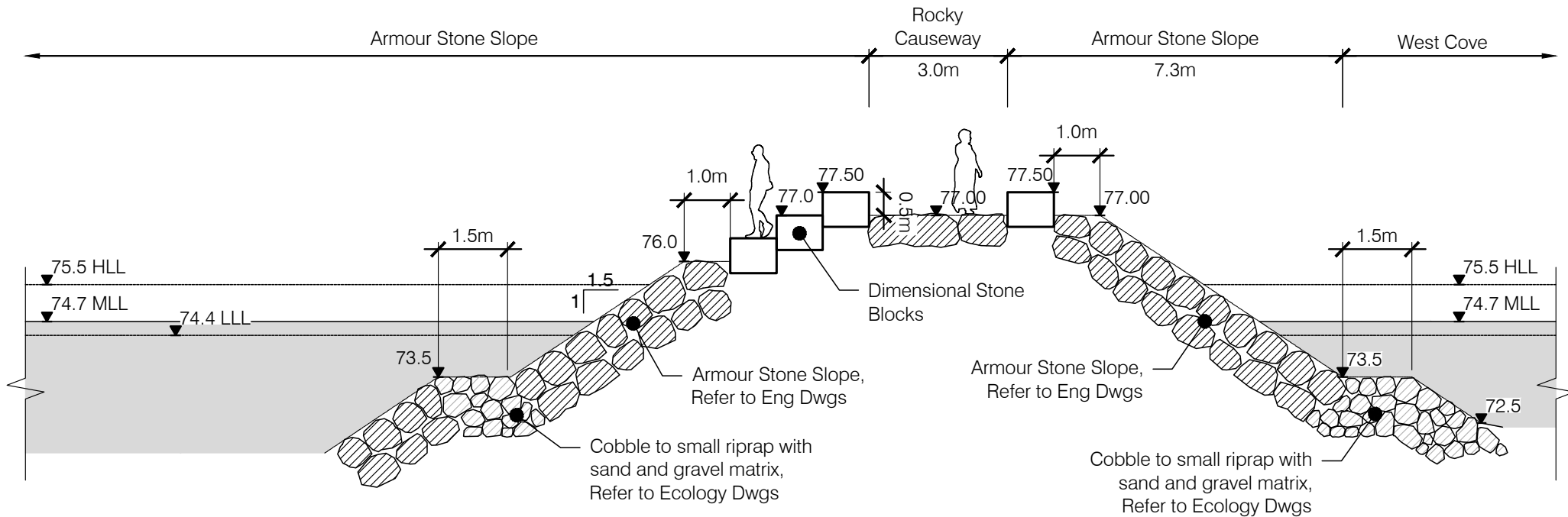
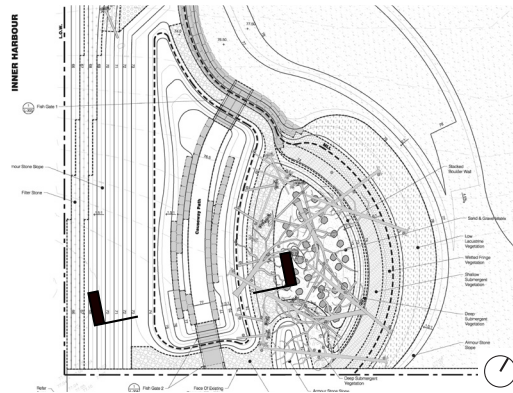
# West Habitat Cove - Materials Diagram





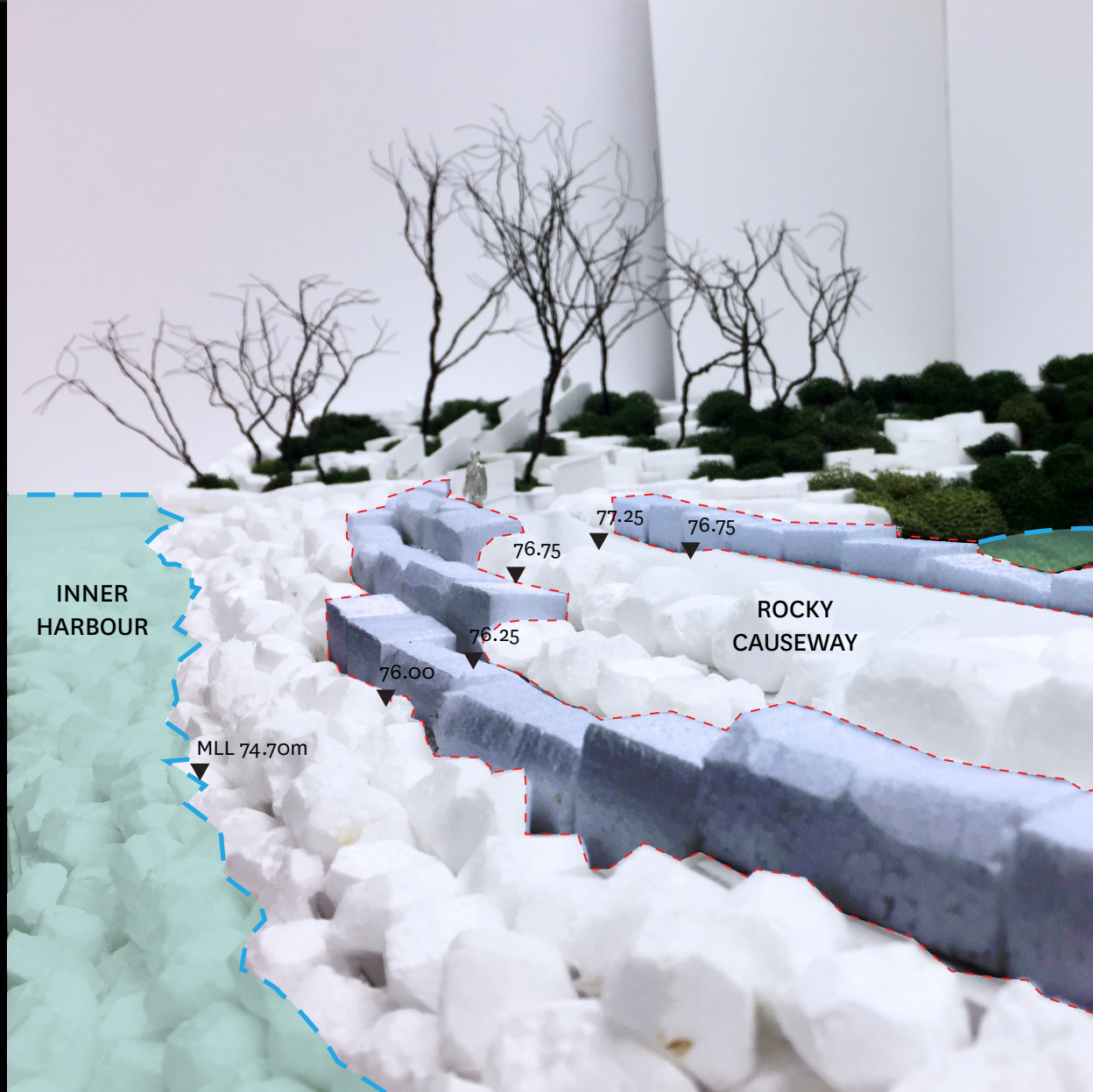
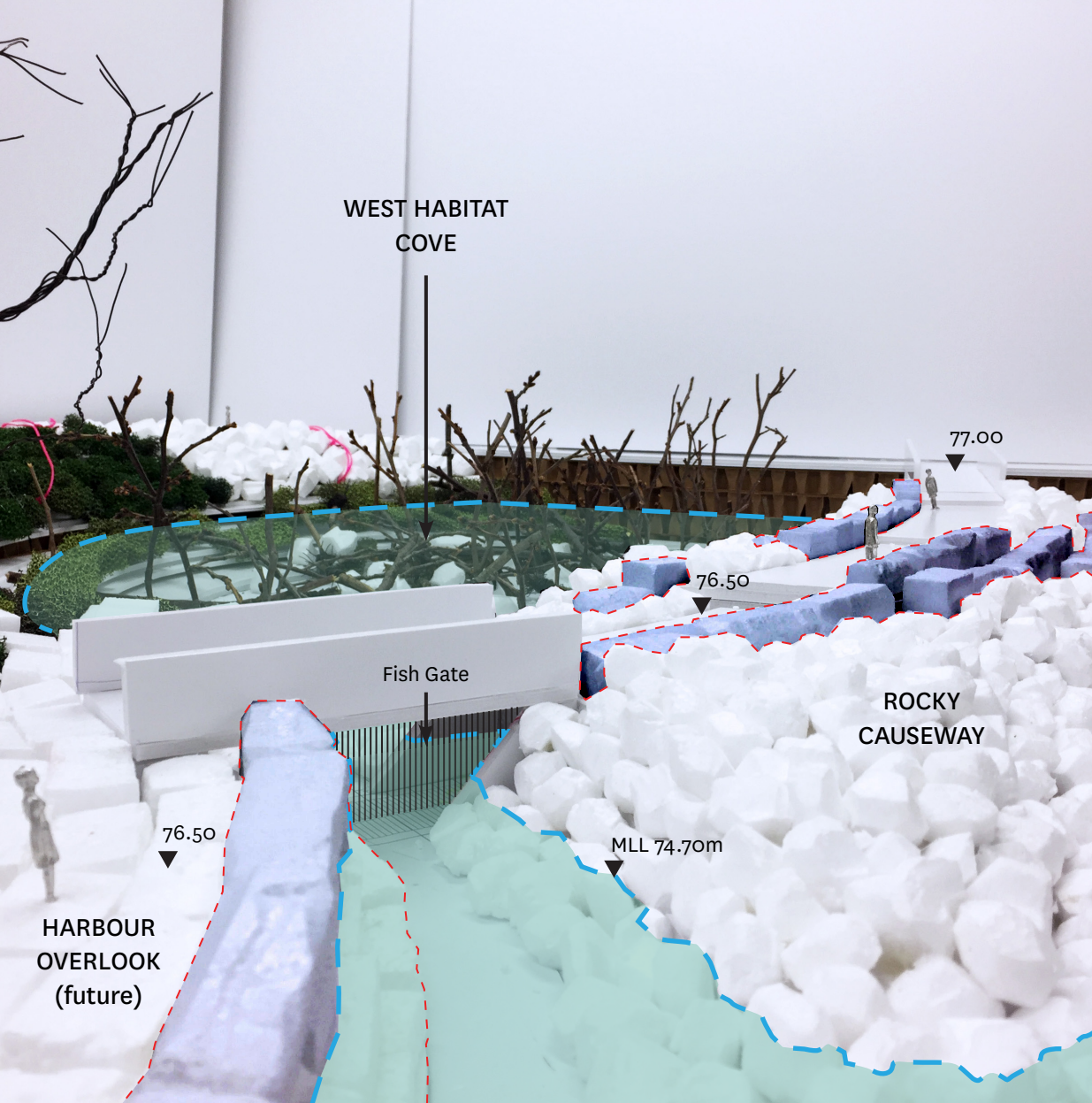


**West Habitat Cove - Rocky Causeway Detail Section 1**



**West Habitat Cove - Rocky Causeway Detail Section 2**





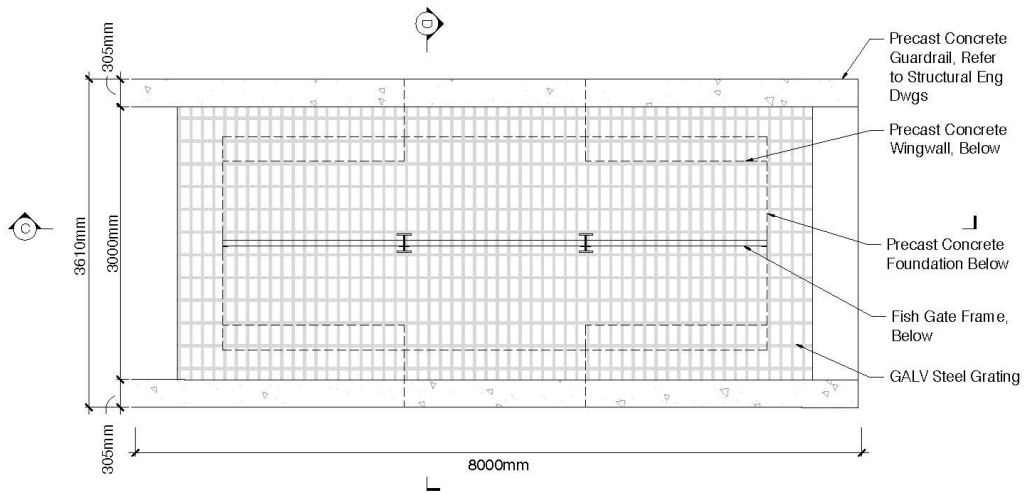
West Habitat Cove - Breakwater Study Model



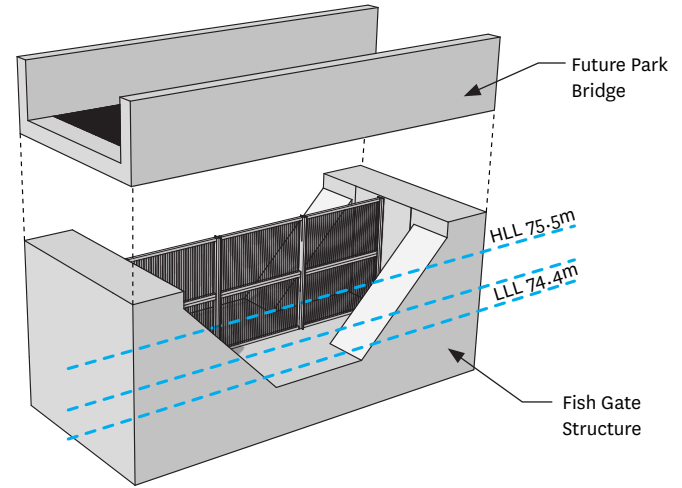


**West Habitat Cove - Breakwater Precedent**

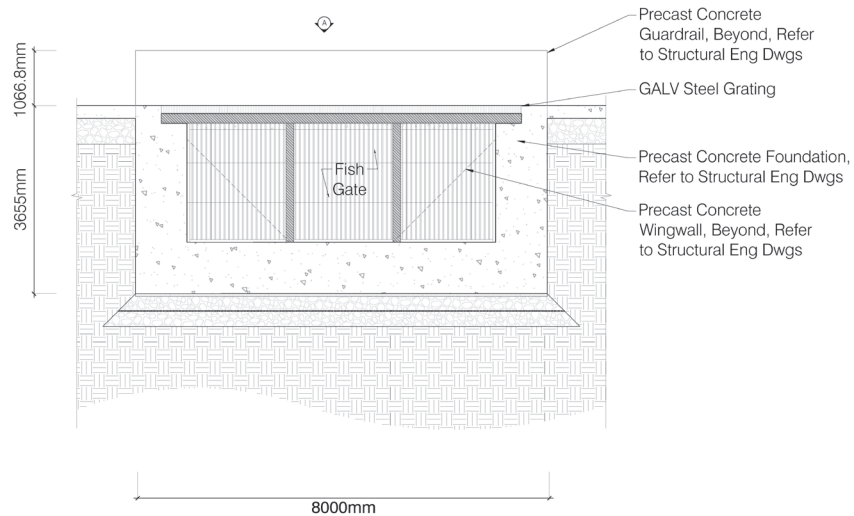




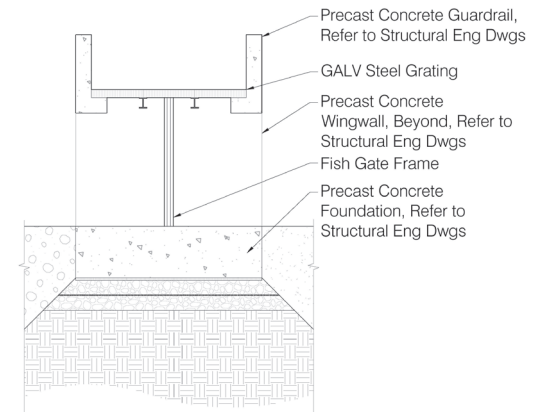
Plan



Axonometric

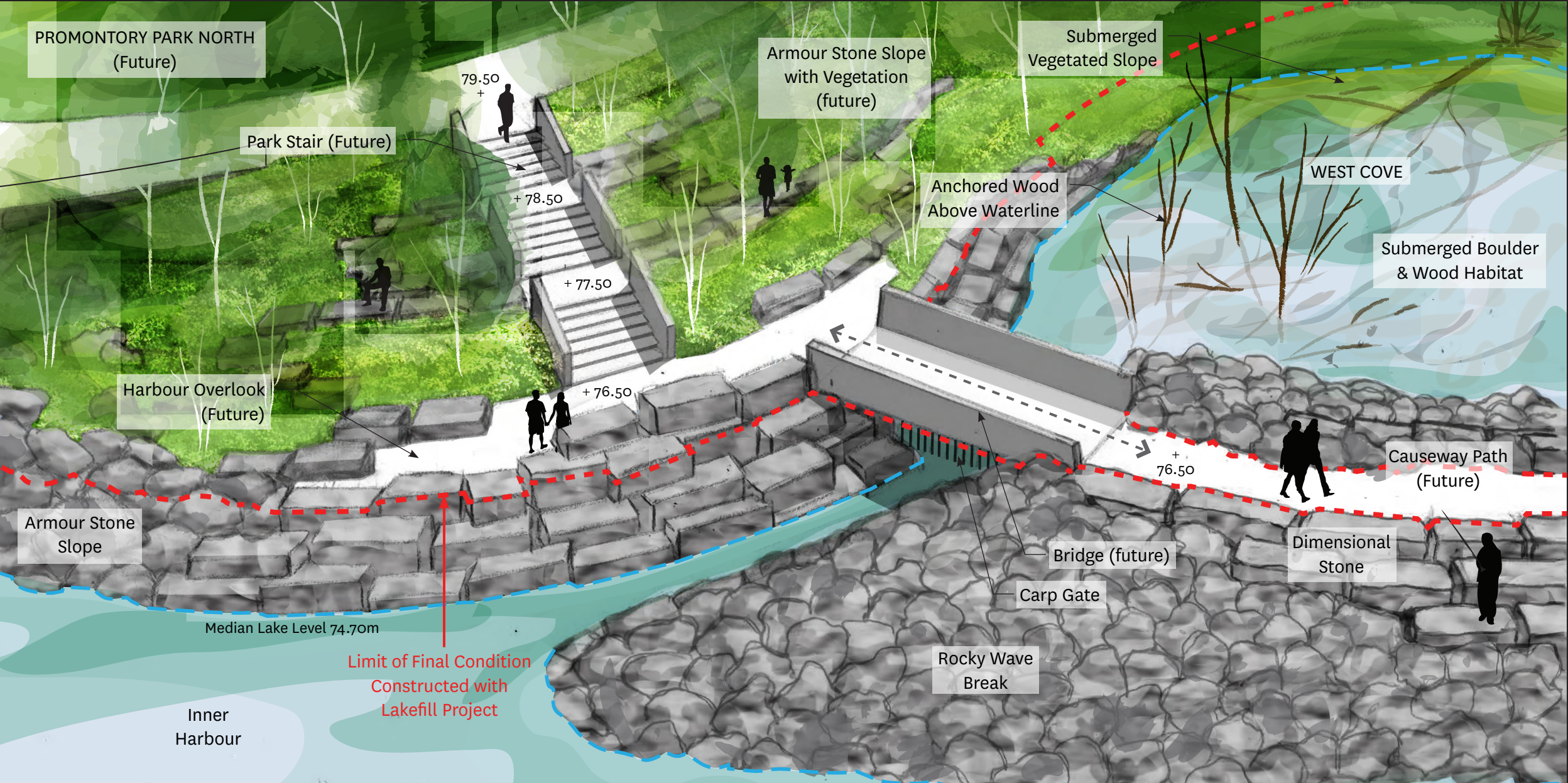


Section C



Section D















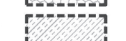








# West Habitat Cove - Carp Gate Details



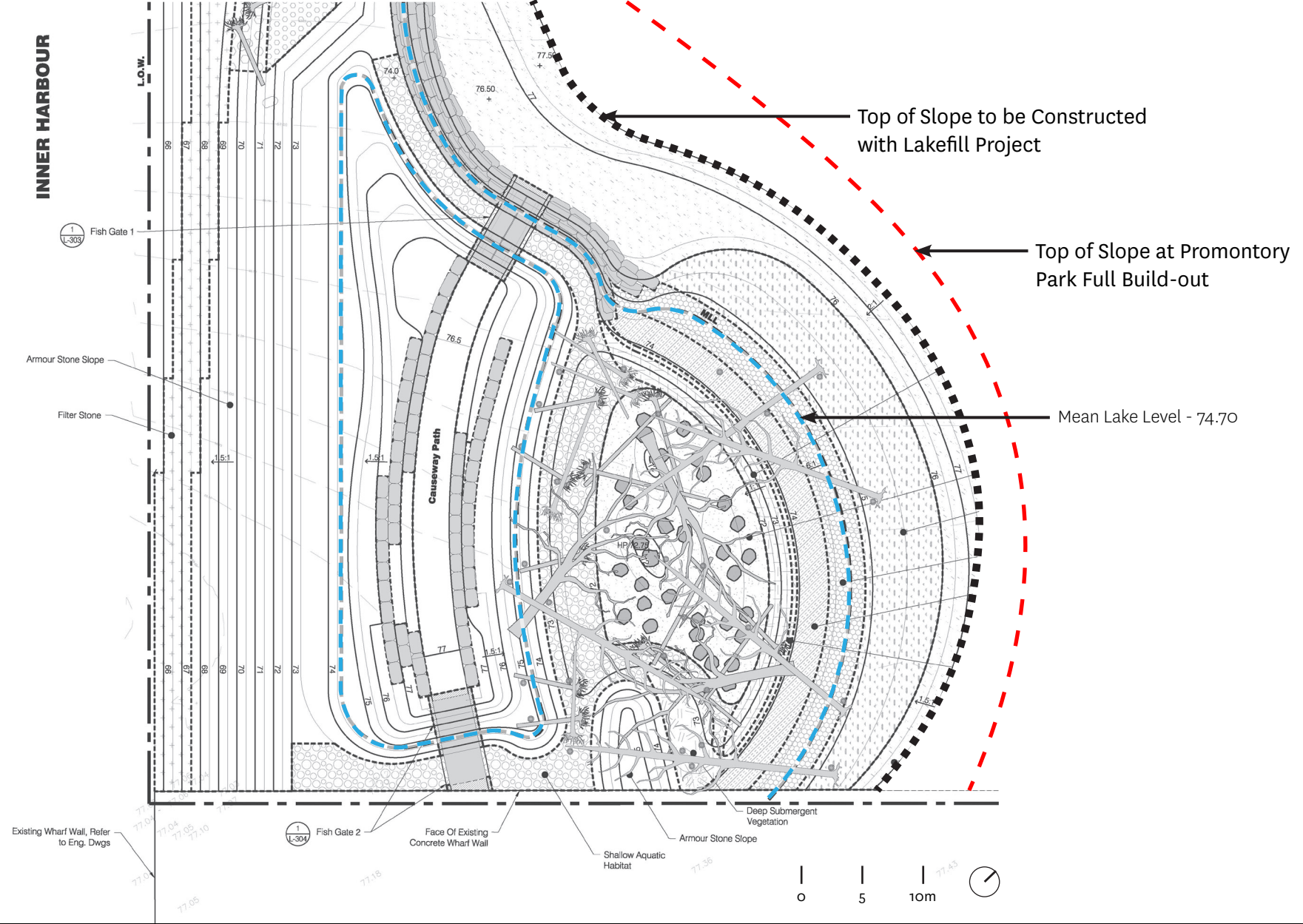
**West Habitat Cove - Harbour Overlook Axonometric Diagram**



**Layout & Materials Plan Legend**

-  Limit of Work
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-  Boulders

**INNER HARBOUR**



Top of Slope to be Constructed with Lakefill Project

Top of Slope at Promontory Park Full Build-out

Mean Lake Level - 74.70

**West Habitat Cove - Enlargement Plan**



### Deep Submergent (EL 72.5 - 73.9)

Botanical Name	Common Name	Form/Size
<i>Elodea canadensis</i>	Elodea	plug
<i>Potamogeton richardsonii</i>	Richardson's Pondweed	plug
<i>Vallisneria americana</i>	Wild Celery	plug



Richardson's Pondweed



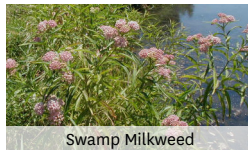
Elodea



Wild Celery

### Wetted Fringe (EL 74.4 - 74.9)

Botanical Name	Common Name	Form/Size
<i>Asclepias incarnata</i>	Swamp Milkweed	plug / seed
<i>Bidens cernua</i>	Nodding Beggartick	plug / seed
<i>Carex bebbii</i>	Bebb's Sedge	plug / seed
<i>Carex stipata</i>	Awlfruit Sedge	plug / seed
<i>Carex vulpinoidea</i>	Fox Sedge	plug / seed
<i>Glyceria grandis</i>	Tall Mannagrass	plug / seed
<i>Juncus effusus</i>	Soft Rush	plug / seed
<i>Leersia oryzoides</i>	Rice Cutgrass	plug / seed
<i>Poa palustris</i>	Fowl Bluegrass	plug / seed
<i>Sagittaria latifolia</i>	Broadleaf Arrowhead	plug / seed
<i>Schoenoplectus acutus</i>	Hardstem Bulrush	plug / seed
<i>Scirpus atrovirens</i>	Dark Green Bulrush	plug / seed
<i>Scirpus microcarpus</i>	Small-fruited Bulrush	plug / seed
<i>Zosterella dubia</i>	Grassleaf Mudplantain	plug / seed



Swamp Milkweed



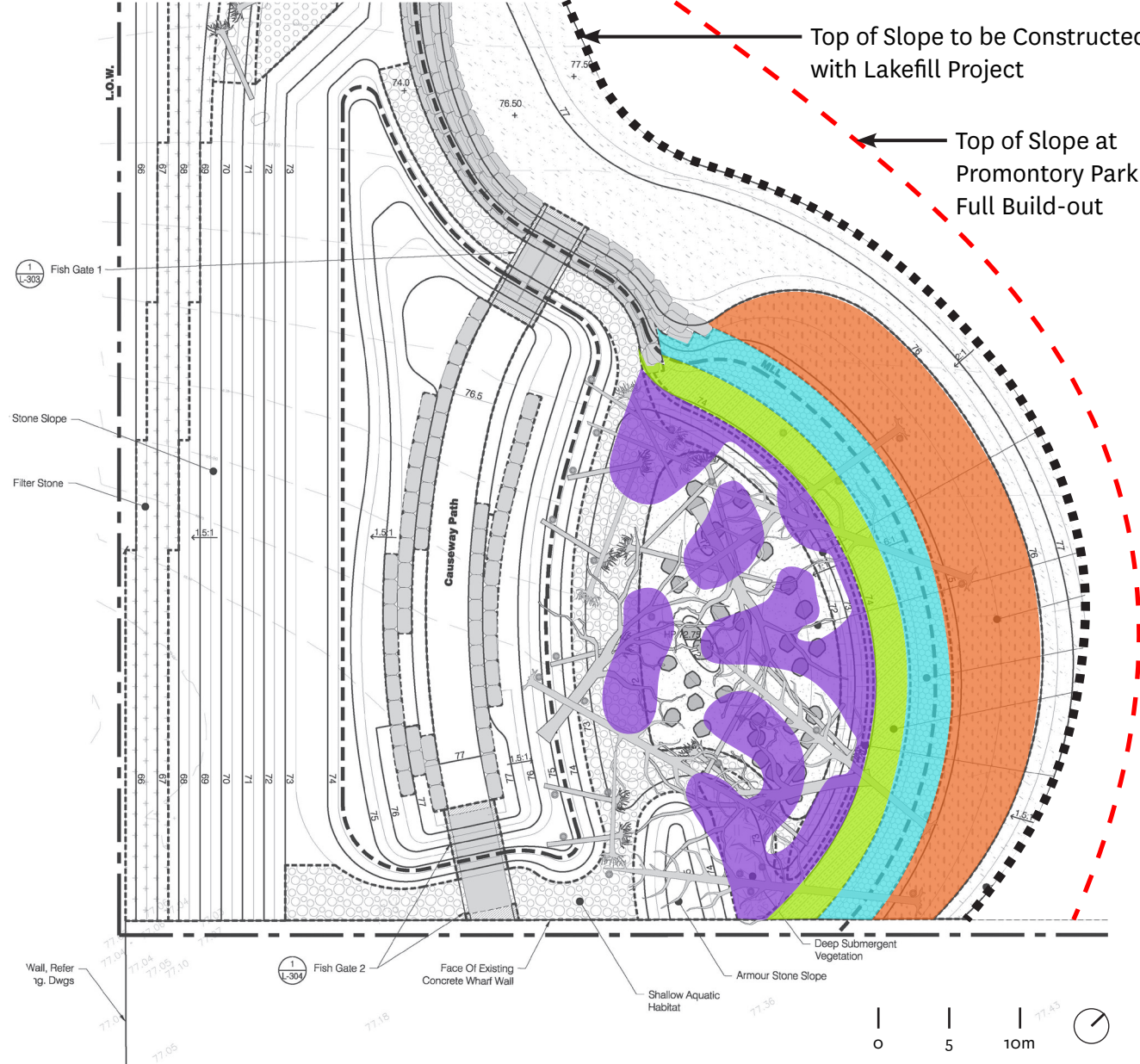
Grassleaf Mudplantain



Fox Sedge



Nodding Beggartick



Top of Slope to be Constructed with Lakefill Project

Top of Slope at Promontory Park Full Build-out

### Shallow Submergent (EL 73.9 - 74.4)

Botanical Name	Common Name	Form/Size
<i>Ceratophyllum demersum</i>	Coontail	plug
<i>Heteranthera dubia</i>	Grassleaf Mudplantain	plug
<i>Najas flexilis</i>	Nodding Waterlily	plug
<i>Nymphaea odorata</i>	White Water-lily	plug
<i>Potamogeton gramineus</i>	Variableleaf Pondweed	plug
<i>Sparganium emersum</i>	Bur-reed	plug



Coontail



White Water-lily



Variableleaf Pondweed



Bur-reed

### Low Lacustrine (EL 74.9 - 76)

Botanical Name	Common Name	Form/Size
<i>Asclepias incarnata</i>	Swamp Milkweed	plug / seed
<i>Asclepias syriaca</i>	Common Milkweed	plug / seed
<i>Aster puniceus</i>	Purple-stemmed Aster	plug / seed
<i>Bidens cernua</i>	Nodding Beggartick	plug / seed
<i>Carex bebbii</i>	Bebb's Sedge	plug / seed
<i>Carex stipata</i>	Awlfruit Sedge	plug / seed
<i>Carex vulpinoidea</i>	Fox Sedge	plug / seed
<i>Eupatorium maculatum</i>	Spotted Joe Pye Weed	plug / seed
<i>Glyceria grandis</i>	Tall Mannagrass	plug / seed
<i>Juncus effusus</i>	Soft Rush	plug / seed
<i>Leersia oryzoides</i>	Rice Cutgrass	plug / seed
<i>Poa palustris</i>	Fowl Bluegrass	plug / seed
<i>Scirpus atrovirens</i>	Dark Green Bulrush	plug / seed
<i>Scirpus microcarpus</i>	Small-fruited Bulrush	plug / seed
<i>Spartina pectinata</i>	Prairie Cordgrass	plug / seed



Purple-stemmed Aster



Soft Rush



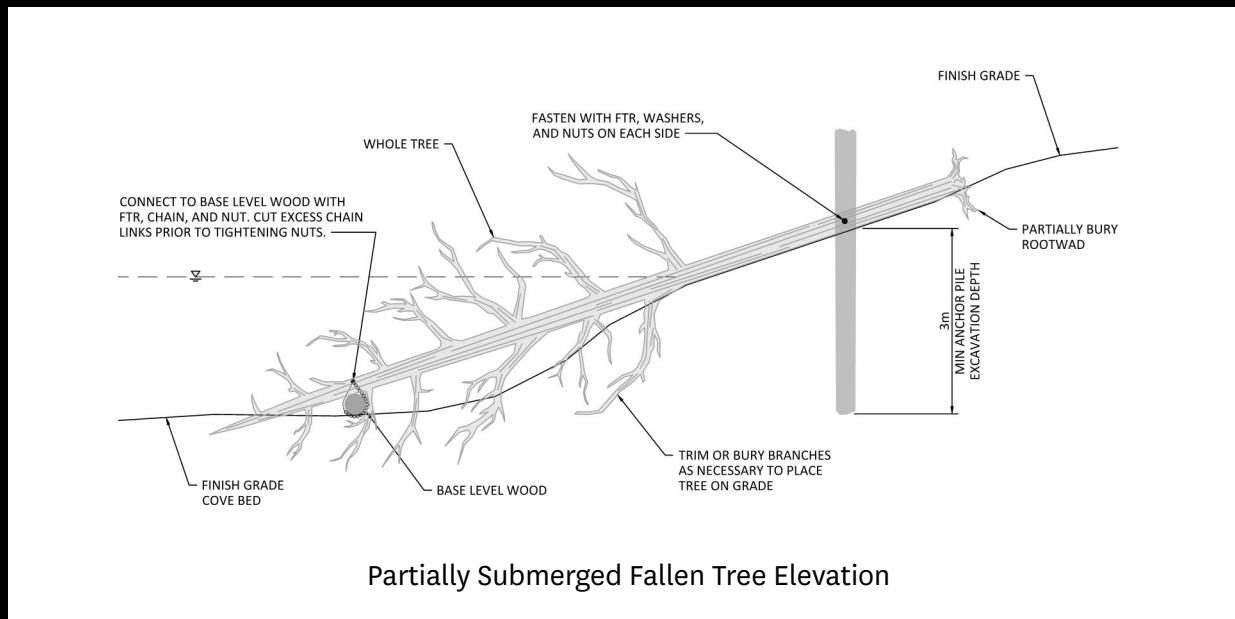
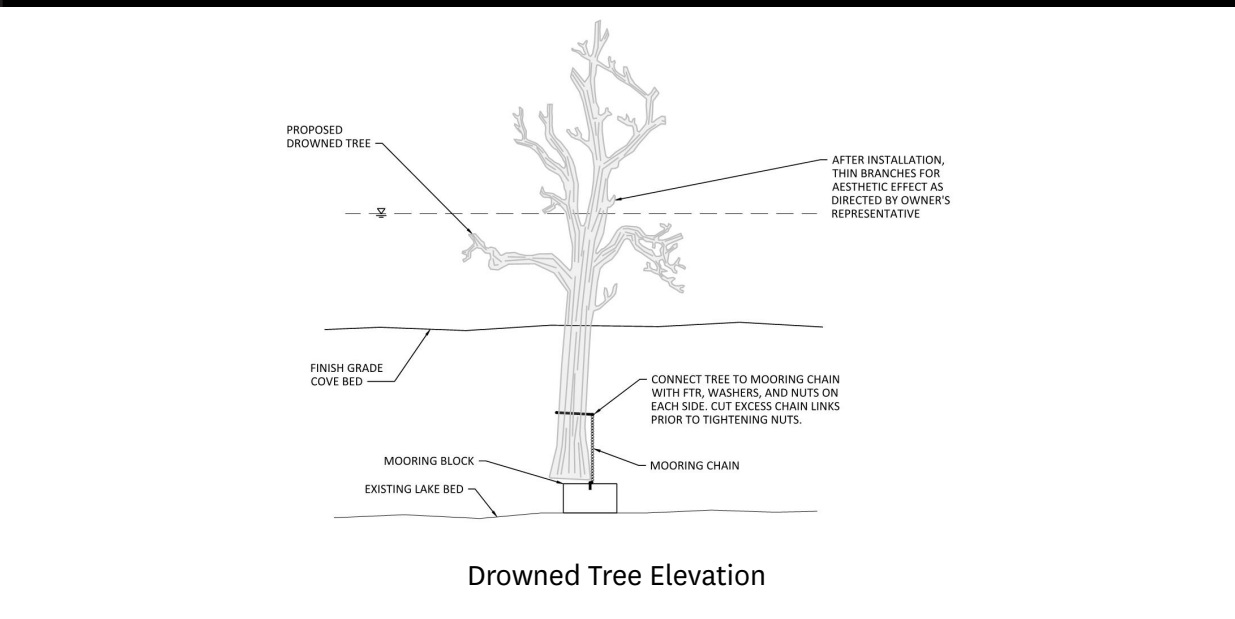
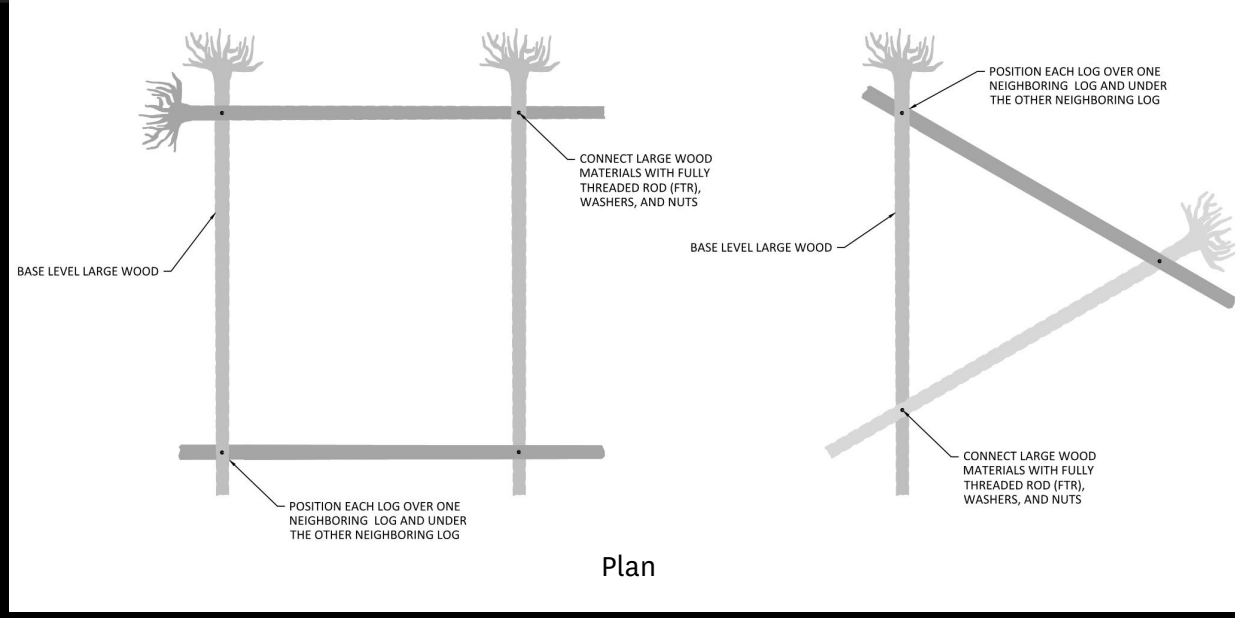
Awlfruit Sedge



Spotted Joe Pye Weed

# West Habitat Cove - Planting Diagram





# West Habitat Cove - Base Level Large Wood Details

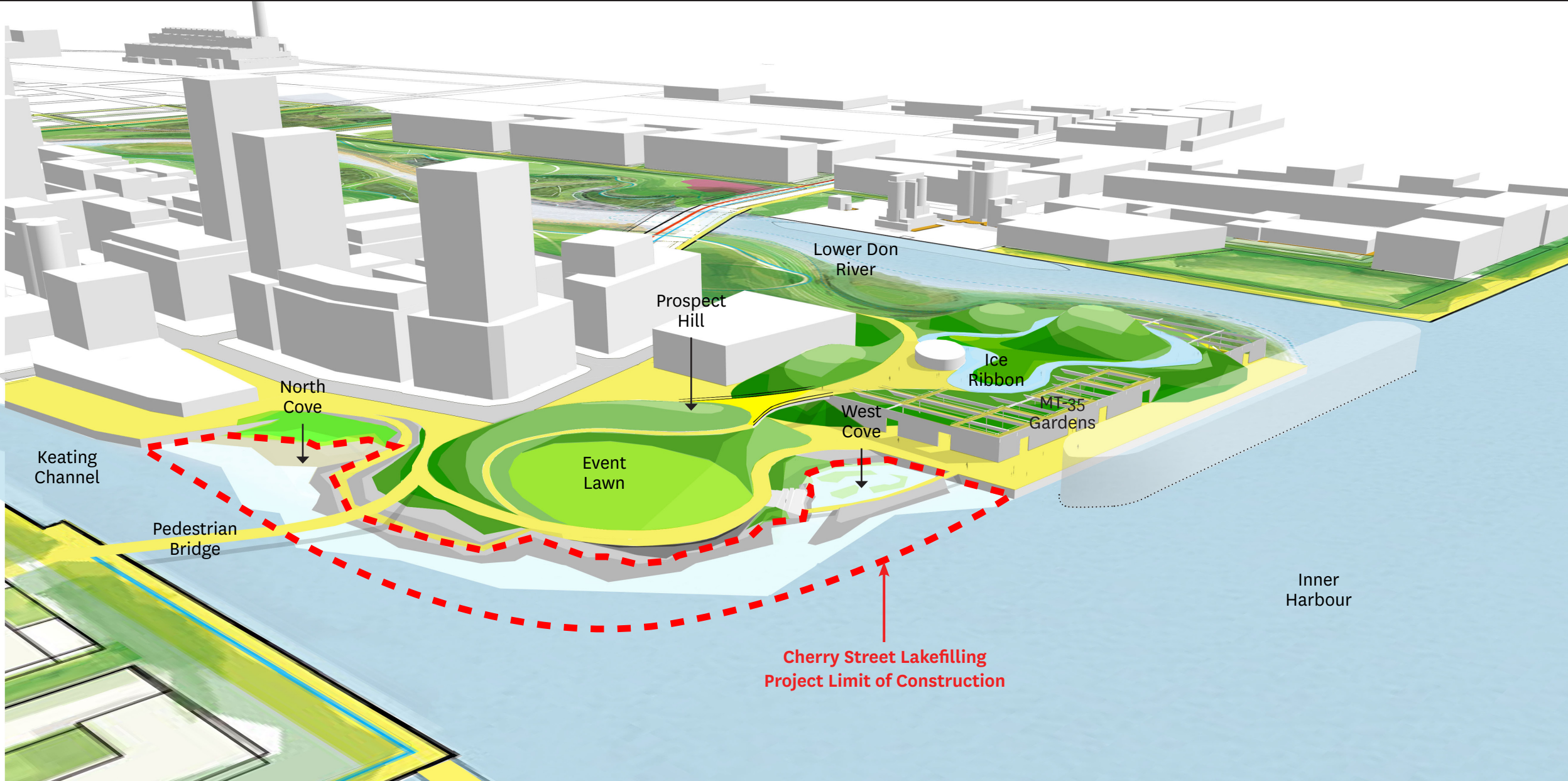




Buffalo River near Lake Erie

**West Habitat Cove - Wood Habitat Precedent**





Promontory Park North and South - Axonometric Diagram