Final Report

Berta Point West Bank Shoreline Improvements

Environmental Study Report

prepared by

Shoreplan Engineering Limited

April 2022

SHOREPLAN

Berta Point West Bank
Shoreline Improvements

Environmental Study Report

Prepared for

Town of Oakville

by

SHOREPLAN ENGINEERING LIMITED

File 20-3314

VERSION	DATE	STATUS	COMMENTS
01	2022/02/21	Draft	Issued to Client
02	2022/04/04	Final	
03	2022/04/18	Final with Executive Summary	

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EXECUTIVE SUMMARY

Berta Point is a public park immediately south of Lakeshore Road W, on the western shore of Bronte Creek within Bronte Inner Harbour. The shoreline along Berta Point is not formally protected and is only accessible via a staircase which leads to seasonal floating docks. High water levels experienced in 2017, 2019, and 2020 led to erosion of the Berta Point shoreline. The purpose of the project is to provide shoreline protection improvements to protect the shore and bank from further erosion, improve pedestrian access to the shoreline including increased accessibility improve park function, and an overall enhancement of the environmental conditions. The Berta Point west bank shoreline improvements project has been identified by the Town as Schedule "B" under the Class EA.

Existing Conditions

The land uses around the study area are parkland, low density residential, and harbour structures. Parkland surrounds the project area on all sides except for Bronte Creek to the east. Harbour and marina structures are located along the opposite shore. Berta Point has two distinct park areas. The upper park is adjacent to and east of West River Street and south of Lakeshore Road W. It has an informal gravel parking lot, walking trails, a park building, and a grassed area with mature trees. A road runs along the south side of the park to Berta Point's lower park. It has a parking lot and formal gardens surrounded with paved walkways and shade structures. Docks with electrical and water service line the shoreline.

The project area is located along the western shore of Bronte Creek and consists of 80 m of shoreline immediately south of the Lakeshore Road W Bridge. The shoreline has scattered concrete rubble and stone near the water line that provides little protection. Above the rubble is a 1 to 1.5m high steeply sloped bank of exposed soil and shale bedrock. An access ramp down the bank provides access to a seasonal floating dock that is installed during the recreational boating season.

This study included topographic and bathymetric surveys, a geotechnical investigation, a tree inventory, and assessments of the coastal and natural environments. The site is located close to Lake Ontario and water levels at the site are dominated by the lake. An updated water level analysis was completed using data measured at Burlington from 1971 to 2020. The 100-year instantaneous water level is 76.30m (GSC) which is higher than the previous analyses.

The fish habitat on all sides of Berta Point consists of organic silt substrates, hard vertical shorelines, no aquatic macrophytes, and virtually no structural habitat, i.e. cover, niche spaces, edge, shelter, etc. Riparian vegetation is absent. The water quality around Berta Point is generally poor, with degradation due to upstream stormwater discharges which impose suspended-sediment loadings.

The most noteworthy aspect of the fish community in Bronte Creek which flows past Berta Point is probably the migratory species that pass the point on route to upstream spawning habitats. These fish species include rainbow trout, brown trout, chinook salmon, and white suckers. Another important sport fish known to inhabit nearby waters is smallmouth bass. Carp can also be found the waters near to Berta Point along with various minnows/baitfish such as smelt, alewife, etc. The silver shiner, a fish species classified as "threatened" is known to reside in

Bronte Creek. The aquatic habitat in the vicinity of Berta Point, however, does not conform to the habitat characteristics known to be preferred by this species at risk.

Alternative Solutions

The initial step of an environmental assessment is to develop a set of criteria to evaluate the alternate solutions and determine impacts of each solution. Alternative solutions are developed considering the project objectives and site conditions. Cost estimates are based on the construction costs of past projects on Lake Ontario in the Greater Toronto Area. Costs may not accurately reflect the market when tendered because of Covid-19 and supply chain issues that have occurred over the past two years.

Five alternative solutions were considered to address the problem statement. The solutions considered included do nothing, a concrete block retaining wall with walkway, rock protection with a pile supported walkway, steel sheet pile wall with walkway, and a steel sheet pile wall with cantilevered walkway. Three broad evaluation categories were developed to compare each solution.

- Environmental Impacts
    - alternatives that do not reduce channel width or restrict creek flows are preferred
    - alternatives that enhance terrestrial and fish habitat are preferred
- Constructability
    - alternatives with well understood/traditional construction methods are preferred
    - alternatives that are compatible with future dredging operations are preferred
    - alternatives that protect the shoreline for a long period of time with minimal maintenance are preferred
- Other
    - alternatives that improve access along the shoreline are preferred (objective of the study)
    - alternatives that increase slope stability and reduce erosion are preferred
    - alternatives that improve or maintain navigation are preferred

Each of the options were evaluated. Table 4.11 shows a summary of the evaluation of each option. If an option had a positive impact on a criterion, that criterion was coloured green and if it had a negative impact on the criteria, it was coloured red. Where an option had no impact on the criteria it was coloured yellow.

Overall, Option 2 Rock Protection with Pile Supported Walkway, was found to be the preferred Alternative Solution based on the evaluation. Figure 1 shows the layout of the preferred option. Implementation of the preferred alternative solution will need to consider further design changes and modifications to optimize the project and gain acceptance by the reviewing agencies, park users, and residents of Oakville.

Table 1 Summary of Alternative Solutions

Criteria	Do Nothing	Option 1 Concrete Block Wall	**Option 2 (Preferred)** **Rock Protection with Pile Supported Walkway**	Option 3 Steel Sheet Pile with Walkway	Option 4 Steel Sheet Pile with Cantilevered Walkway
Environmental Impacts					
Aquatic Habitat	No Change	Improves fish habitat with rock berm.	**Improves fish habitat with rock berm.**	Deeper fish habitat area created with creek bottom excavation. No additional cracks voids, or niche spaces.	Deeper fish habitat created with creek bottom excavation. No additional cracks voids, or niche spaces.
Terrestrial Habitat	No Change	Requires bank excavation and vegetation removal. Fill behind wall.	**Requires removal of vegetation for construction of rock berm.**	Requires vegetation removal. Fill behind wall.	Requires vegetation removal. Fill behind wall.
Constructability					
Common Structure Type	Not Applicable	Yes	**Yes**	Yes	Yes
Sloping Bedrock	Not Change	Challenging to construct on rock berm	**Minimal impact single piles**	Major impact continuous wall	Major impact continuous wall
Construction from Shore or Water	Not Applicable	Both	**Both**	Water	Water

Criteria	Do Nothing	Option 1 Concrete Block Wall	**Option 2 (Preferred)** **Rock Protection with Pile Supported Walkway**	Option 3 Steel Sheet Pile with Walkway	Option 4 Steel Sheet Pile with Cantilevered Walkway
Other					
Dredging	No Change	Limited by rock berm	**Limited by rock berm.**	Dredge adjacent to wall	Dredge adjacent to wall
Maintains or Widens Creek for Navigation	Yes	Yes	**Yes**	Widened	Widened
Estimated Lifespan	No design life	> 35 years	**> 35 years rock protection** **> 50 years walkway**	> 50 years	> 50 years
Docking	Floating dock parallel to shore	Floating dock parallel to shore.	**Floating dock parallel to shore.**	Floating dock, boats can berth closer to wall.	Floating dock, boats can berth closer to wall.
Access to Shoreline	No Change	Continuous access along shore.	**Continuous access along shore.**	Continuous access along shore.	Continuous access along shore.
Improved Slope Stability/Erosion Reduction	No Change	Yes	**Yes**	Yes	Yes
Preliminary Cost					
	None	$420,000	**$450,000**	$700,000	$750,000

Mitigation measures and best management practices will need to be employed to ensure that the negative impacts of the proposed shore protection project are minimized. These mitigation measures are as follows:

- Landscape plans for the park should consider native plant species.
- Timing construction to avoid conflicts with fish-spawning.
- Implementing erosion and sediment control to reduce migration into the creek.
- Erosion control measures to be monitored regularly and maintained
- Installing and maintaining tree protection around trees not being removed.
- Operating and storing all material and equipment in a way that prevents any deleterious substance from entering the creek.
- Stabilizing and re-vegetating all exposed soil areas upon completion of construction activities.
- Managing all excess materials generated by the project in an environmentally sound manner

Marine construction is recommended to minimize disruption of the existing bank. This would require staging of the project in the lower Berta Point parking lot which may disturb residents who use this parking area. Staging the work in the fall will minimize these impacts.

Each of the options considers a floating dock to maintain docking for the Bronte Harbour Yacht Club (BHYC) members that currently use this location. They recommended providing finger docks like those provided at the existing concrete block wall at Berta Point which increases the navigation channel width used by the club. All options would include the removal of the existing steel staircase that is currently used to access the shoreline. An open deck (steel grating or Thruflow decking) would be beneficial to reduce impacts of creek flooding and future maintenance costs.

Shoreline protection projects require review/approvals by Fisheries Oceans Canada (DFO), Transport Canada (TC), Ministry of Northern Development Mining Natural Resources and Forestry (MNDMNRF), Ministry of Environment Conservation Parks (MECP) and local agencies such as Conservation Halton (CH) under their acts and/or regulations. Project specific conditions may be part of each agency's approval. These conditions must be implemented during construction as part of the approval or permit

DFO will review the project for impacts to fish and fish habitat under the Fisheries Act and under the Federal Species at Risk Act because of the species of concern (Silver Shiner). TC has developed a list of designated works. Designated works are works that may proceed without Notice under the Navigation Protection Act if it complies with the Minor Works and Waters Order. This project would be considered a minor work and will not require review but will be registered with TC. We understand the creek bottom in Bronte Harbour is owned by the Town and a MNDMNRF Work Permit will not be required. A request for in-water work timing window will be made to MNDMNRF. The project is in an area regulated by CH. Ontario Regulation 162/06 allows CH to grant permission for development. A permit will be required for this project.

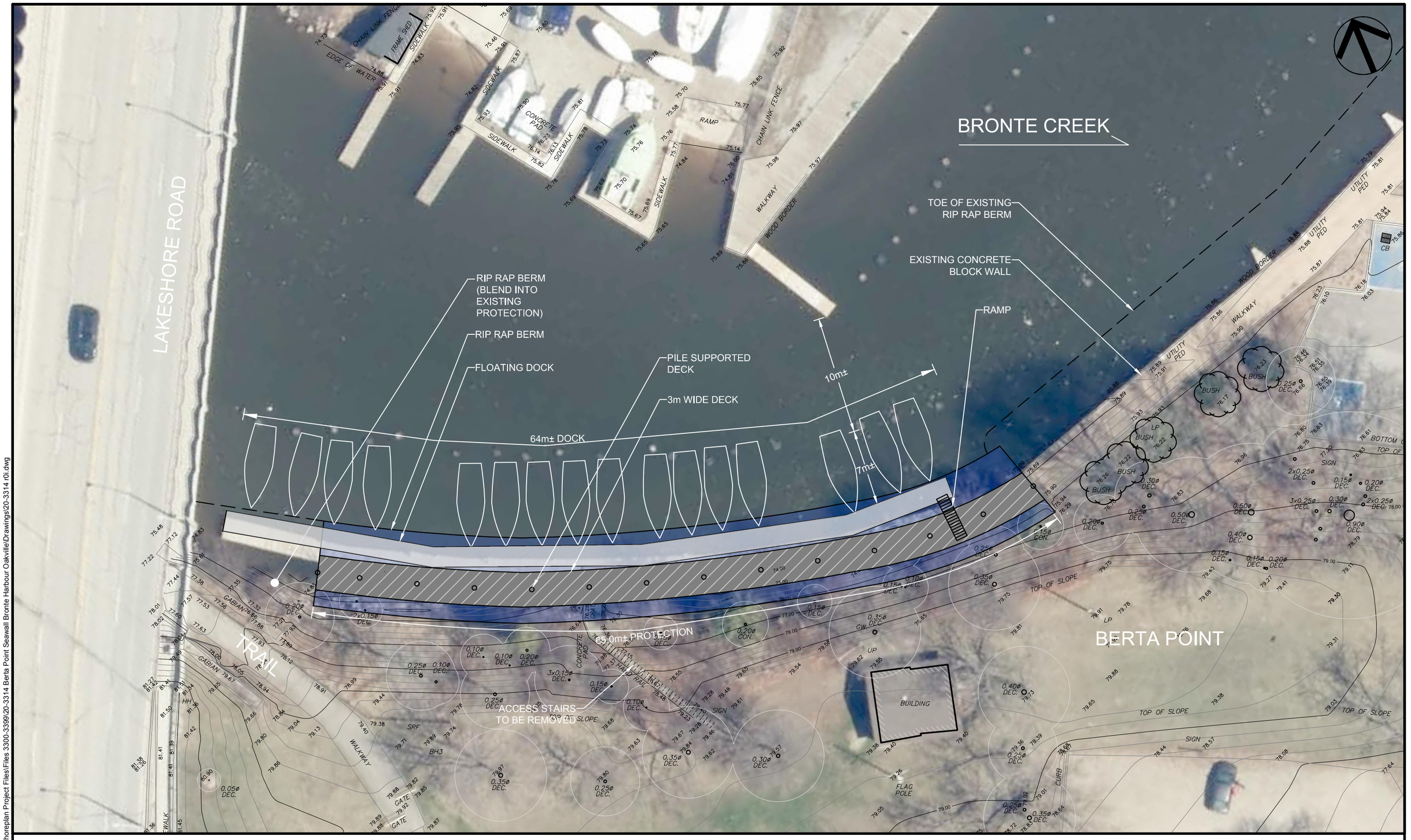

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Figure 1
Berta Point West Bank Shoreline Improvements
Preferred Option - Rock Protection With Pile Supported Walkway Site Plan

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1.0 Introduction

Berta Point is a public park immediately south of Lakeshore Road W, on the western shore of Bronte Creek within Bronte Inner Harbour. The shoreline at the north end of the park is either unprotected or partially protected with scattered rubble. In this area, the bank is actively eroding. Recreational boating amenities are provided along this shoreline. Access to the docks below is provided by stairs on the bank and the shoreline is disconnected from the other shorelines in the park. The Town of Oakville (Town) wishes to construct additional shore works that will stabilize the bank and improve access to amenities and recreational boating facilities along the shorelines of Berta Point.

1.1 Study Area

The study area is Bronte Inner Harbour located at municipal address 2508 Lakeshore Road West, and is bounded by Lakeshore Road W, West River Street, Bronte Road, and Lake Ontario. Berta Point is a park within Bronte Inner Harbour which is near the northwest corner of the study area. Figure 1.1 shows the Study Area.

1.2 Previous Studies

The Town of Oakville has completed condition assessments of their harbour shorelines as part of the Oakville Harbours Master Plan (The Planning Partnership, 2016) and more recently in the Harbours Flood and Risk Assessment Study (Shoreplan, 2021). The shoreline was identified as reach B21 within Bronte Inner Harbour. Both reports identified Berta Point's shoreline immediately south of Lakeshore Road W as actively eroding requiring protection.

> *"The shoreline north of the concrete block wall extending to the Lakeshore Road Bridge is partially protected with scattered concrete rubble and stone (reach B21). An access ramp supported on vertical steel piles is located midway along the reach. The ramp provides access to floating docks that are parallel to the shore. The bank along this shoreline is eroding and protection is recommended to stabilize the eroding bank." (p.52 Shoreplan, 2021)*

Both these and other reports such as the Sediment Management Study Oakville and Bronte Harbours (GHD, 2014) were reviewed as background information for this project.

1.3 Class Environmental Assessment

The Class Environmental Assessment (EA) process provides a decision-making framework that enables the requirements of the Ontario Environmental Assessment Act to be met. The undertakings subject to a Class EA involve municipal infrastructure projects that share the following similarities:

- They generally address similar types of problems or opportunities.
- A common set of alternatives and alternative methods apply.
- They follow the same EA planning process with similar phases.
- The types of impacts and approaches to environmental protection and mitigation are recurrent.

Provided that the Class EA process is followed, and no Part II Order is received, the proponent does not have to apply for additional approvals under the EA Act, since formal approval is gained through the Class EA process.

The Municipal Class EA applies to municipal projects including roads, water and wastewater projects, etc. They are classified in terms of schedules. Schedule "A" projects are of limited scale and have minimal impacts. These are considered pre-approved projects under Class EA. Schedule “A” projects generally include normal or emergency operational and maintenance activities. Schedule “A+” projects are pre-approved projects, however; the public is to be advised prior to project implementation. Schedule "B" are projects that may have some adverse environmental impacts and require a screening process. If, after a public consultation process, there are no outstanding concerns, the project may proceed to implementation. Schedule “B” projects generally include improvements and minor expansion to existing facilities. Schedule "C" projects may have significant environmental effects and must proceed with full planning and documentation procedures and public consultation processes.

The Berta Point west bank shoreline improvements project has been identified by the Town as Schedule "B" under the Class EA. The possible range of activities in this undertaking is described by item 15 of the Schedule "B", Activities Subject to the Screening Process (MEA, 2015, Appendix 1 page 1-17).

There are five phases to a Class EA.

- Phase 1, identification of the problem (deficiency), identified by the proponent and their request for proposal for the completion of the EA.
- Phase 2 is the identification of alternative solutions to address the problem taking into consideration the existing the environment as well as public and review agency input to establish the preferred alternative solution.
- Phase 3 is the examination of alternative methods of implementing the preferred solution based upon the existing environment, public and review agency input, anticipated environmental effects, and methods of minimizing negative effects and maximizing positive effects.
- Phase 4 is the completion of an Environmental Study Report (ESR).
- Phase 5 includes the completion of contract drawings and documents, construction, and monitoring for adherence to environmental provisions and commitments. Phase 5 will be completed after the public review of the ESR.

1.4 Proponent and Study Team

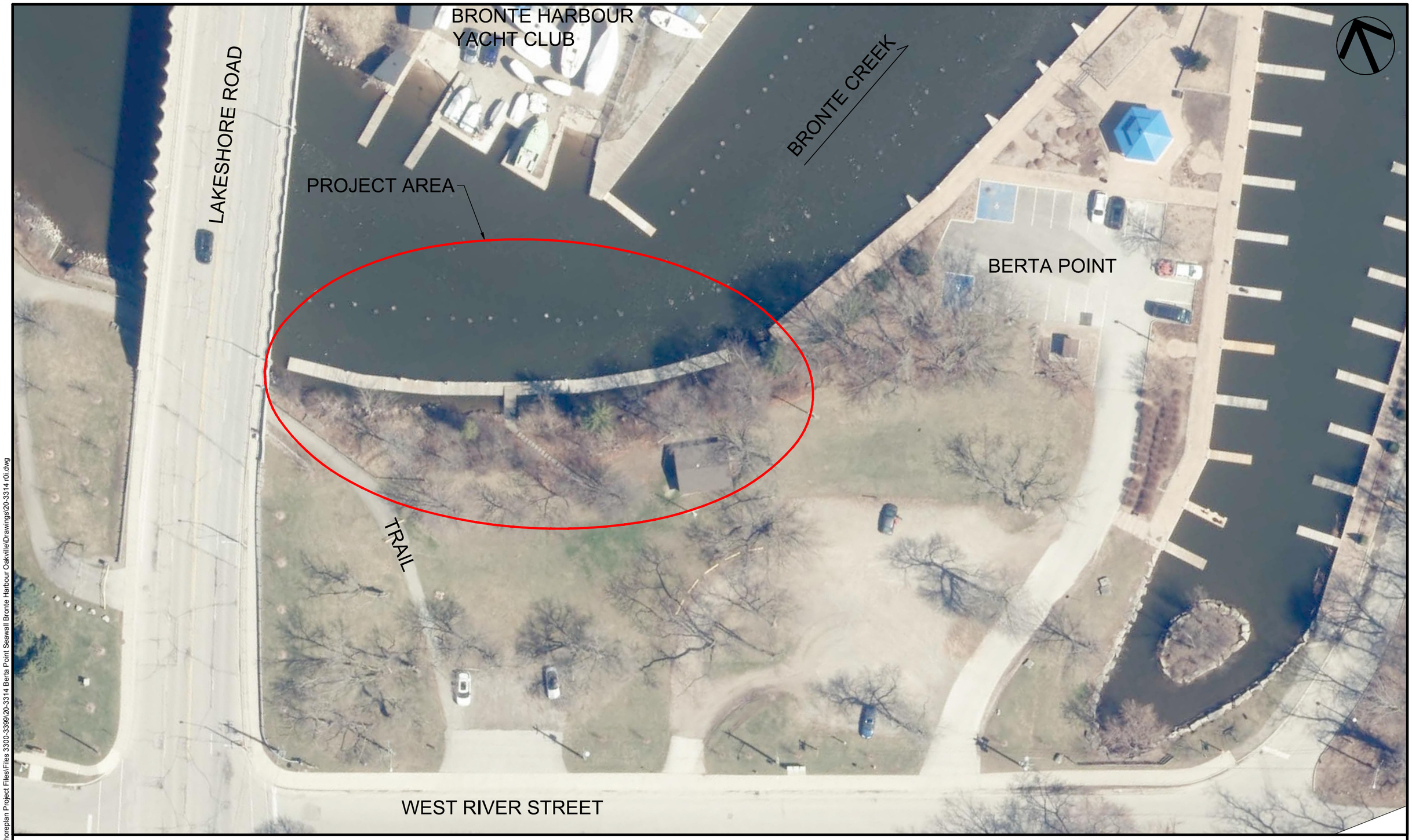
The proponent of the undertaking is the Corporation of the Town of Oakville. The project is being co-ordinated by Rakesh Mistry, OALA, CSLA, of the Town of Oakville.

Shoreplan Engineering Limited (Shoreplan) is responsible for the completion of the ESR. Shoreplan's office is located at 20 Holly Street Suite 202, Toronto, Ontario, M4S 3B1. The Principal in charge of the project and Project Manager is Jane Graham, P. Eng. Shoreplan was assisted by sub-consultants, Tarandus Associates Limited, environmental consultants

(Tarandus) led by Don Speller; Terraprobe, geotechnical consultants led by Billy Singh P. Eng.; and The MBTW Group, landscape architects led by Jana Joyce, OALA, CSLA, ASLA.

1.5 Report Format

This Environmental Study Report summarizes the work completed to carry out the Schedule B Municipal Class Environmental Assessment for the Berta Point West Bank Shoreline Improvements. Section 1 is the introduction. Section 2 defines the problem and purpose of the undertaking. Section 3 provides a description of the existing conditions. Section 4 describes and evaluates the options considered to address the problem. Section 5 describes agency and public consultation.



Project #20-3314
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SHOREPLAN

Figure 1.1
Berta Point West Bank Shoreline Improvements
Study Area

Drawing Location: S:\Shoreplan Project Files\Files 3300-3399\20-3314 Berta Point Seawall Bronte Harbour Oakville\Drawings\20-3314 r0l.dwg

2.0 Problem Statement

The shoreline along Berta Point is not formally protected and is only accessible via a staircase which leads to seasonal floating docks. High water levels experienced in 2017, 2019, and 2020 led to erosion of the Berta Point shoreline. The purpose of the project is to provide shoreline protection improvements to protect the shore and bank from further erosion, improve pedestrian access to the shoreline including increased accessibility (entry to the shore area is currently only via a staircase) improve park function, and an overall enhancement of the environmental conditions.

2.1 Purpose of the Undertaking

The purpose of the undertaking is to stabilize and rehabilitate the shore of Berta Point to mitigate further erosion of the bank during high water levels as well as to provide improved access along the shoreline in accordance with the objectives provided in the Town of Oakville Harbours Risk and Flood Assessment Study (Shoreplan, 2021).

3.0 Existing Site Conditions

3.1 Physical Site Conditions

The land use around the study area consists of parkland, low density residential, and harbour structures. Parkland surrounds the project area on all sides except for the river to the east. Low density residential structures are to the north, across Lakeshore Road W, and to the west across West River Street. Bronte Creek runs along the eastern edge of the project area with Harbour and Marina structures located along the opposite shore.

Berta Point is divided into two distinct park areas. The upper park adjacent east of West River Street and south of Lakeshore Road W is approximately 0.7 hectares. This area of the park has an informal (gravel) parking lot, walking trails, a park building, and a grassed area with mature trees along the perimeter. A road runs along the south side of the park to Berta Point's lower park which is approximately 0.3 hectares. The lower park has a formal paved parking lot and formal gardens surrounded with paved walkways and shade structures. Docks with electrical and water service line the shoreline.

Bronte Creek meanders through the harbour. At the north end of the project area, immediately south of the Lakeshore Road W Bridge, the creek is approximately 48 m wide. The creek travels south towards the lake before making a sharp turn to the east, the apex of the curve is at the southern end of the unprotected shoreline section of Berta Point. This is the narrowest location along the creek in the project area being only approximately 28 m wide.

The project area is located along the western shore of Bronte Creek and consists of the 80 m of shoreline immediately south of the Lakeshore Road W Bridge. The shoreline has scattered concrete rubble and stone around the water line that provides little protection. Above the rubble is a 1 to 1.5m high steeply sloped bank of exposed soil and shale bedrock. The bank rises to elevation 79.5m at an approximate slope of 1.75 horizontal (h):1 vertical (v). The upper bank is a lightly vegetated slope with trees and small shrubs that lean down towards the water. Exposed roots from the trees and shrubs are visible above the waterline. Below the shoreline is soft creek bottom material. The nearshore and bank can be seen in Photo 3.1 and Photo 3.2 below.

Partway along this shoreline is an access ramp supported on vertical steel piles. This ramp provides access to a seasonal floating dock that is installed during the recreational boating season. The dock runs parallel to the shoreline for recreational boaters to berth perpendicular to the dock with their bow in and tie off to floating anchors at the stern. During low water periods the dock rests on the creek bottom.

At the southeast end of the project area, the shoreline is protected by a shore wall which surrounds the more formal park area at Berta Point. The wall consists of concrete blocks with an interlocking brick walkway immediately behind the crest of the wall. Electrical pedestals are located at equal intervals along the crest of the wall at each berthing location to provide electricity to berthed watercraft. The wall is over 30 years old. Access gangways and floating docks provide access to the recreational boats during the boating season.

Photo 3.1: Existing Bank and Stairs Looking South (Left)

Photo 3.2: Existing Bank Looking North (Right)

3.2 Socio-Economic and Cultural Environment

3.2.1 Existing Land Use and Designations

The site is a public park that serves both local and regional functions. The site is along the shore of Bronte Creek and is in proximity to commercial areas to the east and residential areas to the west. It is used by residents who live near the park and the Bronte Inner Harbour area as well as recreational boaters who berth their vessels on the seasonal floating docks, shown in Photo 3.3 below.

The Town of Oakville has Berta Point zoned as a PB1 Parkway Belt Public Use. The town allows for PB1 zones to be utilized for uses including but not limited to conservation, marinas, as well as public parks.

The Town of Oakville Official Plan (OP) identifies the site as Parkway Belt space. The OP generally describes Parkway Belt Space as "…primarily designated to provide a linked system of open space and recreational facilities…" (OP, 2021, p. C-2). Adjacent properties are identified as low density residential and waterfront open space. Figure 3.1 shows a map of the land use designations near the study site.

The site is within Conservation Halton's (CH) Bronte Creek watershed boundary. CH regulates the areas that are affected by flooding and erosion hazards, wetlands, other hazardous lands, and lands adjacent to these features/functions. CH authority falls under Ontario Regulation 162/06. The study site is within CH's regulated area.

Photo 3.3: Project Area with Seasonal Floating Docks

3.2.2 Property Ownership

The parkland on the west, north, and south shores of Bronte Creek are owned by the Town of Oakville. The creek bottom along these shorelines and to where the creek outlets to Lake Ontario is also owned by the Town. Figure 3.2 shows a legal survey of the harbour with supplemental bathymetric data gathered by Shoreplan on November 19, 2021.

A topographic survey of the site was carried out by J.H. Gelbloom Surveying Limited on October 1, 2020 (Project No. 20-160). The topographic survey was used to prepare the base plans and report figures for this project. The topographic survey provides an overview of the project area including buildings, curbs, roads, and other site features.

3.3 Subsurface Conditions

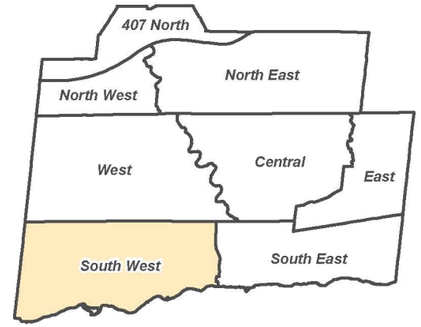
A geotechnical investigation for the study site was conducted by Terraprobe (2021). Four boreholes were advanced in the vicinity of the project area. Three boreholes (boreholes 1-20, 2-20, and 2A-20) were advanced along the top of the slope/table land and extended to auger refusal depths which varied from 2.4 m to 5.5 m. One borehole (borehole 3-20) was advanced at the bottom of the slope near the existing concrete block wall which extended to a depth of 11 m below grade. Rock coring was included in this borehole.

The composition of the earth fill materials varied across the site. The topsoil layer was underlain by earth fill that extended to depths varying from 0.8 m to 6.1 m below grade. Subsequently, the earth fill was followed by bedrock of the Georgian Bay Formation under borehole 1-20 and undisturbed native soils at boreholes 2-20 and 3-20. Georgian Bay Formation bedrock was located underneath the native soils.

Eight probe holes where advanced in the project area to provide information regarding the bedrock profile along the shoreline. Five probe holes (probe holes 1, 2, 2A, 3, and 4) were advanced along the bottom of the slope and had refusal depths varying from 0.9 m to 5.0 m below grade. Finally, three probe holes (probe holes 5, 6, and 7) were advanced in the water with refusal depths varying from 6.3 m to 7.2 m.

The investigation found a significant drop in bedrock elevation. At the top of the slope, boreholes 2-20 and 2A-20 encountered inferred bedrock at 0.8 m and 1.7 m below grade at elevations 79.0 m and 78.0 m respectively. Whereas, at the bottom of the slope, borehole 3-20 encountered bedrock at a depth of 7.8 m at elevation 68.1 m. Figure 3.3 shows the location of the boreholes, probes, and bedrock elevations. The geotechnical report is provided in Appendix A.

SCHEDULE F
SOUTH WEST
LAND USE



- SCHEDULE AREA BOUNDARY
- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- NEIGHBOURHOOD COMMERCIAL
- COMMUNITY COMMERCIAL
- CORE COMMERCIAL
- BUSINESS EMPLOYMENT
- INDUSTRIAL
- BUSINESS COMMERCIAL
- INSTITUTIONAL
- NATURAL AREA
- PARKWAY BELT
- PARKS AND OPEN SPACE
- WATERFRONT OPEN SPACE
- UTILITY
- GROWTH AREA*
- SPECIAL POLICY AREA
- SPECIAL POLICY AREA - SPEERS ROAD CORRIDOR
- RAILWAY
- MAJOR TRANSIT STATION

*Refer to Part E, Growth Area Policies

Refer to Part E, Exceptions

1:25,000

August 31, 2021

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SITE LOCATION

Lake Ontario

City of Burlington

Project #20-3314
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Figure 3.2
Berta Point West Bank Shoreline Improvements
Legal Survey with Supplemental Bathymetry

Drawing Location: S:\Shoreplan Project Files\Files 3300-3399\20-3314 Berta Point Seawall Bronte Harbour Oakville\Drawings\20-3314 r0i.dwg

BRONTE HARBOUR
YACHT CLUB

LAKESHORE ROAD

BRONTE CREEK

BERTA POINT

WEST RIVER STREET

PH6 66.0
PH7 66.5
PH5 66.6
PH4 69.6
PH3 72.9
PH2A 73.0
PH2 73.5
PH1 73.7
BH2-20 78.0
BH2A-20 78.3
BH3-20 68.1
BH1-20 79.0

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Figure 3.3
Berta Point West Bank Shoreline Improvements
Borehole Locations

3.4 Coastal Environment

3.4.1 Bathymetry

Berta Point is within Bronte Inner Harbour, which is located along Bronte Creek, near the mouth of the creek at Lake Ontario. The Town regularly dredges the harbour to maintain a navigable depth of the creek. Maintenance dredging is carried out every 3 to 8 years. Approximately 2,000 to 20,000 m^3 of creek bottom material is removed depending on the frequency of the dredging operation. Bathymetry of the study area was surveyed by Shoreplan as part of the last dredging operation in 2021.

A Sonarmite and Trimble Geo 7X GPS unit were used for the survey. The soundings were referenced to the water level on the day and approximate time the survey was conducted. The water level at the Lake Ontario Burlington gauge was used to determine the water level at the site. The average water level on March 24th, 2021 was approximately 74.50 m International Great Lakes Datum 1985 (IGLD). Additional bathymetric data was collected by hand in the shallow nearshore on November 19, 2021. Figure 3.2 shows bathymetric contours based on the data collected in 2021.

3.4.2 Water Levels

Berta Point is located approximately 750 m upstream of the mouth of Bronte Creek where it outlets into Lake Ontario. The water levels at the site are directly impacted by the water level on Lake Ontario and to a lesser extent flows in the creek due to the proximity to the Lake.

Environment Canada operates two gauges along Bronte Creek. The gauges are Bronte Creek Near Zimmerman (02HB011) and Bronte Creek Near Carlisle (02HB022), which are 13 and 24 km upstream of Berta Point, respectively, and so do not provide an accurate representation of the water levels in the study area.

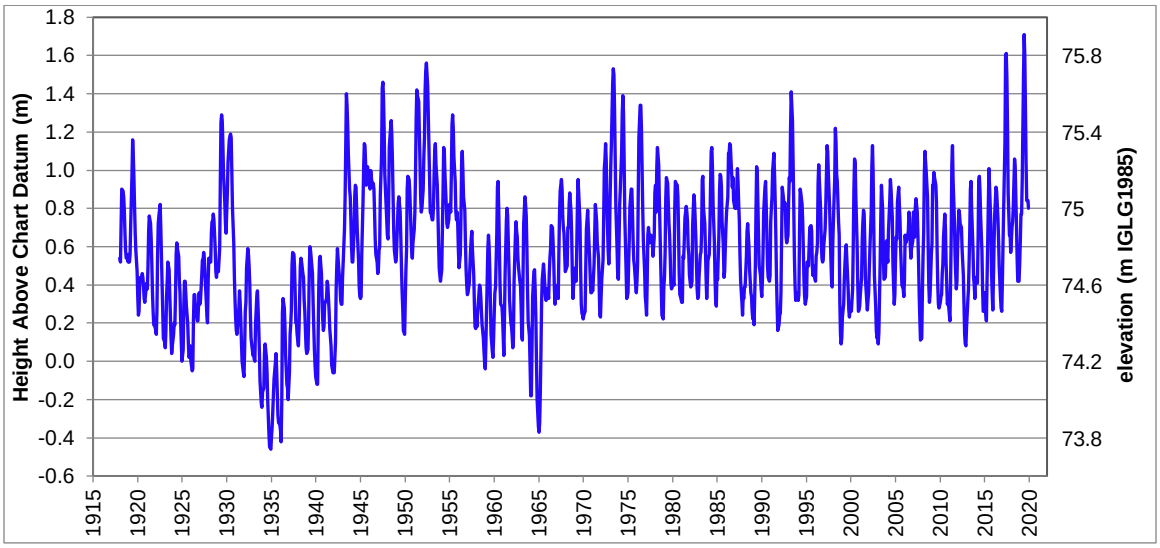
Water levels on Lake Ontario fluctuate on short-term, seasonal, and long-term bases. Brief seasonal fluctuations reflect the annual hydrologic cycle which is characterized by higher net basin supplies during the spring and early part of summer with lower supplies during the remainder of the year. Water levels generally peak in the summer (June) with the lowest water levels generally occurring in the winter (December). The average water level fluctuation over a year is approximately 0.5 m. Although water levels below chart datum are rare, the lowest monthly mean on record is approximately 0.4 m below chart datum. Chart datum for Lake Ontario is 74.2 m above the 1985 International Great Lakes Datum (IGLD1985). At Burlington, IGLD1985 is 0.03 m lower than Geodetic Survey of Canada datum (GSC).

Short-term fluctuations last from under an hour up to several days and are caused by local meteorological conditions. These fluctuations are most noticeable during storm events when barometric pressure differences and surface wind stresses cause temporary imbalances in water levels at different locations on the lake. These storm surges, or wind-setup, are highest at the ends of the Lake, particularly when the wind blows down the length of the Lake. The Ministry of Natural Resources (MNR) (1989) investigated storm surges throughout the Great Lakes as part of their analysis of extreme water levels for design conditions. They calculated the 100-year return period storm surge to be 0.81 m at Oakville and 0.94 m at Burlington.

Long-term water level fluctuations on the Great Lakes are the result of persistently high or low net basin supplies. More than a century of water level records shows that there is no consistent or predictable cycle to the long-term water level fluctuations. Figure 3.4 shows Lake Ontario's mean monthly water levels from 1918 to 2019 with both long-term and seasonal fluctuations. It can also be seen that new record high mean monthly water levels occurred in both 2017 and 2019. Prior to 2017, the highest daily mean water level was 75.74m IGLD1985 and occurred in 1973. Daily mean levels of 75.84 m and 75.91 m IGLD1985 were recorded in 2017 and 2019, respectively.

MNR (1989) calculated instantaneous water levels for all Canadian shores on the Great Lakes using a combined probability analysis of monthly mean lake levels and storm surges. A coarse grid circulation model was used to interpolate surge values between stations where measured data was used to calculate the surge height return periods. Toronto and Burlington were the data stations either side of the Oakville sector. The water levels presented in that report were typically used for designs and assessments, but the 2017 and 2019 high water levels have led to a re-assessment of those values.

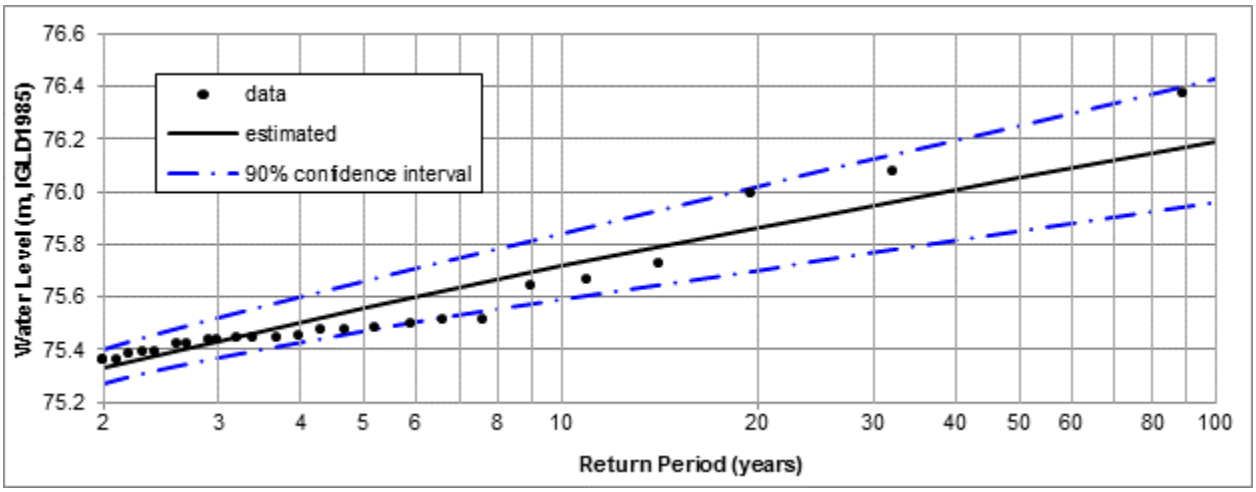
Figure 3.4 Lake Ontario Mean Monthly Water Levels, 1918 - 2019



An updated water level analysis was therefore completed using hourly water level data measured at Burlington over the 50-year period from 1971 to 2020. Extreme value analyses (EVA) of the annual maxima water level were completed using both a Gumbel probability distribution and a three-parameter Weibull distribution. The Gumbel analysis provided the better correlation. The results of the EVA with the highest correlation are shown in

Figure 3.5.

Figure 3.5 Extreme Value Analysis of Burlington Annual Maxima Water Levels



Water levels for different return periods at Oakville were calculated by subtracting 0.1 m from the upper 90% confidence interval of the calculated levels at Burlington. The 0.1 m difference is the difference in the 100-year water levels for the Burlington and Oakville sectors presented in MNR (1989). Only the 100-year water level was presented for the Oakville sector, so that difference was used for all return periods. Table 3.1 shows the resulting Oakville water levels. Elevations are presented in meters GSC.

Table 3.1 Instantaneous Water Levels at Oakville

Return Period (years)	1.1	5	10	25	50	100
Water Level (m, GSC)	75.02	75.53	75.71	75.95	76.12	76.30

Judgement is required in determining design water levels that are the result of expected changes in future water levels due to the additional impact of both climate change and water level regulations.

3.4.3 Climate Change

A considerable amount of research has been done on climate change and its expected effects on the Great Lakes. While results vary significantly, there is a consensus on several key points. Overall, water levels are likely to fall while severe storm frequency and intensity are both expected to increase. Climate change's impacts on Lake Ontario's water levels are expected to be less than on the other Great Lakes because its water levels are regulated. Since water levels at Berta Point are directly tied to the level of Lake Ontario, climate change is not expected to have a significant effect on the water levels at this location.

The International Joint Commission (IJC) began regulating Lake Ontario water levels in 1960 through the Moses-Saunders Dam in Cornwall. All water from Lake Erie flows into Lake Ontario and passes through the dam exiting into the St. Lawrence River. The IJC regulated Plan 1958 was in effect from 1963 until Plan 2014 was implemented in 2017. Plan 2014 was in use when the 2017 and 2019 high water levels occurred so its effect on those levels impacted the 100-year water levels. The IJC has undertaken a review of Plan 2014 and has acknowledged the possibility that it could be changed, if required.

3.4.4 Recession Rates

Evidence of erosion is clearly present at the unprotected portion of Berta Point's shoreline with the presence of an erosion scarp and undermining of tree and shrub roots. While the project location is inland of Lake Ontario and protected by harbour structures leading to very limited wave action acting on the bank, scour from creek flows drive erosion at this site. The potential for climate change to increase severe storm frequency and intensity may cause more high flow and flood events in Bronte Creek thus exacerbating natural erosion processes and leading to further erosion of the informally protected portion of the bank. Implementation of formal shore protection structures would help to mitigate the erosion and recession of the bank at Berta Point.

3.4.5 Sediment Transport

GHD Group Ltd. (GHD) completed a Sediment Management Study (GHD,2014) for both the Oakville and Bronte Harbours in which they summarize and characterize sediment transport in both harbours. Their report identified that sediments are generally deposited downstream of the Lakeshore Road West Bridge, specifically in the areas where Bronte Creek meanders and makes a sharp turn to the east, the central harbour, western harbour, and to a lesser extent the outer harbour. The meanders in the creek as well as the widening of the channel decreases the velocity of the flow of water. The ability of water flows to hold and transport sediment are tied to the flow velocity, as such when the velocity decreases, so does the ability for the flow to keep sediments suspended thus leading to the deposition of sediments within these areas of Bronte Harbour.

Since the project area is just upstream of these sites, in an area where the creek width remains constant and straight, construction of shore protection is not anticipated to have significant effects on the deposition of sediments in Bronte Creek.

3.5 Terrestrial Habitat

Riparian habitat in the shoreline study area of Berta Point is a mixture of formally protected and unprotected shoreline. The upper slope down to the water is partially vegetated by trees and small shrubs. Below the high water mark the bank is eroded and has exposed soil and bedrock.

Berta Point is dominated by hardscaping features such as paved pathways, parking lots and park structures. The upper part of the park (south of Lakeshore Road and east of River Street) which is immediately adjacent to the project area has an informal gravel parking lot, walking trails, park buildings, manicured lawns, and some exotic and/or invasive vegetation species. The study area is likely used by mammals typical of such an urban setting such as foxes, racoons, squirrels, voles etc. However, this park is not considered to have significant terrestrial habitat The existing conditions at Berta Point can be seen in Photo 3.4, Photo 3.5, and Photo 3.6 below.

Photo 3.4: View of Bank with Vegetation

Photo 3.5: View of Bank Without Vegetation

Photo 3.6: Top of Bank at Berta Point

3.6 Aquatic Habitat

The fish habitat on all sides of Berta Point consist of organic silt substrates, hard vertical shorelines, no aquatic macrophytes, and virtually no structural habitat (i.e. cover, niche spaces, edge, shelter, etc.). Riparian vegetation is absent. The water quality around Berta Point is generally poor, with degradation due to upstream stormwater discharges which impose suspended-sediment loadings.

The most noteworthy aspect of the fish community in Bronte Creek which flows past Berta Point is probably the migratory species that pass the point en route to upstream spawning habitats. These fish species include rainbow trout, brown trout, chinook salmon, and white suckers. Another important sport fish known to inhabit nearby waters is smallmouth bass. Carp can also be found the waters near to Berta Point along with various minnows/baitfish such as smelt, alewife, etc.

3.7 Species at Risk

The Ontario Ministry of Natural Resources and Forestry (MNRF) was contracted for information about Species at Risk (SAR) in the vicinity of the study area. The silver shiner, a fish species classified as “threatened” is known to reside in Bronte Creek. The aquatic habitat in the vicinity of Berta Point, however, does not conform to the habitat characteristics known to be preferred by this species at risk.

3.8 Tree Inventory

The MBTW Group conducted a tree inventory assessment in November of 2020 which includes the assessment of 78 trees at Berta Point. The assessment includes a summary of the species, size, general condition, and notes for each tree. The trees present included native species such as the Sugar Maple, Ash, and Black Walnut and invasive species such as the Manitoba Maple, Norway Maple, and Norway Spruce.

Of the 78 trees at Berta Point: 72 trees were either identified to be in good or fair condition. 4 trees were identified to be in poor condition, 1 in terminal decline, and 1 tree was considered dead. Plans with the tree inventory are provided in Appendix A.

4.0 Alternative Solutions

The initial step of an environmental assessment is to develop a set of criteria to evaluate the alternate solutions and determine impacts of each solution. Alternative solutions are developed that consider the project objectives and site conditions. Following development, the solutions are evaluated against the criteria, preliminary construction cost estimates are prepared, and a preferred solution is selected.

Cost estimates are based on the construction costs of past projects on Lake Ontario in the Greater Toronto Area. It should be noted that construction costs have been impacted by Covid-19 and supply chain issues over the past two years. Costs presented may not accurately reflect the construction costs when this project is tendered. These costs are presented for comparison only. We recommend a 30% contingency be carried for this project.

Five alternative solutions were considered to address the problem statement. The solutions considered included do nothing, a concrete block retaining wall with walkway, rock protection with a pile supported walkway, steel sheet pile wall with walkway, and a steel sheet pile wall with cantilevered walkway.

The following describes the criteria which the solutions were evaluated against and a description of each alternative solution. Each description includes reasoning for evaluation. Table 4.1 at the end of this section provide a summary of the information provided.

4.1 Evaluation Criteria

Three broad evaluation categories were developed to compare each solution. Those categories are:

- Environmental Impacts
- Constructability
- Other

The evaluation criteria for each category is as follows:

Environmental Impacts

- alternatives that do not reduce channel width or restrict creek flows are preferred
- alternatives that enhance terrestrial and fish habitat are preferred

Constructability

- alternatives with well understood/traditional construction methods are preferred
- alternatives that are compatible with future dredging operations are preferred
- alternatives that protect the shoreline for a long period of time with minimal maintenance are preferred

Other

- alternatives that improve access along the shoreline are preferred (objective of the study)
- alternatives that increase slope stability and reduce erosion
- alternatives that improve or maintain navigation are preferred

4.2 Alternative Solutions

4.2.1 Do Nothing

This option is to leave the existing bank as is with no protection against erosion. Access to the docks and along the shoreline is only available during the boating season when the floating dock is installed via the existing access steps. The shore is currently protected with scattered concrete rubble that is discontinuous; some areas of the shore have more rubble than others. A do-nothing option would mean leaving the backshore and slope susceptible to erosion and instability. Access along the shoreline would remain via the floating docks during the boating season. This option does not fulfill the main objective of project.

While this option does not disturb existing vegetation or existing fish habitat, it does not provide any opportunity to improve them either. The bank continues to be exposed to river flows which erode the exposed soil and weathered shale bank leading to instability and loss of vegetation.

Doing nothing does not require construction of shore protection. Dredging operations would continue as they have in the past. Navigation along the creek would remain the same. The floating dock access would continue to be the only access to the shoreline. It will need to be replaced in the future. If the dock is replaced it will need the area to be dredged to provide sufficient water depth to keep the dock floating at low water level conditions.

4.2.2 Option 1 - Concrete Block Wall

The concrete block wall option consists of three precast concrete blocks stacked on top of each other which are founded on a rip rap berm. A 3 m wide concrete deck would be constructed behind the wall. The concrete block wall would be a continuation of the existing protection at Berta Point allowing for continuous access to the shoreline. The top of the wall would be at elevation of 76.3 m which is at the 100-year flood level in the creek. The crest of the rip rap berm would be at approximately 74.5 m which would below the highwater mark for fish habitat (elevation 75.3 m). The structure is positioned to minimize the in-water footprint and not restrict creek flows by excavating into the bank. Figure 4.1 shows a site plan of this option and Figure 4.2 shows a typical section.

Some of the creek bed will need to be excavated to construct the wall disturbing existing fish habitat. The upper bank will also be disturbed during construction which may require re-vegetation of the bank. The rip rap berm would provide new fish habitat and stabilize the bank which will facilitate the regrowth of vegetation. In addition, vegetation may grow within the voids between the stones.

The concrete block wall is positioned to maintain the width of the creek bottom to minimize impacts on creek flows and navigation. The rip rap berm will be embedded in the soft creek bottom sediments at or below the dredge line for navigation (72 m). Care will need to be taken to ensure the wall is not disturbed during dredging.

This wall option is like other walls in Bronte Inner Harbour and along Berta Point. Traditional materials and equipment can be used for construction of the wall. This type of construction is well known and understood. It could be constructed with land or marine based equipment. The wall will not be founded on bedrock. Some differential settlement can be anticipated due to the soft creek bottom sediment. A concrete block wall is expected to have a design life greater than 35 years. Future maintenance is not expected to be significant.

A floating dock will be provided along the shoreline to access the boats. A ramp will extend from the walkway to the floating dock. The shore parallel dock will be positioned so that it has sufficient water to float. The dock will need to be removed or relocated in the fall of each year, so it does not interfere with spring flows.

A budgetary cost estimate for construction the shore protection is $420,000 not including a floating dock, landscaping or a contingency allowance or taxes.

4.2.3 Option 2 - Rock Protection with Pile Supported Walkway

This option protects the bank with rock protection (rip rap berm) and provides a walkway on single row of piles, which are socketed into bedrock. The rip rap berm will have a crest elevation of 76.3m, it will slope at 2h:1v into creek bottom until below the dredge line. The berm will protect the bank from further erosion. The bank is excavated to accommodate the berm. A pile supported deck will be located within the rock protection and have a deck elevation of 76.3 m. It will be connected by a ramp to the existing walkway behind the adjacent shoreline protection along Berta Point allowing for continuous access to the shoreline. Figure 4.3 shows a site plan of this option and Figure 4.4 shows a typical section.

Excavating the bank allows the structured to be positioned so that it does not alter the in-water footprint or restrict flows on the creek. However, supporting the walkway on piles over the berm minimizes the width of the structure. Some of the creek bed will need to be excavated disturbing some of the existing fish habitat. The upper bank will also be disturbed. Spaces and crevices between the stones will provide support aquatic habitat. Stabilizing the bank which will facilitate the regrowth of vegetation that has been lost to erosion and will be lost during construction. In addition, vegetation may grow within the voids between the stones.

Dredging operations will need to consider the position of the rock berm to ensure that it is not disturbed. However, some adjustment of the stone berm over time will not impact the pile supported walkway because they are independent of each other.

This option uses traditional equipment and materials to construct the rock protection and walkway. It is anticipated that the work will need to be completed from marine based equipment because the piles will need to be driven and anchored into bedrock. This may be made more challenging by the varying elevation of the bedrock along this shoreline. However, each pile is independent of the other except by connection of the walkway itself. Variations of the bedrock elevation can be adjusted for in the length of the piles installed. This option is expected to have a design life greater than 35 years. Maintenance will be minimal because the berm and walkway are independent of each other.

This option has shore parallel floating docks for the recreational boats. A ramp will extend from the walkway to the floating dock. The dock could be anchored to the walkway support piles. The dock will need to be removed or relocated in the fall of each year, so it does not interfere with spring flows.

A budgetary cost estimate for construction the shore protection is $450,000 not including a floating dock, landscaping, a contingency allowance, or taxes.

4.2.4 Option 3 - Steel Sheet Pile with Walkway

Option 3 is a steel sheet pile wall with a walkway that runs along the landside of the wall. The wall would be positioned approximately 3 m landward of the existing bank. The gap between the bank and the wall will be backfilled with stone. The top elevation of the wall and deck would be at 76.3 m. The steel sheet piles would be driven, and toe pinned to bedrock. The walkway will connect with the existing walkway at Berta Point to allow for continuous year-round access to the shoreline. Figure 4.5 and Figure 4.6 show a site plan and typical cross section of this option.

The wall in this option is positioned to accommodate space for the walkway along the bank. No excavation of the bank is proposed. It will require some encroachment into the creek bed which will resulting in a loss of fish habitat. The upper bank will not be disturbed above the top of the wall. The wall will be a steel sheet pile wall with no crevices or niche space to support fish habitat. Stabilizing the bank at the shoreline will facilitate the regrowth of vegetation that has been lost to erosion over time.

The wall will be designed to accommodate dredging operations. Dredging adjacent to a steel sheet pile wall will allow for navigation and berthing of vessels closer to shore. Below water, the creek will be widened.

This option uses traditional equipment and materials to construct the shore protection and walkway. The work will need to be completed from marine based equipment because the piles will need to be driven and toe pinned to bedrock. This will be challenging because of the varying elevation of the bedrock along this shoreline. The wall will need to be restrained during construction to prevent it from slipping along the submerged bedrock slope. It is likely that the bedrock will need to be chipped out to create a ledge to support the wall and pin. This option is expected to have a design life greater than 50 years. Maintenance will be minimal if installed by experienced marine contractors.

This option has a shore parallel floating docks for the recreational boats. A ramp will extend from the wall to the floating dock. The dock could be anchored to the wall. The dock will need to be removed or relocated in the fall of each year, so it does not interfere with spring flows.

A budgetary cost estimate for construction the shore protection is $700,000 not including a floating dock, landscaping, a contingency allowance, or taxes.

4.2.5 Option 4 - Steel Sheet Pile with Cantilevered Walkway

Option 4 is a Steel Sheet Pile wall with a Cantilevered Walkway is similar Option 3 except the wall is positioned closer to the existing bank and the walkway is supported from the wall over the water (cantilevered). The wall is located landward of the high-water mark for fish habitat (elevation 75.3m). The top of the wall is at elevation 76.3m. The steel sheet piles would be driven, and toe pinned to bedrock. The walkway will connect with the existing walkway at Berta Point to allow for continuous year-round access to the shoreline. Figure 4.7 and Figure 4.8 show a site plan and typical cross section of this option.

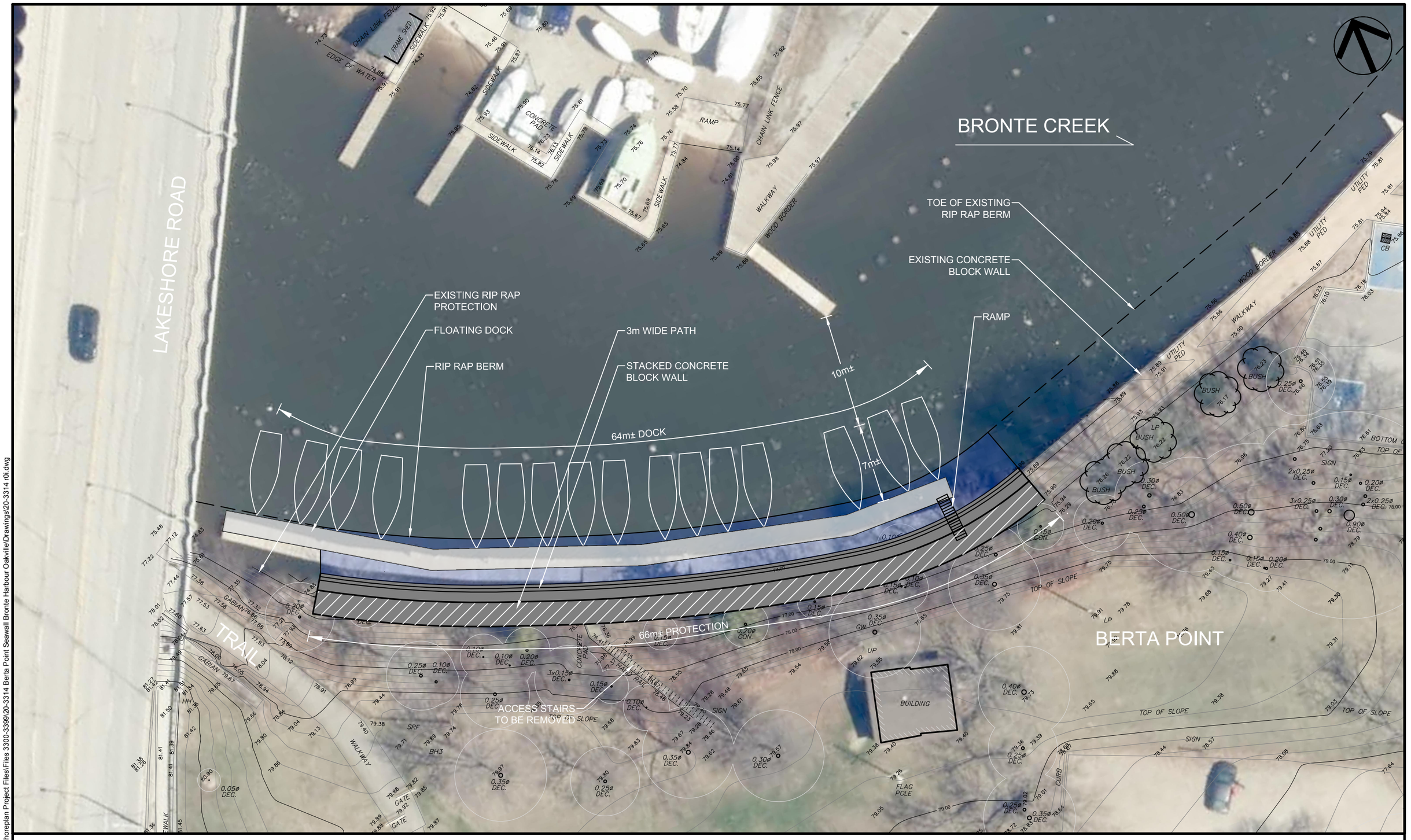
The wall in this option is positioned to minimize impacts to fish habitat. The upper bank will not be disturbed. The bank on the creek side of the wall will be excavated to increase the depth of water for navigation and increase the area of fish habitat in the creek. The wall will be a steel sheet pile wall with no crevices or niche spaces to support fish habitat. Stabilizing the bank at the shoreline will facilitate the regrowth of vegetation that has been lost to erosion over time.

The area on the creek side of the wall will be excavated. Future dredging operations adjacent to a steel sheet pile wall will allow for navigation and berthing of vessels closer to shore. Below water, the creek will be widened.

This option uses traditional equipment and materials to construct the shore protection and walkway. The work will need to be completed from marine based equipment because the piles will need to be driven and toe pinned to bedrock. This will be challenging because of the varying elevation of the bedrock along this shoreline; however, the bedrock rises closer to shore and may be easier to excavate the rock to provide a ledge to support and pin the wall. This option is expected to have a design life greater than 50 years. Maintenance will be minimal if installed by experienced marine contractors.

This option has shore parallel floating docks for the recreational boats. A ramp will extend from the wall to the floating dock. The dock could be anchored to the wall. The dock will need to be removed or relocated in fall, so it does not interfere with spring flows.

A budgetary cost estimate for construction the shore protection is $750,000 not including a floating dock, landscaping, a contingency allowance, or taxes.

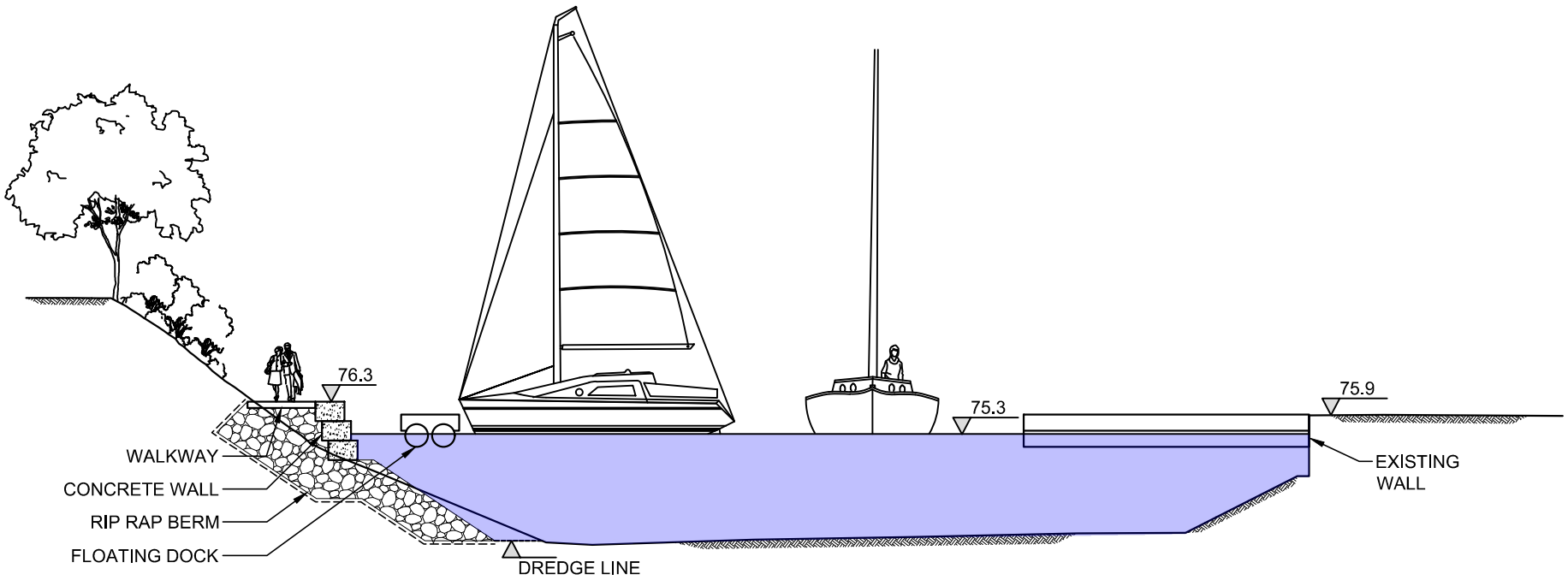


Project #20-3314
Scale 1:300

SHOREPLAN

Figure 4.1
Berta Point West Bank Shoreline Improvements
Option 1 - Concrete Block Wall on Rip Rap Berm Site Plan

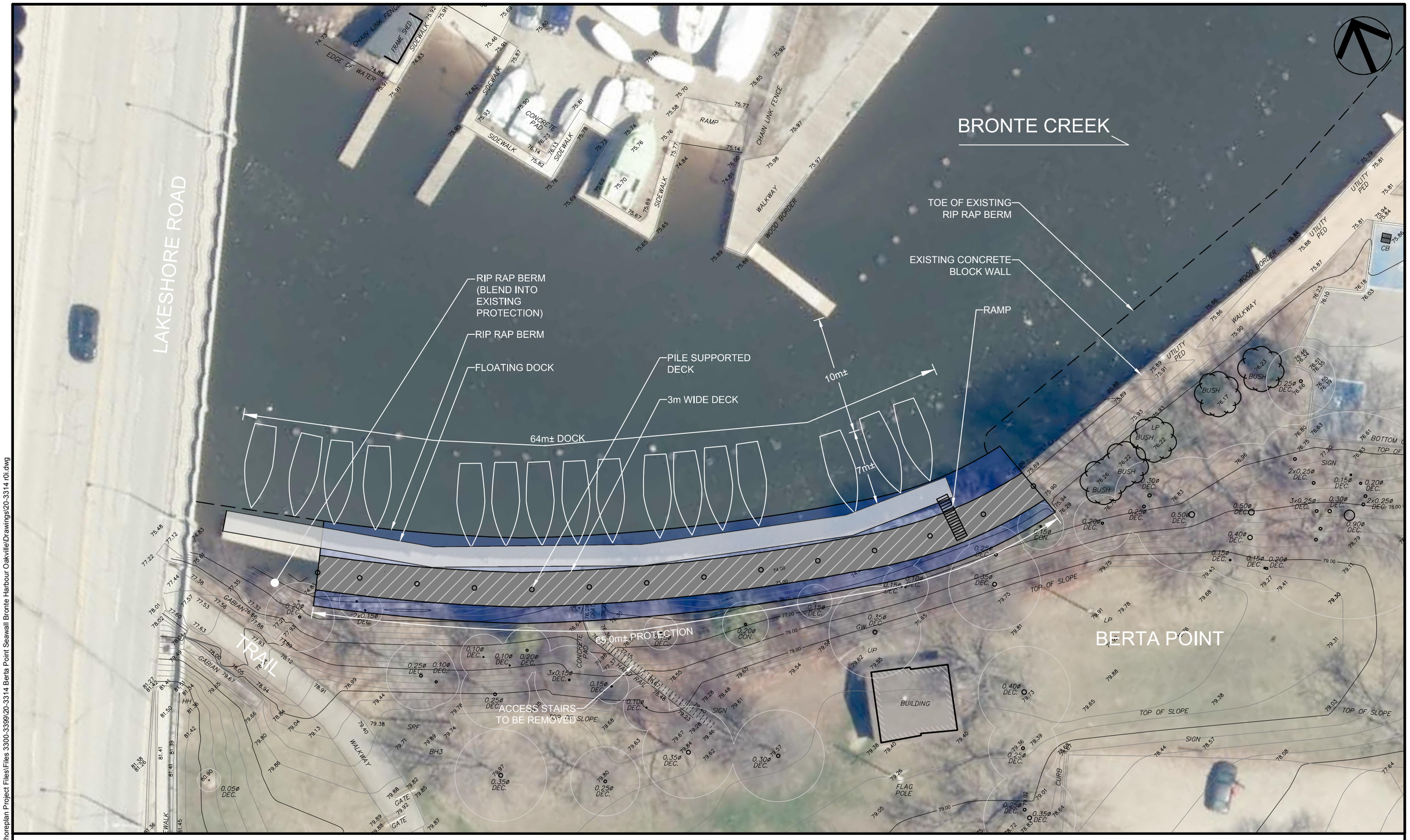
Drawing Location: S:\Shoreplan Project Files\Files 3300-3399\20-3314 Berta Point Seawall Bronte Harbour Oakville\Drawings\20-3314 r0l.dwg



Project #20-3314
Scale 1:200

SHOREPLAN

Figure 4.2
Berta Point West Bank Shoreline Improvements
Option 1 - Concrete Block Wall On Rip Rap Berm Typical Section



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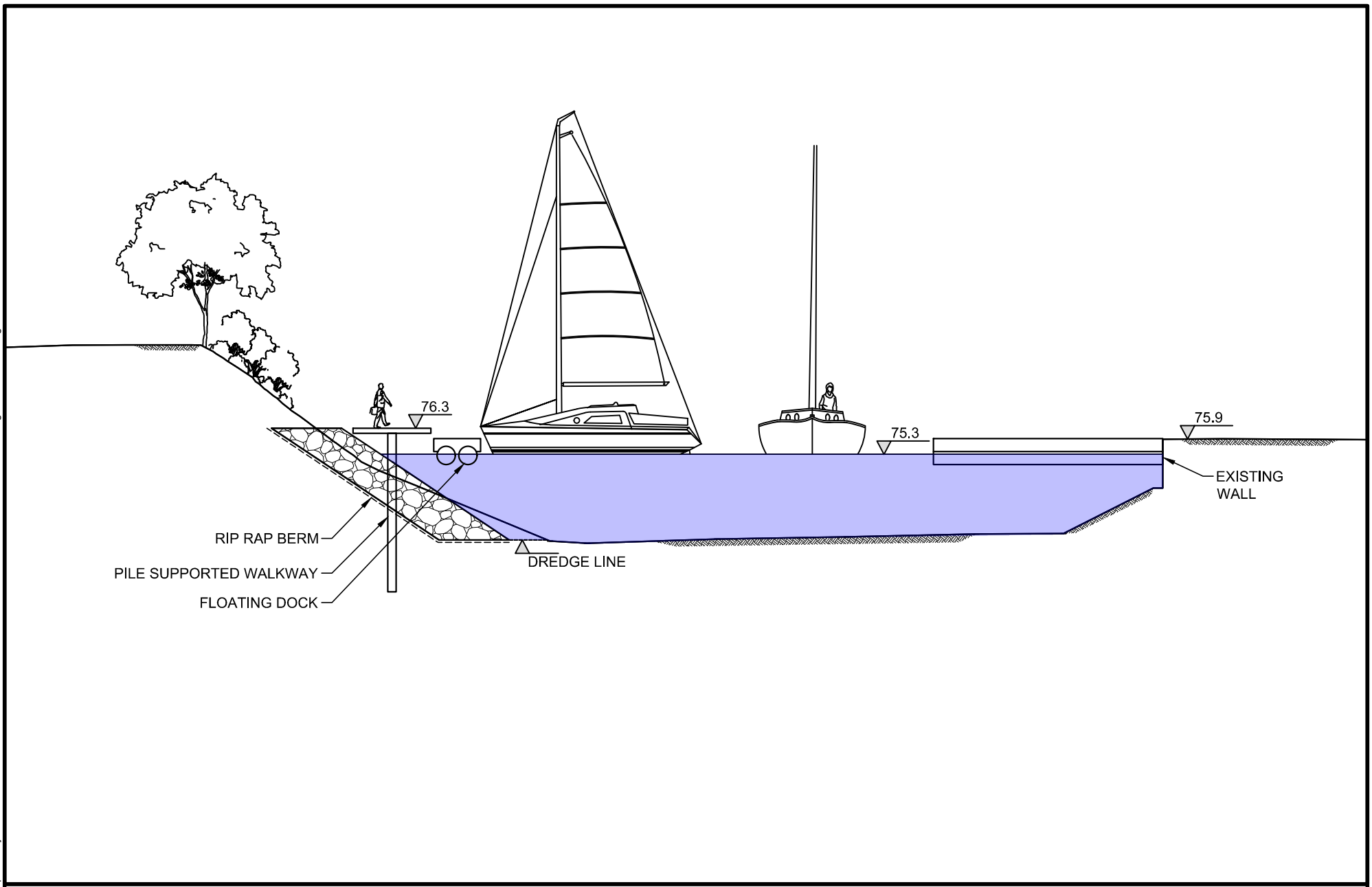
SHOREPLAN

Figure 4.3
Berta Point West Bank Shoreline Improvements
Option 2 - Rock Protection With Pile Supported Walkway Site Plan

Drawing Location: S:\Shoreplan Project Files\Files 3300-3399\20-3314 Berta Point Seawall Bronte Harbour Oakville\Drawings\20-3314 r0f.dwg



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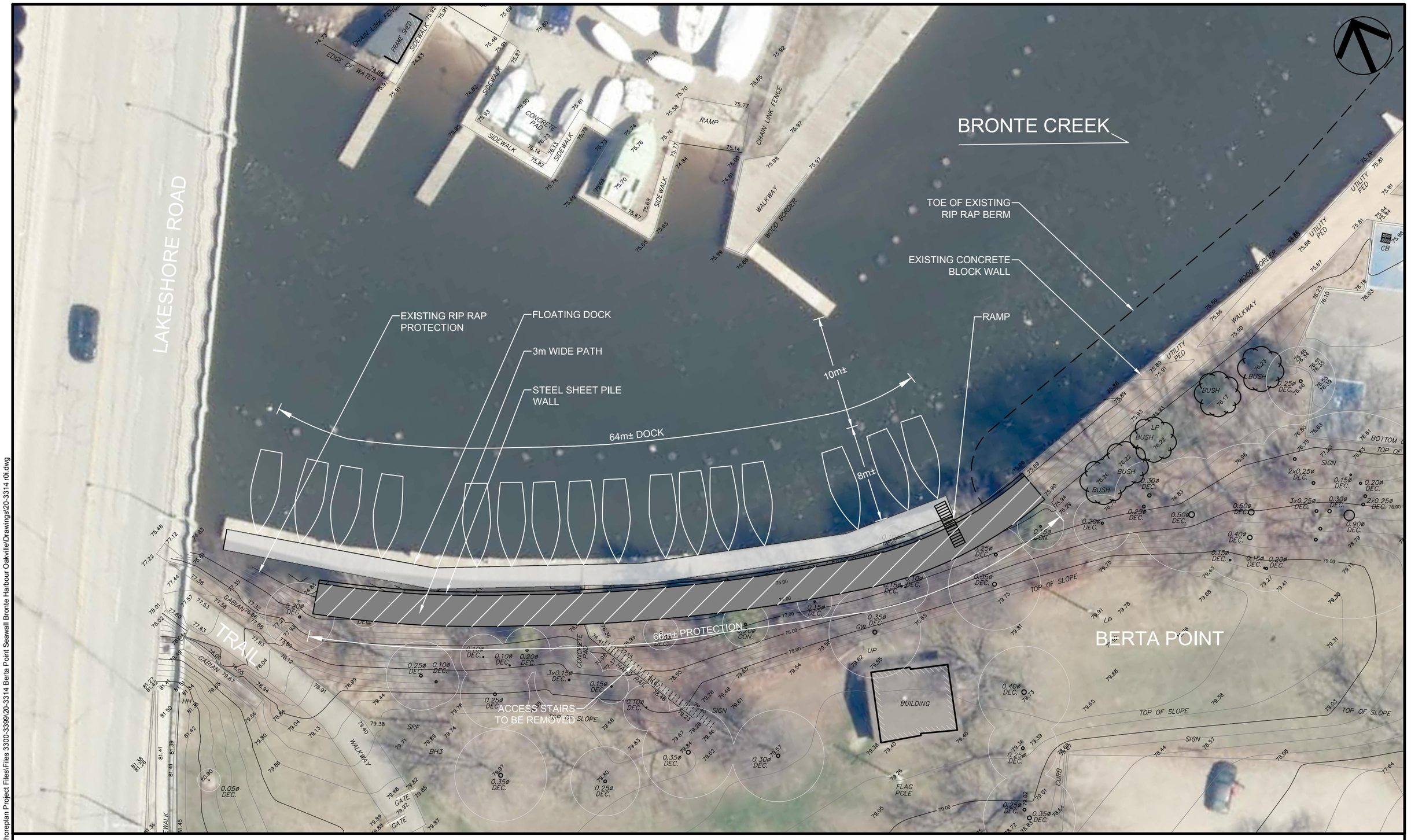
SHOREPLAN

Figure 4.4
Berta Point West Bank Shoreline Improvements
Option 2 - Rock Protection With Pile Supported Walkway Typical Section

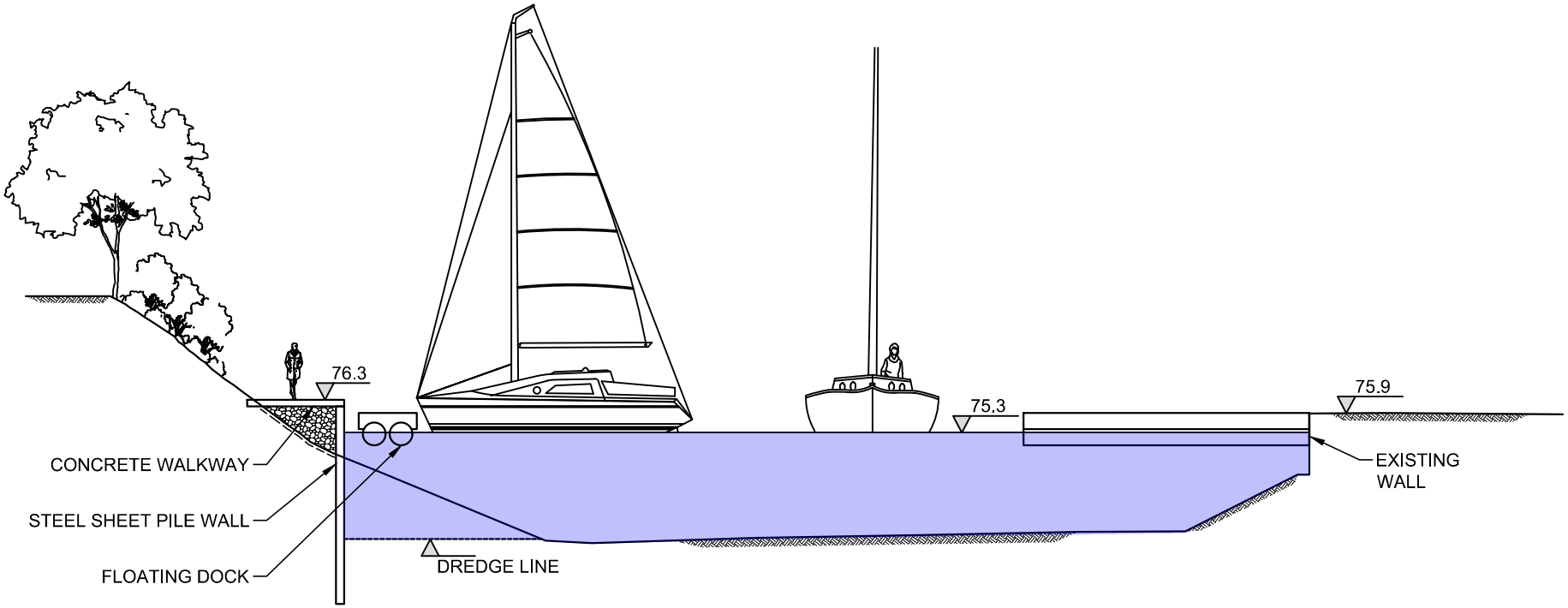


Project #20-3314
Scale 1:300

SHOREPLAN

Figure 4.5
Berta Point West Bank Shoreline Improvements
Option 3 - Steel Sheet Pile With Walkway Site Plan

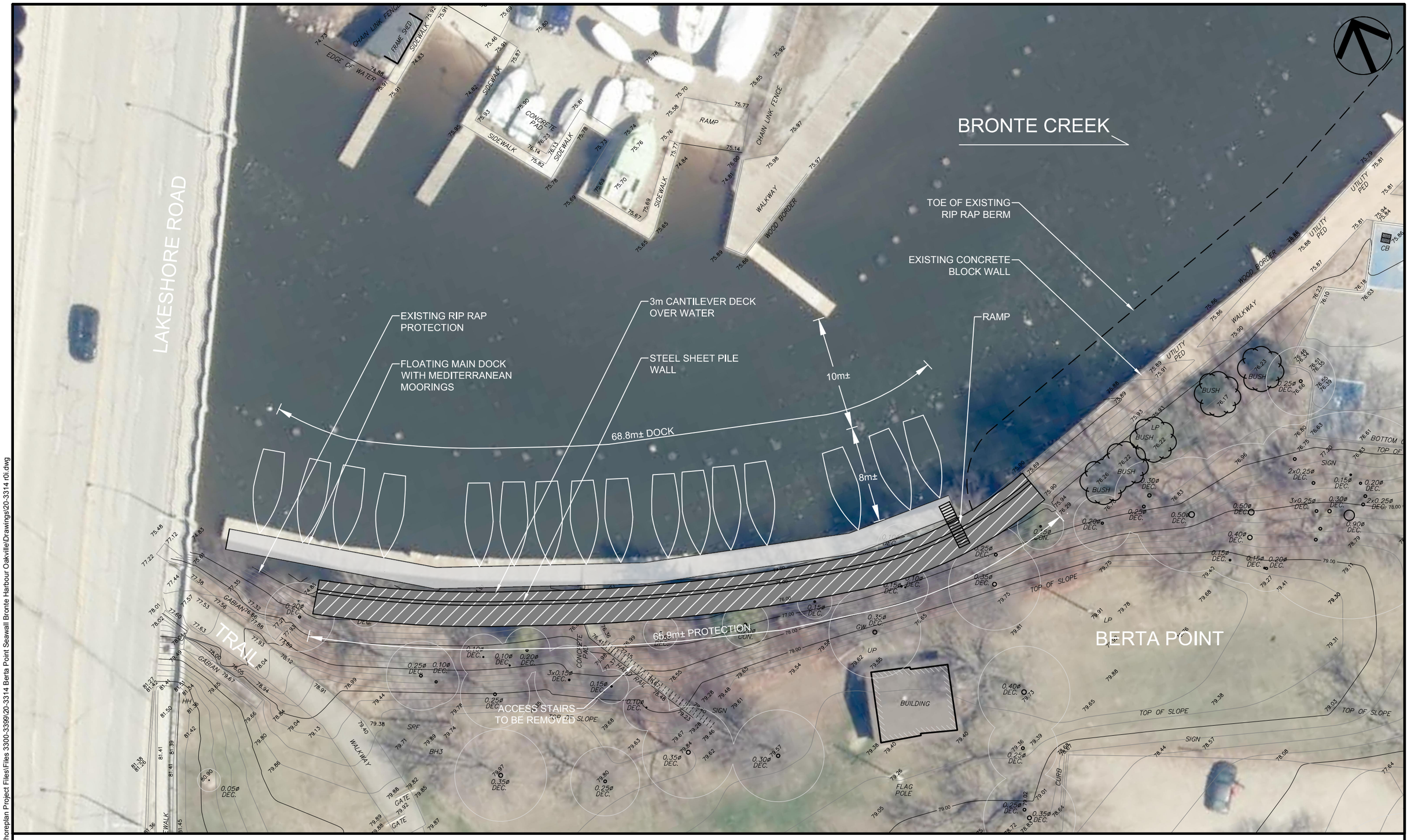
Drawing Location: S:\Shoreplan Project Files\Files 3300-3399\20-3314 Berta Point Seawall Bronte Harbour Oakville\Drawings\20-3314 r0i.dwg



Project #20-3314
Scale 1:200

SHOREPLAN

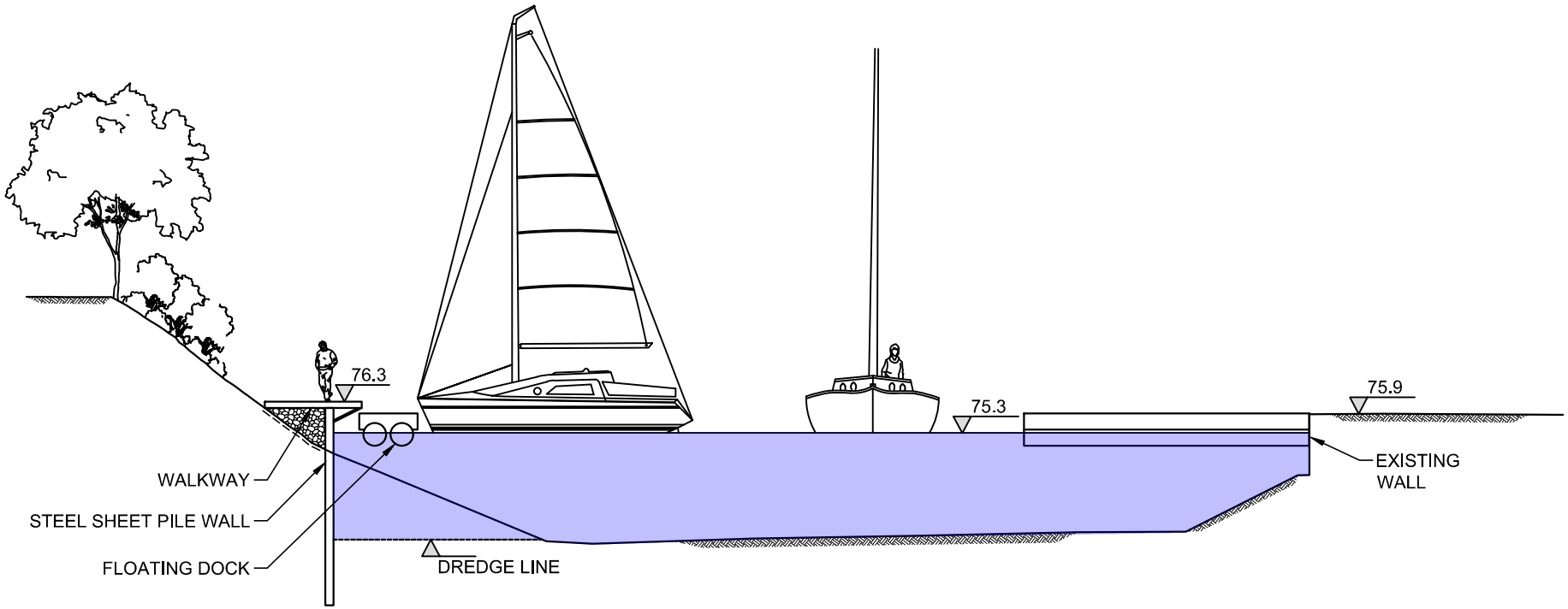
Figure 4.6
Berta Point West Bank Shoreline Improvements
Option 3 - Steel Sheet Pile With Walkway Typical Section



Project #20-3314
Scale 1:300
SHOREPLAN

Figure 4.7
Berta Point West Bank Shoreline Improvements
Option 4 - Steel Sheet Pile With Cantilevered Walkway Site Plan

Drawing Location: S:\Shoreplan Project Files\Files 3300-3399\20-3314 Berta Point Seawall Bronte Harbour Oakville\Drawings\20-3314 r0i.dwg



Project #20-3314
Scale 1:200
SHOREPLAN

Figure 4.8
Berta Point West Bank Shoreline Improvements
Option 4 - Steel Sheet Pile With Cantilevered Walkway Typical Section

4.3 Evaluation of Solutions

Each of the options were evaluated with the criteria outlined in Section 4.1 with the Do Nothing option presented for comparison. Table 4.1 shows a summary of the evaluation of each option. If an option had a positive impact on a criterion, that criterion was coloured green and if it had a negative impact on the criteria it was coloured red. Where an option had no impact on the criteria it was coloured yellow.

Overall, Options 1 and 2 ranked very closely. Both of these options included a rip rap berm. Although the berm may result in an initial loss of fish habitat, it was considered to provide an overall enhancement to the shoreline by providing crevices, niche spaces which would be an improvement over the existing eroding shale bedrock, and vertical steel sheet pile walls proposed in Options 3 and 4. The rip rap berm also provides opportunities for vegetation to grow within those gaps or spaces between the stones and provide a more natural appearance in keeping with the shorelines north of the bridge.

All the options result in the creek being widened so that the works do not negatively impact creek flows. Options 3 and 4 (steel sheet pile walls) will provide the biggest increase in width which improves creek flows and navigation.

All the structures use traditional materials and construction methods. However, constructing the steel sheet pile walls proposed in Options 3 and 4 would be more challenging because of the steeply sloped bedrock identified in the geotechnical investigation. Option 1 ranked somewhat lower than Option 2 because the concrete block wall would be supported on a rip rap berm on soft bottom sediments that may result in differential settlement. All options will provide a design life over 35 years. The steel sheet pile walls will have a longer design life if constructed by experienced marine contractors. Overall Option 2 scored highest for constructability.

Future dredging operations will be more challenging with Options 1 and 2 because they include a rip rap berm. The steel sheet pile walls (Options 3 and 4) would be designed to allow dredging adjacent to the walls and would provide berthing immediately adjacent to the walls.

All the options require a floating dock parallel to shoreline.

Overall, Option 2 Rock Protection with Pile Supported Walkway, was found to be the preferred Alternative Solution based on the evaluation.

4.4 Preferred Alternative Solution

The preferred alternative selected is Option 2 – Rock Protection with Pile Supported Walkway. Figure 4.3 shows the site plan for the preferred alternative. The rip rap berm will follow the existing shoreline in Berta Point. Steel H Piles or tube piles will be used to support a walkway within the rock protection. The piles are driven and anchored to bedrock. The walkway deck is supported on the piles. The walkway can be constructed of concrete, timber or steel grating. The choice of material will be determined during detailed design. The capital cost of the preferred alternative is estimated to be $450,000. The estimate includes the materials, equipment, and labour costs required for the rock protection and walkway. The cost estimate is

based on unit prices for recent similar projects in southern Ontario. The cost estimates do not include allowances for mobilization, demobilization, landscaping features, floating docks, contingency allowance, or taxes.

Implementation of the preferred alternative solution will need to consider further design changes and modifications to optimize the project and gain acceptance by the reviewing agencies, park users, and residents of Oakville.

4.4.1 Implementation of the Preferred Alternative Solution

4.4.2 Avoidance, Mitigation, Compensation, and Enhancement Measures

The implementation of this shore protection project has the potential to both positively and negatively affect the natural and physical environment. During the review of the protection alternatives by the team, agencies, and public, potential effects and mitigation measures for aspects of the environment as well as the technical and engineering effects were identified. The following provides a discussion of the mitigation measures and best management practices that will be employed to ensure that the negative impacts of the proposed shore protection project are minimized.

The preferred shoreline protection alternative has the potential to affect the natural environment; however, the effects will be minimal because the existing bank will be excavated to accommodate the shoreline protection. The proposed shore protection will enhance aquatic habitat by providing habitat diversity, niche spaces, and edge cover. The proposed work is not expected to affect terrestrial habitat in the long term. Some existing vegetation adjacent to the shoreline may be disturbed during construction. Landscape plans for the park should consider native plant species which encourage and support migratory birds.

Best Management Practices and measures will be implemented during construction to minimize the impact on the natural environment. These include:

- Timing construction to avoid conflicts with fish-spawning.
- Implementing sediment and erosion control techniques to contain sediment migration into Bronte Creek. Erosion control measures will be monitored regularly and properly maintained, as required.
- Installing and maintaining tree protection around trees not being removed.
- Operating and storing all material and equipment used for the purpose of constructing the shore protection works in a manner that prevents any deleterious substance from entering Bronte Creek.
- Stabilizing and re-vegetating all exposed soil areas upon completion of construction activities.
- Managing all excess materials generated by the project in an environmentally conscientious manner.

Construction of this project should consider minimizing disturbance of the upper bank park in Berta Point. Dredging operations for Bronte Creek are carried out from a barge staged from the lower parking lot in Berta Point near the project site. Marine construction would minimize the

impacts on the natural bank and minimize impacts on the park. Staging construction in the parking lot will impact Town residents who use this parking lot.

Construction of the rip rap berm is straight forward construction that can be completed in a short period of time. Once the berm is constructed the piles for the walkway would be installed within the berm. This work would be considered out of water work.

Each of the options considers a floating dock to maintain docking for the Bronte Harbour Yacht Club (BHYC) members that currently use this location. Team members met with BHYC as part of the consultation. BHYC recommended providing finger docks like those provided at the existing concrete block wall at Berta Point instead of a floating dock. This modification allows the boat to berth closer to shore increasing the navigation channel width used by the club. All options would include the removal of the existing steel staircase that is currently used to access the shoreline.

Decking types were reviewed to determine options that would have the least impact on the natural and physical environment. An open deck (steel grating or Thruflow decking) would be beneficial to reduce impacts of creek flooding and future maintenance costs.

Shoreline protection projects require review/approvals by Fisheries Oceans Canada (DFO), Transport Canada (TC), Ministry of Northern Development Mining Natural Resources and Forestry (MNDMNRF), Ministry of Environment Conservation Parks (MECP) and local agencies such as Conservation Halton (CH) under their acts and/or regulations.

DFO will review the project for impacts to fish and fish habitat under the Fisheries Act. Past dredging operations in Bronte Creek have required review by DFO under the Federal Species at Risk Act because of the species of concern (Silver Shiner). This project will likely require similar review.

TC has developed a list of designated works. Designated works are works that may proceed without Notice under the Navigation Protection Act as long as it complies with the Minor Works and Waters Order. This project would be considered a minor work and will not require review.

MNDMNRF will review the project under the Public Lands Act if the works are constructed on public lands. We understand the creek bottom in Bronte Harbour is owned by the Town and a work permit to construct on shorelands will not be required. The project will be submitted to MNDMNRF to confirm our understanding of ownership and the requirement for a work permit. MNDMNRF also provides in-water work timing windows for projects that include in-water work and a request for in-water work timing window will be made to them.

The project is in an area regulated by CH. Ontario Regulation 162/06 allows CH to grant permission for development. A permit will be required for this project.

Project specific conditions may be part of each agency's approval. These conditions must be implemented during construction as part of the approval or permit.

Table 4.1 Summary of Alternative Solutions

Criteria	Sub Criteria	Do Nothing	Option 1 Concrete Block Wall	**Option 2** **Rock Protection with Pile Supported Walkway** ***Preferred Alternative Solution***	Option 3 Steel Sheet Pile with Walkway	Option 4 Steel Sheet Pile with Cantilevered Walkway
Environmental Impacts	Aquatic Habitat	No Change	Improves fish habitat with rock berm.	**Improves fish habitat with rock berm.**	Deeper fish habitat area created with creek bottom excavation. No additional cracks voids, or niche spaces.	Deeper fish habitat created with creek bottom excavation. No additional cracks voids, or niche spaces.
	Terrestrial Habitat	No Change	Requires bank excavation and vegetation removal. Fill behind wall.	**Requires removal of vegetation for construction of rock berm.**	Requires vegetation removal. Fill behind wall.	Requires vegetation removal. Fill behind wall.
Constructability	Common Structure Type	Not Applicable	Yes	**Yes**	Yes	Yes
	Sloping Bedrock	Not Change	Challenging to construct on rock berm	**Minimal impact single piles**	Major impact continuous wall	Major impact continuous wall
	Construction from Shore or Water	Not Applicable	Both	**Both**	Water	Water
Other	Dredging	No Change	Limited by rock berm	**Limited by rock berm.**	Dredge adjacent to wall	Dredge adjacent to wall
	Maintains or Widens Creek for Navigation	Yes	Yes	**Yes**	Widened	Widened
	Estimated Lifespan	No design life	> 35 years	**> 35 years rock protection** **> 50 years walkway**	> 50 years	> 50 years
	Docking	Floating dock parallel to shore	Floating dock parallel to shore.	**Floating dock parallel to shore.**	Floating dock, boats can berth closer to wall.	Floating dock, boats can berth closer to wall.
	Access to Shoreline	No Change	Continuous access along shore.	**Continuous access along shore.**	Continuous access along shore.	Continuous access along shore.
	Improved Slope Stability/Erosion Reduction	No Change	Yes	**Yes**	Yes	Yes
Preliminary Cost		None	$420,000	**$450,000**	$700,000	$750,000

5.0 Agency and Public Consultation

During the environmental assessment, consultation with regulatory agencies and the public were undertaken. The purpose of the consultation process was to ensure that the interests and concerns of federal and provincial agencies as well as members of the public were addressed in the Environmental Assessment. The following consultation methods were utilized during the preparation of this Environmental Assessment:

- Letters were sent to review agencies, First Nations groups, stake holders, interested individuals, special interest groups, and potentially affected individuals or organizations to advise them of the EA commencement, project contacts, consultation events and the location of the Town website.
- Advertisements in local newspapers providing notice of commencement and public consultation events.
- Website updates advising of project, public consultation events, formal documentation and reports, and general project information.
- Two Online Public Information Centres were advertised in local newspapers, the Town website and direct mailings.
- Meetings with Conservation Halton and Halton Region to discuss relevant issues.

It was the intent of the consultation process that input from all interested or affected parties or individuals would be sought through a variety of means including verbal, written, and public meetings. An agency contact list was developed for this EA and is included in Appendix B.

Newspaper notices were issued in the Oakville Beaver as is the normal practice for environmental assessments in the Town of Oakville, ensuring coverage of the entire municipality.

The public open houses were an important component of the EA process as they gave interested stakeholders an opportunity to discuss the project details and ask questions both about the proposed undertaking and the EA process to gain a better understanding of the project.

By utilizing a combination of public open houses, written correspondence, newspaper notifications and publication of project materials on the municipal website, the Town engaged in a comprehensive consultation program ensuring that all residents and interested parties had an opportunity to participate in the EA process.

5.1 Notice of Commencement

Upon commencement of the Environmental Assessment, a Notice of Commencement was published in the Oakville Beaver. It was also published on the Town of Oakville website on September 30, 2020 and mailed to all of the contacts on the contact list. A copy of the Notice of Commencement and a sample letter are provided in Appendix B.

5.2 Public Open Houses

Notification of Public Information Centre (PIC) #1 was advertised in the Oakville Beaver on May 6, 2021. The notice was also published on the Town website, mailed to all the contacts on the contact list, and emailed to those on the contact list who had provided email addresses. The contact list included any individuals or organizations that expressed an interest in the study and requested to be added to the contact mailing list.

The first public open house was online between May 18 and June 1, 2021. A presentation was posted on the Town's website that presented the project. The presentation included a comment/questionnaire that could be completed online. A copy of the presentation and questionnaire are provided in Appendix B. Approximately 16 guests viewed the presentation and provided feedback. Attendees included people who lived in the study area and park users. 15 questionnaires were completed and are provided in Appendix B.

Table 5.1 provides a summary of the public's comments and the responses.

Although a second PIC is not required for a Schedule B project. Due to COVID-19 the project was delayed, and it was felt that a second PIC would ensure that local residents would be aware of the project and its development. The notice was published on the Town website, mailed to all the contacts on the contact list, and emailed to those on the contact list who had provided email addresses.

On July 16, 2021, a meeting with members of Bronte Harbour Yacht Club was held onsite. The meeting was to discuss the options proposed for the docking system.

A second online public open house was held online between December 8 and 22, 2021 The website included the evaluation of the alternatives and the preliminary preferred alternative. A copy of the presentation is provided in Appendix B. Overall, the public comments supported the shore protection project.

5.3 Agency Meeting and Comments

During the preparation of this Environmental Assessment, the project team met with Conservation Halton on September 9, 2020. This meeting was held to introduce and provide a general overview of the shoreline protection project. During the meeting the team discussed the existing information Conservation Halton had pertaining to the site's natural environment. Additionally, the town met with Halton Region twice, firstly on June 3, 2021 as well as on February 22, 2022.

5.4 Aboriginal Consultation

In preparation of this Environmental Assessment, the project team contacted Ministry of Heritage, Sport, Tourism and Cultural Services (MHSTCI), Ministry of Environment, Conservation and Parks (MECP), and Aboriginal Affairs and Northern Development Canada (AANDC) regarding established and potential Aboriginal and treaty rights in the vicinity of Berta Point Parks. MECP and MHSTCI provided response letters dated June 2, 2021 and June 6, 2021 respectively. MECP indicated the First Nations groups Mississaugas of the Credit First Nation, Six Nations of the Grand River (both Six Nations Elected Council and Haudenosaunee

Confederacy Chiefs Council), and the Huron Wendat Nation. These groups were contacted, and the Mississaugas of the Credit First Nation responded to the correspondence.

The contacts provided by for these groups were added to the consultation list and project information was sent to the contacts. A copy of the correspondence with the Mississaugas of the Credit First Nation is included in Appendix B.

Table 5.1 PIC 1 and 2 Comments

Summary of Comments		
Public Information Center #1 – May, 2021		
Name	Comment(s)	Response(s)
1. Stephanie Spares	Option 2 is also my preferred, after seeing the different designs. Question though, for all options: The report shows what happens in average and low water levels for Lake Ontario, however in the past few years, we have had above average water levels which have caused flooding in the harbour. As a sailor in Bronte and a resident, I'm wondering what impact the high waters would have on the proposed retaining walls as well as the ability for the docks to float above water in flooding situations.	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. All considerations for high water have been taken into account in this project. The elevations of the pile supported structure have been raised for high water and the floating docks will adjust to the water levels. We will notify you on future developments of this project.
2. Mike	If there is going to be a change to the area it should be left in its natural state as closely as possible Example - We frequently walk along all the great boardwalks and waterfront areas with our kids but what makes our experience perfect is we can still get right up to the water and explore the rocks and the waterfront in its natural form etc. and our kids get a fine balance of a nice finished waterfront while concurrently also getting to explore areas that remain in their natural form.	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We are trying to maintain the natural state of the area as possible. We will keep you notified on all future developments of this project.
3. John Wilkening	1. I am overall supportive of option 2 2. Please ensure this does not impede on existing green space and if possible enhances the green space. The area needs more grass and plants and less concrete and buildings. 3. If the access stairs are moved to Berta Point, could the small gravel parking area just south of Lakeshore be converted into green space? It is an eyesore and it is only accessible to yacht club members so it provides no public benefit. It would truly serve the public better as a open grassy area rather than its current use as a private parking lot not open to the public. 4. Please remember that people live here 12 months a year while boaters are seasonal. The wants/needs of the boaters/yacht club should not come before those who live in the area and call it home.	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We are maintaining all parking in the area as possible as the area is deficient in public parking. We are also reviewing greenspace areas and will make enhancements as required. We will keep you notified on all future developments of this project.
4. Dawn McKinnon	Hello. While I am inclined to agree Option 2 is the preferred shoreline improvement option, it would have been helpful to review an analysis and evaluation of alternatives panel, which is typically included at a PIC, to compare the alternatives to one another. Panel 21 correction: it's the Ministry of Environment, Conservation and Parks (MECP) - as opposed to Ministry of Environmental Conservation and Parks Thanks very much for the opportunity to comment.	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We will keep you notified on all future developments of this project.

5. Philip Habib	Outdoor Music Amphitheatre/theatre?	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We will keep you notified on all future developments of this project.
6. Theresa O'Connor	I like Option 2. Not over-engineered. Meets the need of boaters and provides fish habitat.	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We will keep you notified on all future developments of this project.
7. Mary Johannesson (BHYC Commodore)	BHYC would like to keep using the parking lot directly west of the subject area and maintain pathway access to the docks. BHYC would prefer to have direct access from the new wall to the boats, similar to the rest of the Berta Point wall areas. i.e. remove the floating dock if possible. The boats require ~2' of draft under the tip of the bow, and ~5' draft at a point 10' aft of the bow tip.	We will not be able to maintain the current pathway to the docks. The existing pathway and stairs do not comply to Town standards for accessibility requirements. In order to install a pathway to this standard, we would need to install a pathway with switchbacks due to the elevation difference. This option would eliminate all the trees on the slope and will not be supported by Conservation Halton. We will still maintain the parking lot directly west of the area. We would be happy to discuss access to your boats from the platform and eliminating the floating dock. The only issue with this option is that in low water conditions the access to the boats could be a challenge.
8. Henry Grudzien	I would like updates of possibly improvements	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We will keep you notified on all future developments of this project.
9. Adam Dallaire	As someone who kayaks through this area, the space to kayak is wide enough as is. The dredging should be limited to avoid impacting the fish in the area. Boats should not be set closer to the shore. It would be interesting to tie into the current walking paths to provide better flow as it is currently disconnected	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We will take your comments into consideration.
10. Chris Stephens	Hi, Whatever route you choose, I hope every attempt is made to preserve as many of the mature trees as possible in the area under question. As a Bronte resident, boater, and marina user this spot is pretty idyllic. Removing many of the trees and replacing it with an industrial-looking wall will do nothing to enhance the pleasure of being in that area, and, if I'm not mistaken, trees are a very effective at erosion mitigation, especially on slopes. Thank you.	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We will minimize any tree removal as much as possible. We will keep you notified on all future developments of this project.
11. Melissa Boote	I agree that the preliminary choice of option 2 makes the most sense. Losing fish habitat simply to make dredging easier makes no sense.	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We will take your comments into consideration.
12. Susan Sproule	We currently rent a slip on this dock. I have two major issues with any of the options. 1. Parking	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project.

	You plan does not address parking. There is not enough parking in the Berta Point lot currently and there will definitely not be enough parking if you add requirements for an additional 18 more moorings. We currently have six permit parking spots on West River Street. On race nights and weekends we often have up to 12 vehicles (double-parked) in this lot. Where will we park in the new configuration? 2. Fairway There can be no reduction in the width of the fairway between the boats on the West bank dock and the east seawall and docks. It is very narrow and we have had damage to our boat from large boats trying to navigate this narrow space. Yesterday, the police boat brought in a disabled sailboat and they had just inches of clearance to get through the narrowest part of the channel.	We will review your comments on parking needs and fairway spacing. We will keep you notified on all future developments of this project.
13. Dennis Giokas	I think for the extra cost and value to the creek, options 3 or 4 are best (the ones with steel sheet pile walls). Dredging flexibility is needed for boaters along with the extra width afforded. Also, it is not just about boat traffic in that area. The creek is getting a lot of use by paddle boarders and kayakers. This area is at the BHYC launch point and just upstream from the town launch point for those users. Boaters are already challenged navigating to and from their slips with the paddlers on the creek. We want to accommodate and encourage more use of the creek by paddlers. My preferred options are best for all the uses of boaters and paddlers. The other two options fall short.	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We will take your comments into consideration. We will keep you notified on all future developments of this project.
14. Robbert Borst	Options 3 and 4 are preferred as they do not impede boat traffic in that part of the inner harbour which is already restricted by boats docking on the west wall, operations of a sailing school on the east wall and increasing traffic of small power craft, kayaks and paddleboards. The increased traffic is becoming a safety issue and narrowing the channel with a seawall will only make it worse. Thank you	Thank you for taking the time on providing comments towards the Berta Point West Bank Shoreline Improvement project. We will take your comments into consideration. We will keep you notified on all future developments of this project.
Public Information Center #2 – December, 2021		
Name	Comment(s)	Response(s)
1. Richard Murray (BHYC)	• The study identifies the objective to keep the maximum width of the channel – agreeable. With Option 2, consider the arrangement like other areas of the inner harbour where the boy of the boat is against the rigid wall. Consider ‘wedge’ platforms (height adjustable?). • For the BHYC parking area (shown as ‘A’), maintain relatively direct access from the dock area to the parking lot/Lakeshore Rd. Parking in area ‘A’ and walking around to the Berta Point Marina lot along the rigid wall is a long way around. • For the Launch Slip (shown as ‘B’) – BHYC would like to fill this in. Could the EA for Berta Point West Bank Seawall Improvement consider the impact of the launch slip being filled in? Could the town consider filling this slip as part of the scope for seawall improvement project? It would be most efficient for the seawall improvement project to take a holistic approach and include the launch dock fill.	• Once we progress into detailed design the Town will review the platforms with BHYC. • As shown on the proposed drawings, the existing parking lot will remain, but the current walkway will be eliminated and access will be from the Berta Point parking lot. We can propose a dedicated short term (20 mins. Max) parking space for loading and unloading. • The current EA deals with the west bank of Berta Point only. With regards to your question, this item will be better coordinated when the Town replaces the seawall along the north edge of Bronte Creek. An EA is not required for this work as we would be replacing and existing structure. We can review your operational request

		at that time. We anticipate design development of the north seawall to begin in 2023 and subject to Council approval of the required funds.
2. Paul Mailer	• The description of Options 1 and 2 indicates "Floating dock parallel to shore", while for Options 3 and 4 the description is "Floating dock, boats can berth closer to wall." It is not clear from the illustrations how the design for the Options 1 and 2 differs from 3 and 4 with respect to the location or design of the floating dock. • Would the floating dock be surfaced with wood or steel grating? • How would connections be achieved with adjacent walkways along the waters edge to the north and south? I assume it is intended to connect the new dock with the existing pathways to the north and south, but none of the options show how this would be done. • None of the options appear to show the existing stairs being maintained, or where any alternative access from the upper parking lot to the West Bank might be provided. I would submit that a proposal which removes this stairway connection without providing any alternative would make access to the dock more difficult for its main group of users who moor their boats there. • Would the existing parking spaces adjacent to the West Bank be retained? • What is the extent of trees which would be removed as part of the project? The document is unclear in defining the extent of tree removal which would be necessary, or in describing whether or how the options would differ in the extent of tree removal required. • Concern relating to the decreased access to the dock from the existing parking area for club members immediately adjacent. • Concern relating to timing i.e. whether the work can all be completed in the off-season.	• All the above points responded to in a phone call in January, 2022. • Thank you for reaching out to us and we have added you to our future mailing list. To answer your questions below, the existing access to the dock down the slope is proposed to be removed. This current access is non-compliant to municipal standards and in order to make it compliant, we would need to remove a number of trees on the slope. The removal of additional trees along the bank is not supported by Conservation Halton. Secondly, the work is proposed to be completed in the off-season from late October to April.
3. Susan Sproule & Ron Barr	• We also have a sailboat on the affected dock. We enjoy the natural surroundings of the current design. We have observed great blue herons, beavers and otters along the existing bank. I am afraid that the loss of the small trees, shade and other vegetation on the bank will reduce the habitat available to these creatures; the	• The current proposal saves many of the trees along the bank and the proposed boulder berm shoreline protection provides additional aquatic habitat features and is a better environmental proposal than the current eroding shoreline condition.

	proposal will certainly change our experience on these docks. I find it hard to believe that this is an environmentally friendly proposal.	
	• How will the floating dock be accessed from the walkway?	• The floating docks will be accessed from a ramp onto a new deck from Berta Point.
	• With the addition of the adjacent walkway, will there be any security features (gates, signs, cameras, etc.) to prevent access to the dock?	• The Town is currently reviewing options of gates, signs and cameras with this proposal. We will review and discuss possible-options with BHYC.
	• How will the walkway and floating dock be accessed from our current parking spaces on West River Street?	• The current concrete walkway is not built to any standards and is not compliant to accessibility standards. The current walkway will be removed and the slope rehabilitated with additional native vegetation. The docks will be accessed as noted in your first question above. The current parking lot on West River St. will remain as is.
	• What is the traction of the metal decking compared to wood under different conditions? When bringing a boat into the dock, crew must jump off onto the dock in order to secure the lines. **Slips and falls can easily lead to injury.**	• The metal decking or Thruflow (plastic decking) has more traction then the current wood deck.
	• Because of the Mediterranean-style moorings, many of the boat owners provide steps to facilitate access their boats. These steps can be easily secured to a wooden dock. It is not clear what could be done to secure steps if the docks are constructed with the illustrated metal products. **This is an accessibility issue, especially for older boaters and for children.**	• We will review decking and potential steps with the BHYC as we get into the detailed design phase of the project.

References

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OP, 2021. Livable Oakville Town of Oakville Official Plan 2009 Office Consolidation August 31, 2021

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Shoreplan, 2021, Shoreline Assessment Restoration and Protection Study Oakville Harbours. Prepared for the Town of Oakville, April, 2021.

Terraprobe, 2021, Geotechnical Investigation: Seawall and Walkway Construction Berta Point, West Bank Bronte Inner Harbour Oakville, Ontario, File No. 1-17-0069-02. Prepared for the Town of Oakville, February 24, 2021.

Appendix B

Agency Contact List

Organization	Department	Organization	Title	Salutation	First Name	Last Name	Address	City	rovinc	Postal Code	Telephone	Fax	Email	Position
Federal	Southern Ontario District - Burlington Office	Fisheries and Oceans Canada		Mr.	Brent	Valere	304-3027 Harvester Road, P.O. Box 85060	Burlington	ON	L7R 4K3	905-336-4914		brent.valere@dfo-mpo.gc.ca	Senior Fisheries Protection Program Biologist
Provincial	**MOECC Central Regional Office**	**MOECC**											eanotification.cregion@ontario.ca	
Provincial	Indigenous Relations and Programs Division	Ministry of Indigenous Affairs		Ms.	Heather	Levecque	720 Bay Street, 4th Floor	Toronto	ON	M5G 2K1			heather.levecque@ontario.ca	Director,
Provincial	Negotiations and Reconciliation Division	Ministry of Indigenous Affairs		Ms.	Wendy	Fischer	160 Bloor St E, 9th Floor	Toronto	ON	M7A 2E6	416-278-0725		wendy.fischer@ontario.ca	Deputy Director - Negotiations, Negotiations Branch
Provincial	Legal Services	Ministry of Transportation		Ms.	Mary	Gersht	1201 Wilson Avenue, Building B, 1st Floor	Toronto	ON	M3M 1J8			mary.gersht@ontario.ca	Director
Provincial	Negotiations and Reconciliation Division	Ministry of Indigenous Affairs		Sir / Madam	Karma	Call	160 Bloor St E., 4th Floor	Toronto	ON	M7A 2E6			karma.call@ontario.ca	Deputy Director/Land Claims Research
Provincial	Environmental Management	Ministry of Infrastructure		Ms.	Lisa	Myslicki	1 Dundas Street West, Suite 2000	Toronto	ON	M5G 2L5	416-212-3768		lisa.myslicki@infrastructureontario.ca	Environmental Advisor
Provincial	Development Planning	Ministry of Infrastructure		Mr.	Geoff	Woods	1 Dundas Street West, Suite 2000	Toronto	ON	M5G 2L5	416-326-9823		geoff.woods@infrastructureontario.ca	Services Senior Project Manager
Provincial	Environmental and Land Use Policy	Ministry of Agriculture, Food and Rural Affairs			Anneleis	Eckert	6484 Wellington Road 7	Elora	ON	N0B 1S0	519-827-6040		anneleis.eckert@ontario.ca	Rural Planner
Provincial		Conservation Halton		Ms.	Laura	Schreiner	2596 Britannia Road West	Burlington	ON	L7P 0G3	905-336-1158 x2258		lschreiner@hrca.on.ca	Environmental Planner
		Conservation Halton		Ms.	Chitra	Gowda	2596 Britannia Road West	Burlington	ON	L7P 0G3	289-681-8697		cgowda@hrca.on.ca	Senior Manager, Watershed Planning and Source Protection
Provincial	Cultural Services Unit, Program and Services Branch	Ministry of Tourism, Culture and Sport		Ms.	Karla	Barboza	401 Bay Street, Suite 1700	Toronto	ON	M7A 0A7			karla.barboza@ontario.ca	Team Lead, Heritage Planning unit
Provincial	Legal Services	Ministry of Natural Resources and Forestry		Ms.	Diane	Zimnica	Whitney Block Rm 3420, 99 Wellesley St W	Toronto	ON	M7A 1W3	416-314-5173		diane.zimnica@ontario.ca	Director
Provincial	Aurora District Office	Ministry of Natural Resources and Forestry		Mr	Dan	Thompson	2284 Nursury Road	Midhurst	ON	L9X 1N8	226-974-5882		dan.l.thompsom@ontario.ca	District Manager (Acting)
Provincial	Aurora District Office	Ministry of Natural Resources and Forestry		Ms	Maria	Jawaid	50 Bloomington Rd	Aurora	ON	L4G 0L8	289-380-6817		maria.jawaid@ontario.ca	District Planner
Other		Trout Unlimited Canada			Kristin	Wazbinski	50 Stone Road East, Axelrod Building, Room 270						kwazbins@gmail.com	Ted Knott Chapter President
Regional	Natural Heritage Advisory Committee	Halton Region		Ms.	Gena	Ali	1151 Bronte Road	Oakville	ON	L6M 3L1	905-825-6000 Ext. 7865		gena.ali@halton.ca	Manager, Sustainable Planning and Climate Change
Regional	Halton Regional Forest Stewardship Advisory Committee	Halton Region		Mr.	Ron	Reinholt	1151 Bronte Road	Oakville	ON	L6M 3L1	905-825-6000		ron.reinholt@halton.ca	Regional Forester
Regional	Public Works	Halton Region		Mr.	Jim	Harnum	1151 Bronte Road	Oakville	ON	L6M 3L1	905-825-6000 ext. 7699		jim.harnum@halton.ca	Commissioner of Public Works
Regional	Public Works	Halton Region		Mr	Melissa	Green Battiston	1151 Bronte Road	Oakville	ON	L6M 3L1	905-825-6000 ext. 7601		melissa.green-battiston@halton.ca	Manager of Water Planning Services
Regional	Public Works	Halton Region		Mr.	Adam	Gilmore	1151 Bronte Road	Oakville	ON	L6M 3L2	905-825-6000 ext. 7134		adam.gilmore@halton.ca	Supervisor, water & Wastewater Planning
Regional	Halton Ecological and Environmental Advisory Committee (EEAC)	Halton Region		Mr.	Richard	Clark	1151 Bronte Road	Oakville	ON	L6M 3L1	905-825-6000 Ext. 7214		richard.clark@halton.ca	Senior Planner - Environmental
Conservation Halton	Conservation Halton				Charles	Priddle							cpriddle@hrca.on.ca	Senior Permit Coordinator.
Regional	Infrastructure Planning & Policy	Halton Region		Mr.	Christopher	Pasquale		Oakville	on		x3521		christopher.pasquale@halton.ca	Project Manager II

Organization	Letter Type	Department	Organization	Salutation	First Name	Last Name	Address	City	Province	Postal Code	Telephone	Fax	Email	Position
First Nations and Aboriginal	Aboriginal		Metis Nations of Ontario				500 Old St Patrick St., Unit 3	Ottawa	ON	K1N 9G4	613-798-1488	613-722-4225	consultations@metisnation.org	
First Nations and Aboriginal	Aboriginal		Haudenosaunee Confederacy Council, C/O Haudenosaunee Development Institute	Sir:	Hazel	Hill	16 Sunrise Court, Suite 407 PO Box714	Ohsweken	ON	N0A 1M0	519-445-4222	519-445-2389	hdi2@bellnet.ca	
First Nations and Aboriginal	Aboriginal	Consultation Mgr	Mississaugas of the New Credit First Nation	Madam:	Fawn	Sault	2789 Mississauga Rd., R.R. #6	Hagersville ON	ON	N0A 1H0			fawn.sault@mncfn.ca	Consultation Manager
First Nations and Aboriginal	Aboriginal		Six Nations of Grand River Territory	Mark Hill			P.O. Box 5000	Ohsweken	ON	N0A 1M0			markhill@sixnations.ca	Chief
First Nations and Aboriginal	Aboriginal		Alderville First Nation		Dave	Simpson	P.O. Box 46, 11696 Second Line Rd	Alderville	ON	K0K 2X0	905-352-2011	905-352-3242	consultation@alderville.ca	Consultation Coordinator
First Nations and Aboriginal	Aboriginal	Consultation Unit	Ministry of Indigenous Affairs		Kaisha	Bruetsch	160 Bloor Street East, Suite 400	Toronto	ON	M7A 2E6	416-561-5877		kaisha.bruetsch@ontario.ca	
First Nations and Aboriginal	Aboriginal		Association of Iroquois and Allied Indians		Geoff	Stonefish	387 Princess Avenue	London ON	ON	N6B 2A7			gstonefish@aiai.on.ca	Office Manager
First Nations and Aboriginal	Aboriginal		Chiefs of Ontario Office		Tracy	Antone	468 Queen St E, Suite 400	Toronto ON	ON	M5A 1T7			tracy@coo.org	Chief Operation Officer
First Nations and Aboriginal	Aboriginal		Credit River Métis Council (Métis Nation of Ontario)		Darlene	Lent	350 Rutherford Road, South Plaza II, Suite 3	Brampton	ON	L6W 4N6			dlent@rogers.com	President
First Nations and Aboriginal	Aboriginal		Williams Treaty First Nations		Karry	Sandy McKenzie	8 Creswick Court	Barrie	ON	L4M 2J7			inquiries@williamstreatiesfirstnations.ca	
First Nations and Aboriginal	Aboriginal		Peel Aboriginal Network		Kairus	Skye	208 Britannia Road East Unit 3A	Mississauga	ON	L4z 1S6			ed@theindigenousnetwork.com	Executive Director
First Nations and Aboriginal	Aboriginal		Union of Ontario Indians				Union of Ontario Indians	Sirs:			PO Box 711	North Bay	info@anishinabek.ca	
First Nations and Aboriginal	Aboriginal	Consultation & Accommodation Unit	Crown-Indigenous Relations and Northern Affairs Canada				10 Wellington Street , 5H- 5th Floor	Gatineau	QC	K1A 0H4			aadnc.infopubs.aandc@canada.ca	Separate email and letter sent

Type	Name	First	Last	Email	Phone #	Comment
Resident Association	Bronte Village Resident Association	Shelley	Thornborrow	brontevillageresidents@gmail.com		
Boat Club	Bronte Harbour Yacht Club			commodore@bhyc.on.ca	905-827-6437	
Boat Club	Association of Oakville Harbours Stakehol	Chris	Bishop	chris.bishop@sympatico.ca		
BIA	Bronte BIA	Maureen	Healey	info@brontevillage.net		Executive Director.
Ward 1 Councillor	Sean O'Meara	Sean	O'Meara	sean.o'meara@oakville.ca		Separate notice sent.
Ward 1 Councillor	Beth Robertson	Beth	Robertson	beth.robertson@oakville.ca		Separate notice sent.
Mayor	Rob Burton	Rob	Burton	mayorrobburtaon@oakville.ca		
Bronte Boaters	Amy Johnson	Amy	Johnson	amy.johnson@oakville.ca		Email Amy to send notices to all boaters in Bronte.
Oakville Green	Oakville Green	Karen	Brock	president@oakvillegreen.org		
Boat Club	Bronte Harbour Yacht Club	Richard	Murray	vicecom@bhyc.on.ca		Main contact for the club on this project. Email from Mary Johannesson.

Notice of Commencement

To be the most livable town in Canada.

Notice of Study Commencement

Berta Point West Bank Seawall Improvements
Bronte Inner Harbour
Municipal Class Environmental Assessment Study

The shoreline protection at Berta Point along the shoreline of Bronte Creek is in poor condition. The Town of Oakville is considering alternatives for shoreline improvements. The purpose of this project is to provide shoreline improvements that provide shore stability, an overall enhancement of the environmental conditions and improved public access to the shoreline. The Town of Oakville is therefore considering ways and means of achieving this goal and has initiated a Municipal Class Environmental Assessment (EA).

The study is being carried out in accordance with the requirements of a Schedule B project as outlined in the Municipal Engineers Association (MEA) Municipal Class EA document (October 2000, as amended in 2015), which is an approved process under the *Ontario Environmental Assessment Act.* The EA process includes public and agency consultation, an evaluation of alternative solutions, an assessment of the potential environmental effects of the alternative solutions, selection of the preferred solution and identification of reasonable measures to mitigate any adverse impacts.

A key component of the study will involve consultation with interested stakeholders, the public and regulatory agencies. You are encouraged to provide your comments so that they may be incorporated into the plan and design of this project. Please contact either one of the following project representatives if you would like further information on the project, if you have any questions or comments, or if you would like to be added to the study mailing list.

Rakesh Mistry, OALA, CSLA
Town of Oakville,
1225 Trafalgar Road
Oakville, Ontario L6H 0H3
Phone: 905.845.6601 Ext. 3664
Fax: 905.338.4414
Email: rakesh.mistry@oakville.ca

Jane Graham, P. Eng.
Shoreplan Engineering Limited
20 Holly Street, Suite 202
Toronto, Ontario M4S 3B1
Phone: 416.487.4756 Ext. 223
Fax: 416.487.5129
Email: jgraham@shoreplan.com

Information related to the study and consultation process will also be posted on the Town of Oakville's website at: **http://www.oakville.ca/environment/XXXXXX**

Comments are collected under the authority of the *Environmental Assessment Act* for the purpose public consultation and will become part of the public record. Any personal information accompanying comments will be safeguarded in accordance with the *Municipal Freedom of Information and Protection of Privacy Act.* If you have any questions regarding this collection of information please contact Rakesh Mistry, at 905.845.6601 Ext. 3664 or at rakesh.mistry@oakville.ca

This Notice first issued on XXX XX, 2020

OAKVILLE

May 7, 2021

RE: Notice of Study Commencement
Municipal Class Environmental Assessment Study
Berta Point West Bank Shoreline Improvements, Oakville ON

Dear Sir/Madam;

The shoreline protection at Berta Point along the shoreline of Bronte Creek is in poor condition. The Town of Oakville is considering alternatives for shoreline improvements. The purpose of this project is to provide shoreline improvements that provide shore stability, an overall enhancement of the environmental conditions and improved public access to the shoreline. The Town of Oakville is therefore considering ways and means of achieving this goal and has initiated a Municipal Class Environmental Assessment (EA).

The study is being carried out in accordance with the requirements of a Schedule B project as outlined in the Municipal Engineers Association (MEA) Municipal Class EA document (October 2000, as amended in 2015), which is an approved process under the Ontario Environmental Assessment Act. The EA process includes public and agency consultation, an evaluation of alternative solutions, an assessment of the potential environmental effects of the alternative solutions, selection of the preferred solution and identification of reasonable measures to mitigate any adverse impacts. The approximate study area is shown on the attached map.

A key component of the study will involve consultation with interested stakeholders, the public and regulatory agencies. You are encouraged to provide your comments so that they may be incorporated into the planning of this project.

Should you decide that you do not want to receive any further notifications regarding this study, please advise the undersigned in writing or by email.

If you would like to obtain further information on the project, or if you have any questions, please contact one of the following project representatives.

Rakesh Mistry, OALA, CSLA
Town of Oakville,
1225 Trafalgar Road
Oakville, Ontario L6H 0H3
Email: rakesh.mistry@oakville.ca

Jane Graham, P. Eng.
Shoreplan Engineering Limited
20 Holly Street, Suite 202
Toronto, Ontario M4S 3B1
Email: jgraham@shoreplan.com

Information related to the study and consultation process will also be posted on May 18th, 2021 on the Town of Oakville's website at:

https://www.oakville.ca/culturerec/berta-point-west-bank-seawall-improvements.html

Yours truly,

Rakesh Mistry, OALA, CSLA
Waterfront Development Coordinator

c: Chris Mark, Director, Parks & Open Space, Town of Oakville
Jane Graham P.Eng, Shoreplan Engineering


Lakeshore Rd W.
Bronte Rd.
West River St.
Study Area
Bronte Creek
Town of Oakville

PIC 1 Presentation, Sample Questionnaire and Feedback

Berta Point West Bank

Study Area


BRONTE HARBOUR
YACHT CLUB
BRONTE CREEK
LAKESHORE ROAD
PROJECT AREA
BERTA POINT
TRAIL
WEST RIVER STREET

Project Objectives

- High water levels in Lake Ontario during 2017, 2019, and 2020 led erosion along many shorelines including Berta Point.
- Berta Point West Bank shoreline protection is in poor condition. The Town of Oakville is considering options for shoreline improvements.
- The purpose of this project is to provide shoreline improvements that create shore stability, an overall enhancement of the terrestrial and aquatic conditions and improved public access along the shoreline.
- The Town of Oakville is considering ways and means of achieving this goal and has initiated a Schedule B Municipal Class Environmental Assessment (EA).
- Shoreplan was retained to develop solutions and implement the project

View looking south along the bank.

Project Timeline & Scope

Stages & Scope are as follows:

1) Site Investigation

- ☑ Site investigations and site visit to review and assess existing conditions

2) Identify Data Gaps

- ☑ Identify site requirements

3) Alternative Solutions

- ☑ Identify data gap
- ☑ Develop alternative design solutions

4) Information Session

- ☐ First public information session
- ☐ Selection preferred option

5) Detailed Design & Permits

- ☐ Detailed design
- ☐ Second public information session (September 2021)
- ☐ Permitting and agency review

6) Project Tender

- ☐ Project to tender

7) Construction

- ☐ Construction (Fall 2022)

Existing Site Conditions

- Berta Point West Bank located on Bronte Creek within Bronte Inner Harbour
  - Bronte Inner Habour shorelines protected by concrete block and steel sheet pile walls
  - West bank (study site) has 75m of steep bank with substandard protection of mixed concrete rubble and stone below the average water line.
  - Upper bank consists of bedrock and overburden
  - Lakeshore Road Bridge to north is protected with gabion baskets and rock protection
  - Berta Point to east is protected with stacked concrete block walls capped with interlocking walkway along shoreline
  - High water levels in 2017 and 2019 eroded upper slopes of bank above water line.

View looking north along the bank.

Recreational Facilities

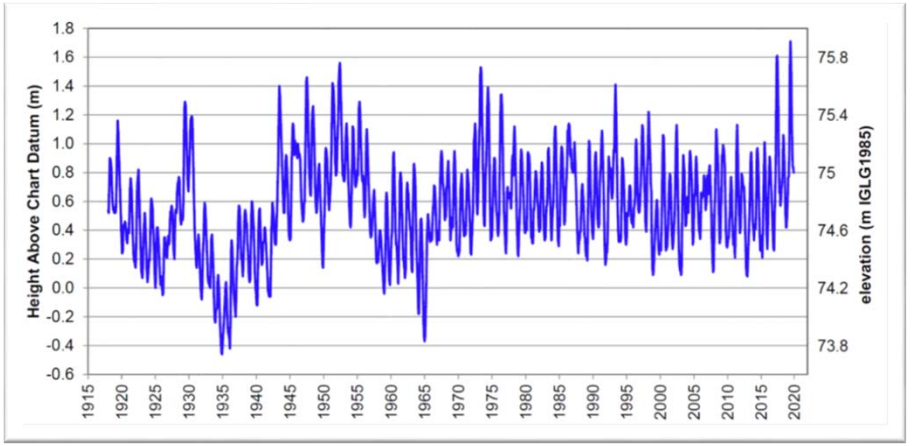
- Waterfront trail runs under Lakeshore Road Bridge into upper park
- Bronte Habour Yacht Club members tie off along a shore parallel floating dock at West Bank
- Access stairs lead down the bank to a gangway and seasonal docking
- No walkway connection along Berta Point to the floating dock or trail under bridge

View looking north.

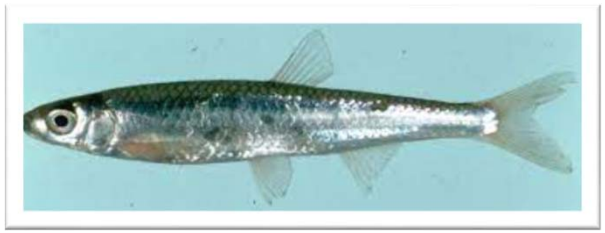
Site Assessments & Studies

Assessments Completed to Date:

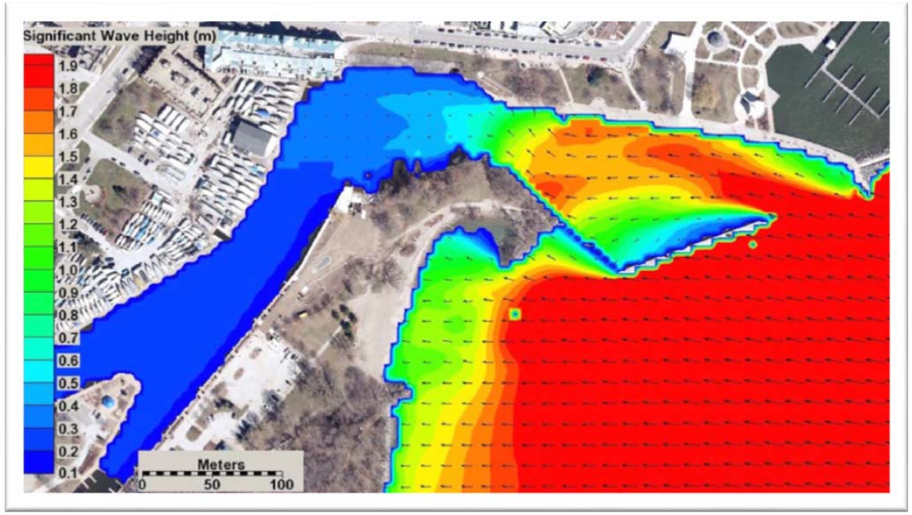
- Coastal Assessment
  - Water levels
  - Flow/Wave Conditions
- Geotechnical Investigation
- Tree Inventory
- Fish and Aquatic Habitat Assessment
  - Species at Risk Identified: Silver Shiner (Threatened) with critical habitat in Bronte Creek.



Lake Ontario Mean Monthly Water Levels 1918-2019

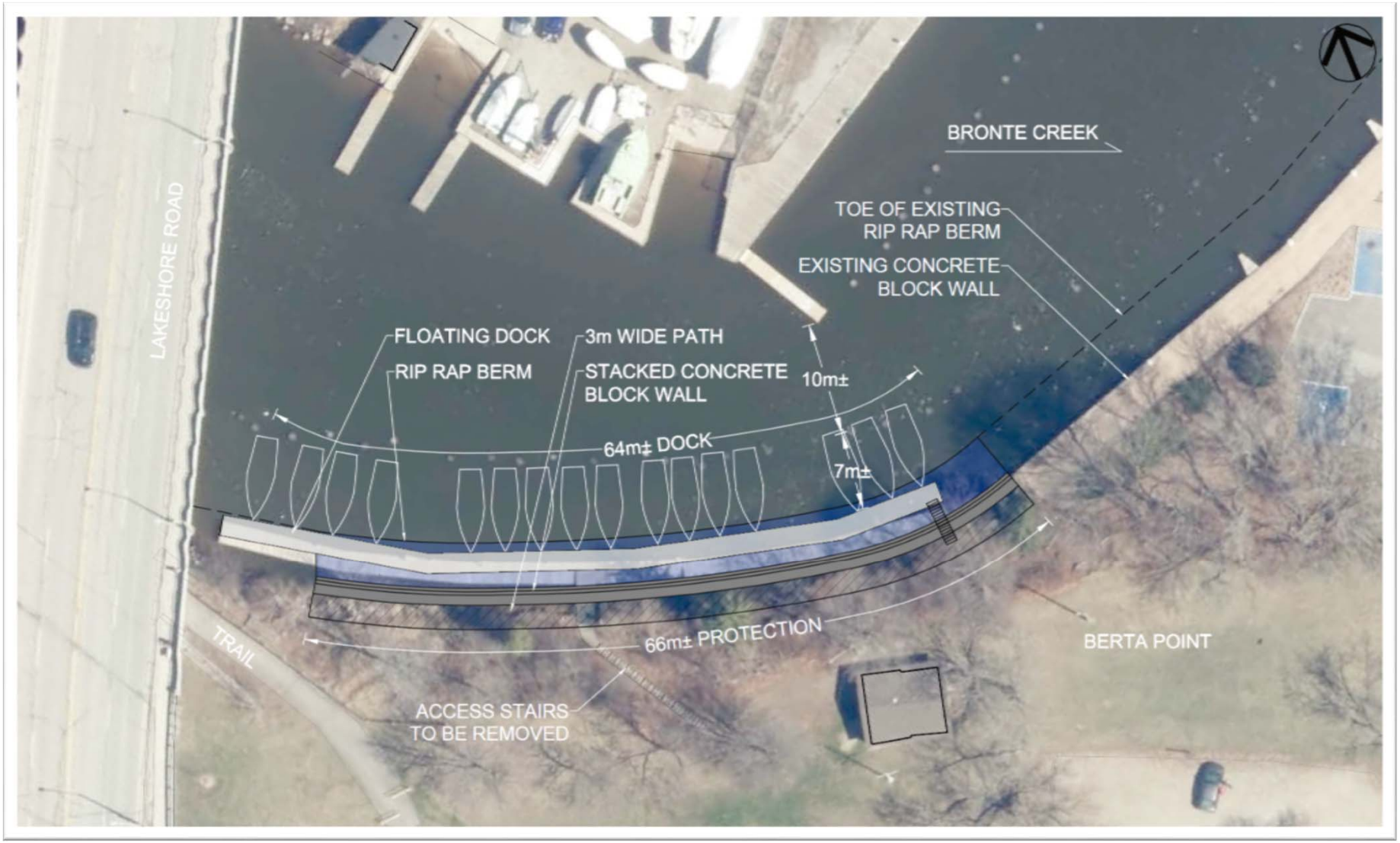


Silver Shiner



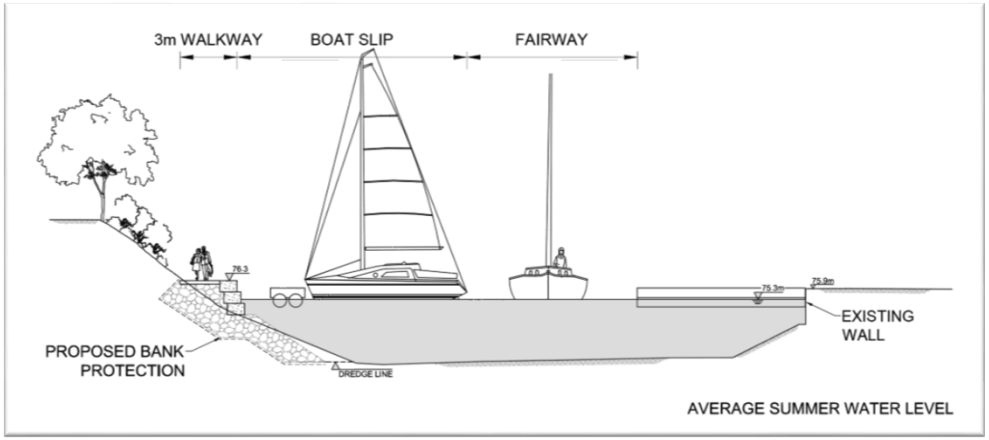
20 Year East Wave at 100 Year Water Level

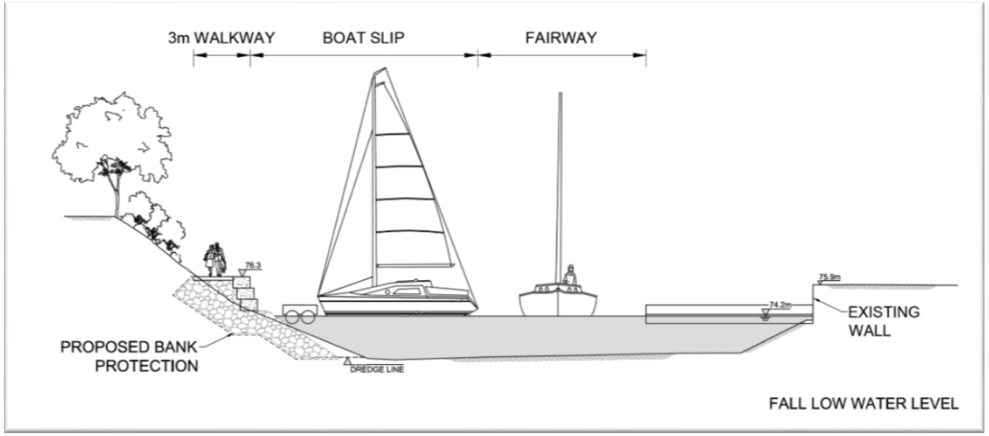
Option 1 Concrete Block Wall



Option 1 Concrete Block Wall

- Concrete block wall supported on rip rap berm
- Floating main dock along shoreline
- Access to shoreline through Berta Point

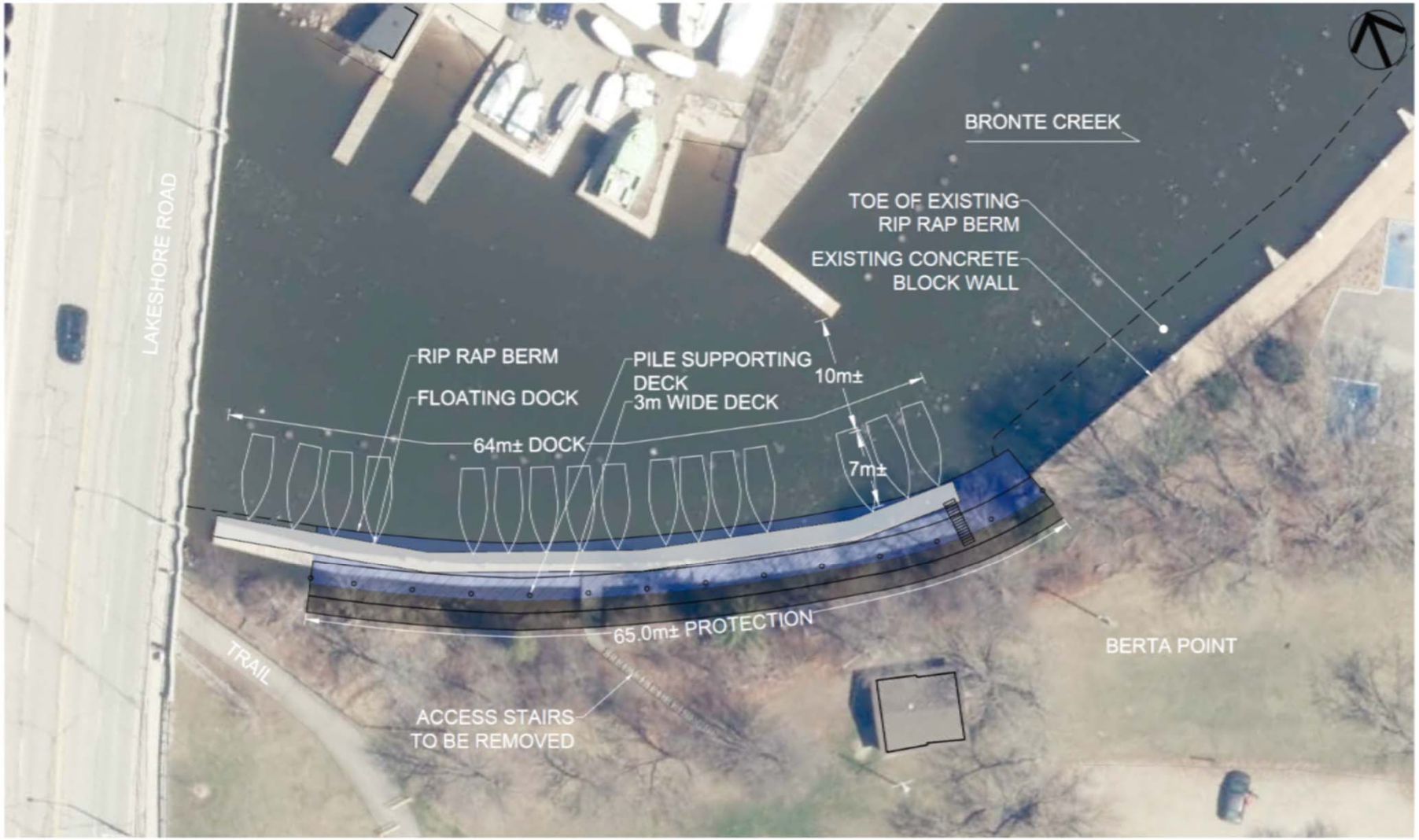




Option 1 Concrete Block Wall

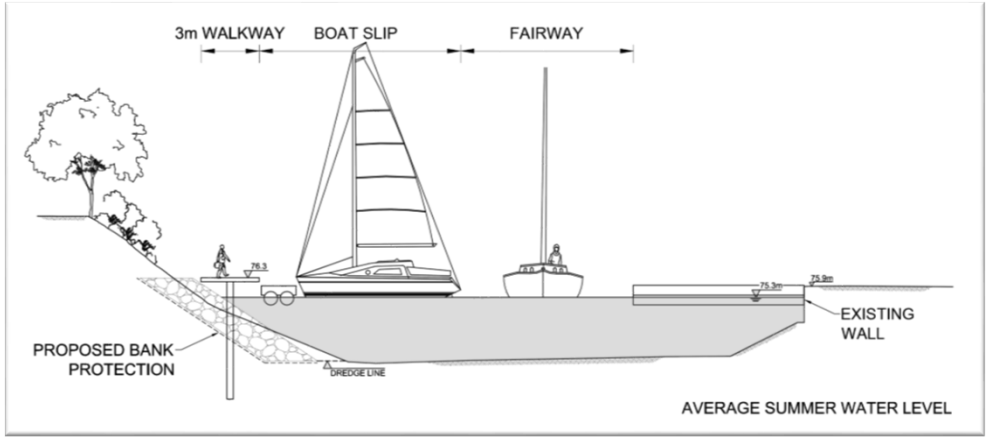
Description	Concrete block wall supported on rip rap berm
Meets Objective	Provides shoreline protection Provides continuous access along the shoreline
Estimated Price	$420,000 (not including dock, landscaping or contingency allowance)
Environmental Impacts	• Structure reduces the width of creek above average water levels, may impact boat traffic • Requires bank excavation and removal of vegetation • Rock berm improves fish habitat (crevices, voids, niche spaces)
Constructability	• Excavation and placement of materials from land using traditional equipment • Well understood construction • Similar to other shore protection in harbour
Other Notes	• Future dredging operations restricted by rock slope • Maintains navigation width (fairway) between moored boats and north wall • Floating dock parallel to shoreline for berthing boats • Access ramp to dock at Berta Point. No access from west bank • Estimated lifespan greater than 35 years

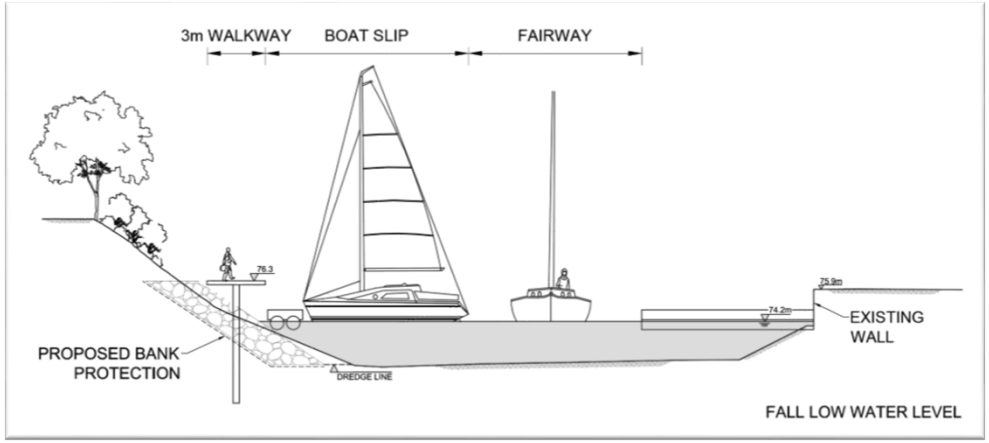
Option 2 Rock Protection with Pile Supported Walkway



Option 2 Rock Protection with Pile Supported Walkway

- Rip rap berm protecting bank
- Pile supported walkway along shoreline within rock slope
- Floating main dock along shoreline
- Access to shoreline through Berta Point

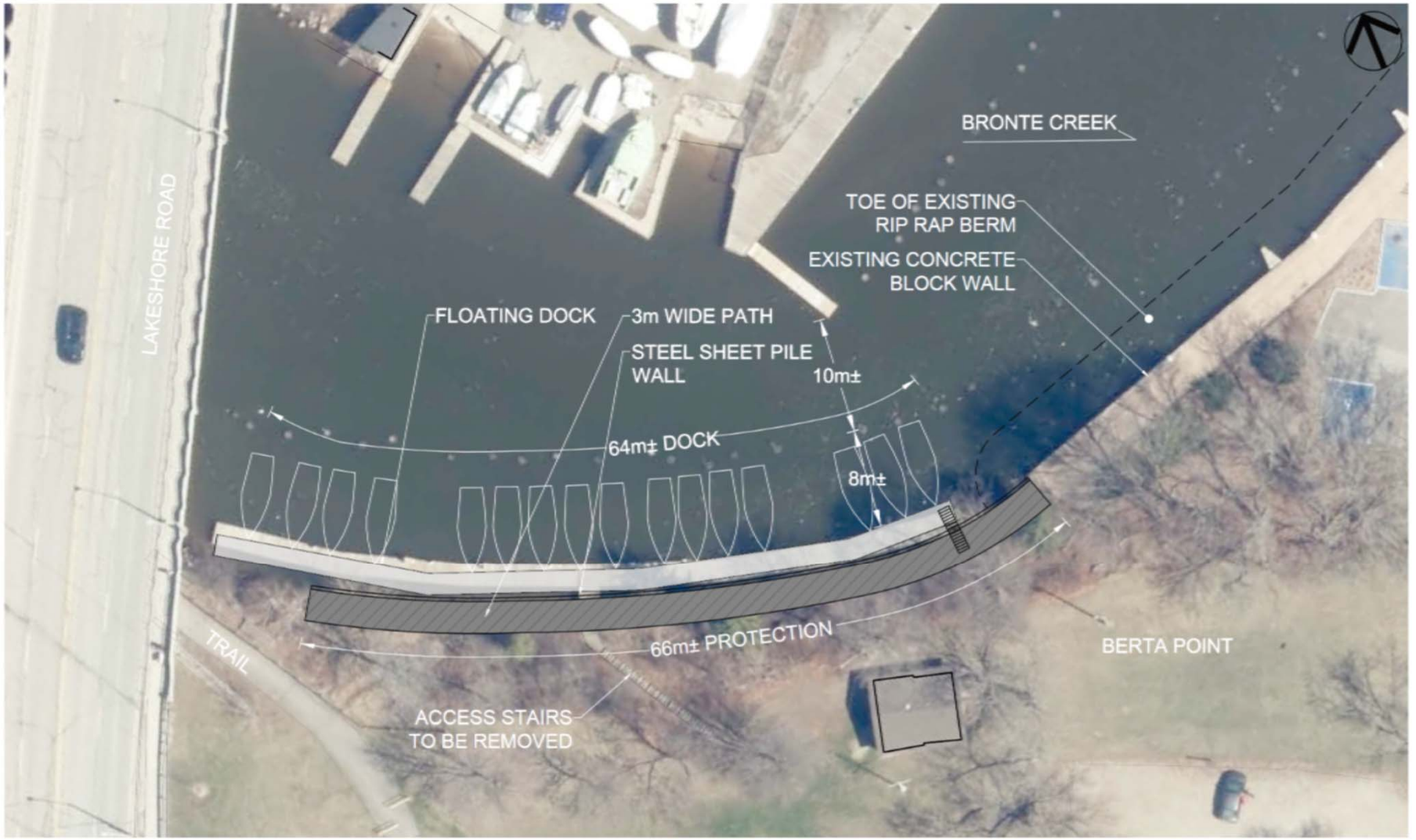




Option 2 Rock Protection with Pile Supported Walkway

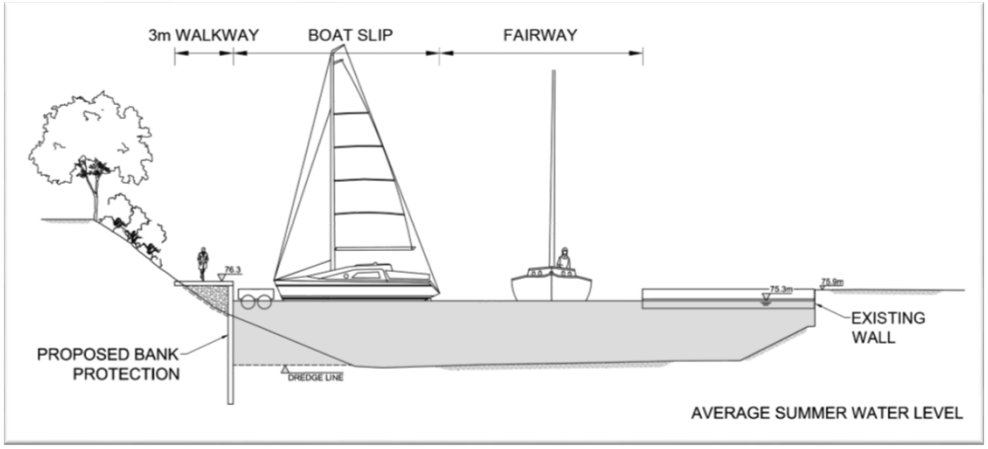
Description	Shoreline protected with a rip rap or boulder berm. Walkway along the shoreline supported on steel piles driven and anchored to bedrock.
Meets Objective	• Provides shoreline protection • Provides continuous access along shoreline
Estimated Price	$450,000 (not including dock, landscaping or contingency allowance)
Environmental Impacts	• Bank excavated and vegetation removed to construct shore protection • Rock berm improves fish habitat (crevices, voids, niche spaces)
Constructability	• Walkway support piles are driven to bedrock and anchored • Marine based construction anticipated to install piles
Other Notes	• Future dredging operations restricted by rock slope • Maintains navigation width (fairway) between moored boats and north wall • Boats berth at a floating dock that runs parallel to pier • Docks could be anchored to piles supporting walkway • Access ramp to dock at Berta Point, no access from west bank • Estimated lifespan greater than 35 years

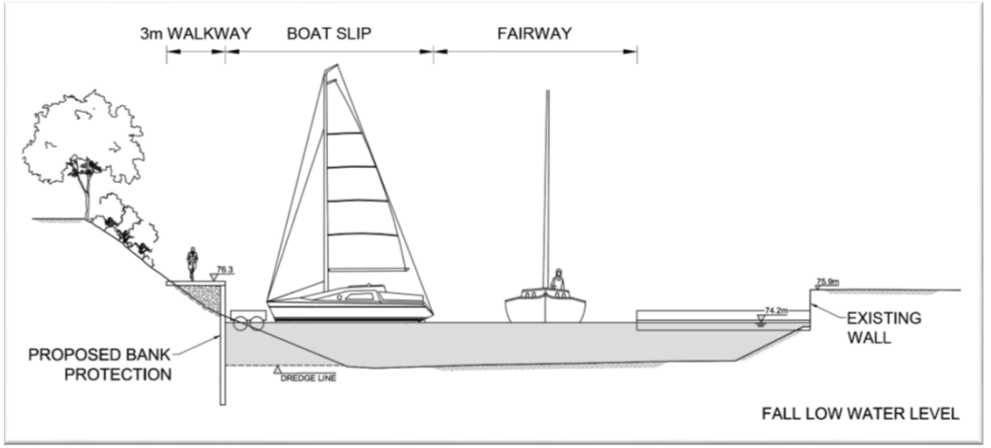
Option 3 Steel Sheet Pile Wall with Walkway



Option 3 Steel Sheet Pile Wall with Walkway

- Steel sheet pile wall protecting bank
- Walkway along back of wall
- Floating main dock along shoreline
- Access to shoreline through Berta Point

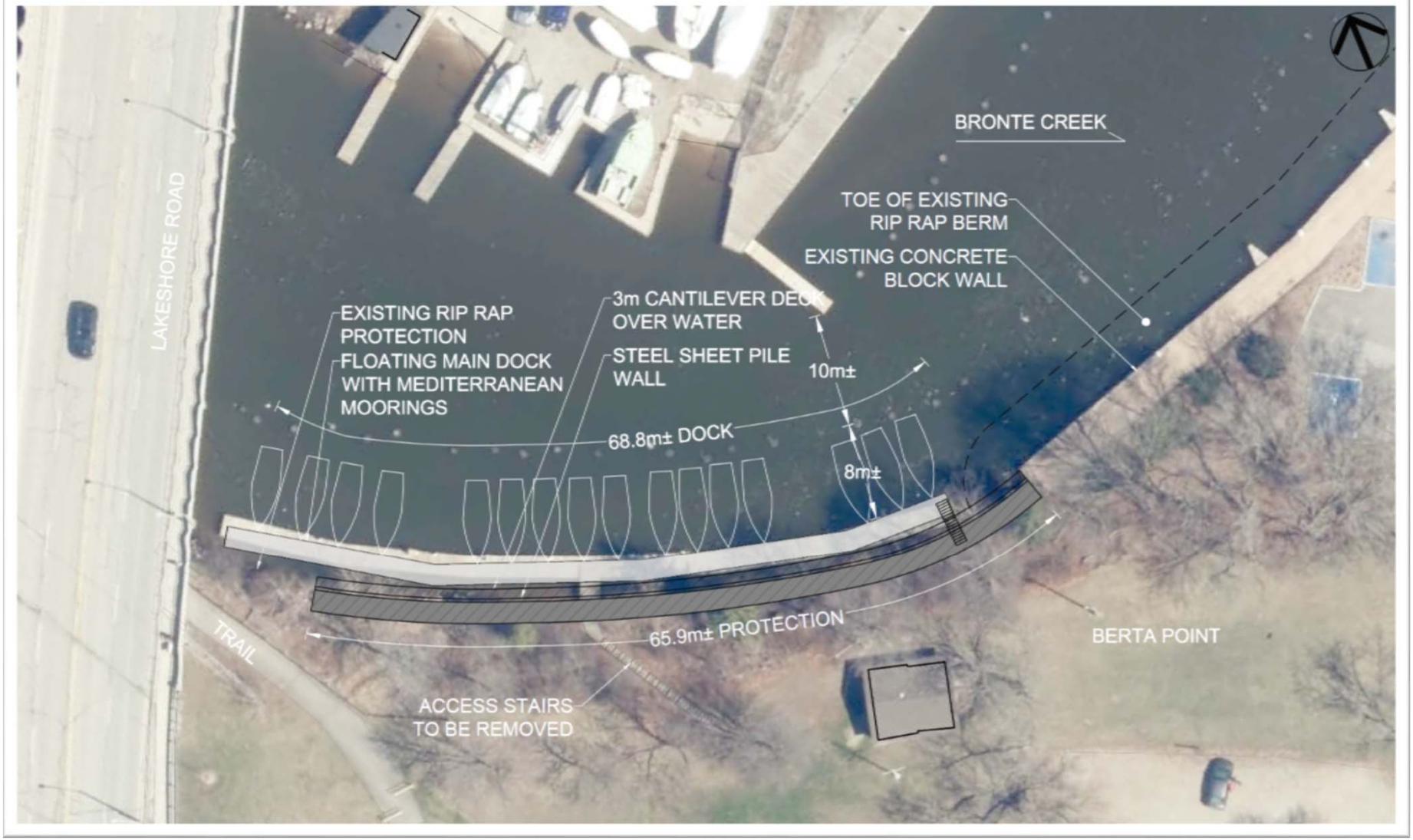




Option 3 Steel Sheet Pile Wall with Walkway

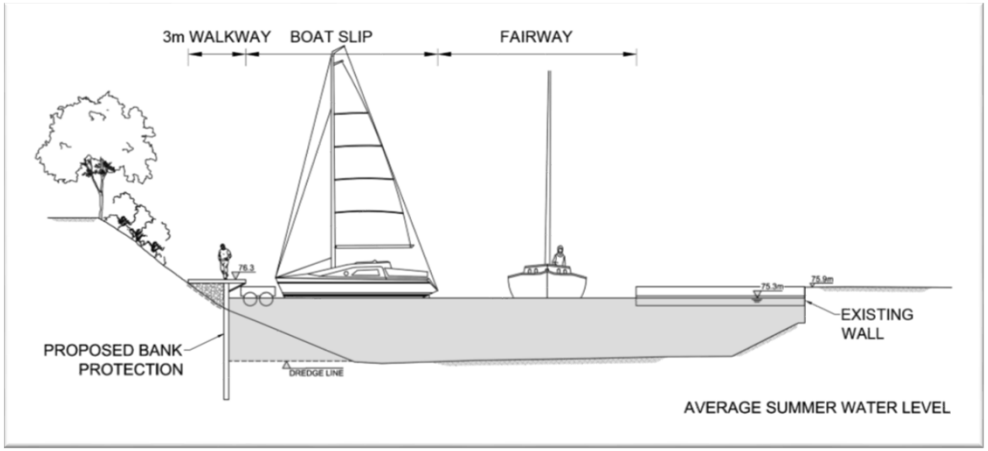
Description	Continuous steel sheet pile wall along shoreline with walkway along the back of the wall.
Meets Objective	• Provides shoreline protection • Provides continuous access along shoreline
Estimated Price	$700,000 (not including dock, landscaping or contingency allowance)
Environmental Impacts	• Creek widened below average water line (dredging) • Bank filled above average water line • Loss of vegetation behind steel sheet pile wall • No additional fish habitat provided
Constructability	• Cantilever steel sheet pile driven to bedrock well understood construction • Elevation of bedrock varies significantly which may require grouting and pinning of wall • Marine based construction anticipated
Other Notes	• No berm to impede dredging • Increase navigation width (fairway) between moored boats and north wall • Boats can berth closer to the wall • Access ramp to dock near Berta Point, no access from west bank • Estimated lifespan greater than 50 years

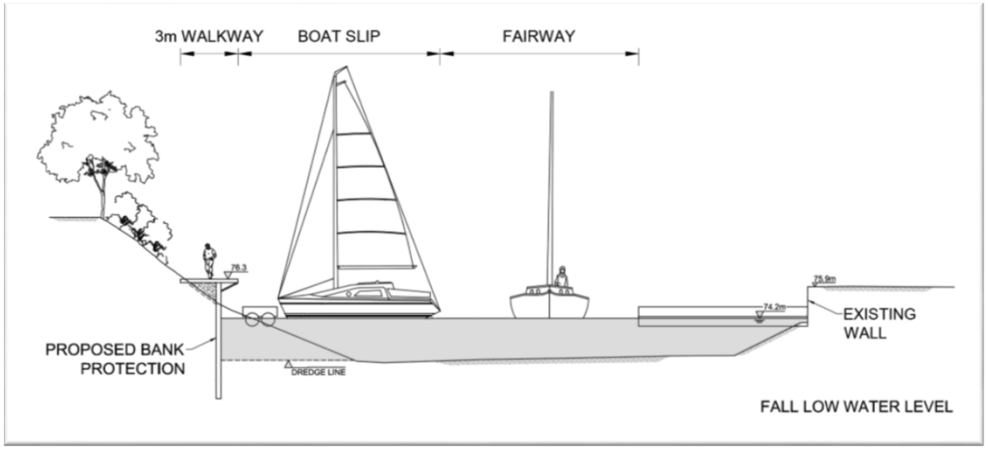
Option 4 Steel Sheet Pile Wall with Cantilevered Walkway



Option 4 Steel Sheet Pile Wall with Cantilevered Walkway

- Steel sheet pile wall protecting bank
- Walkway along back and front of wall
- Floating main dock along shoreline
- Access to shoreline through Berta Point

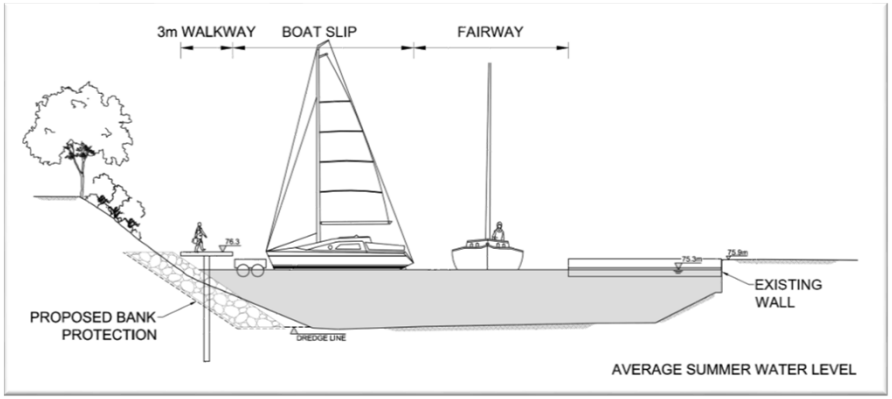


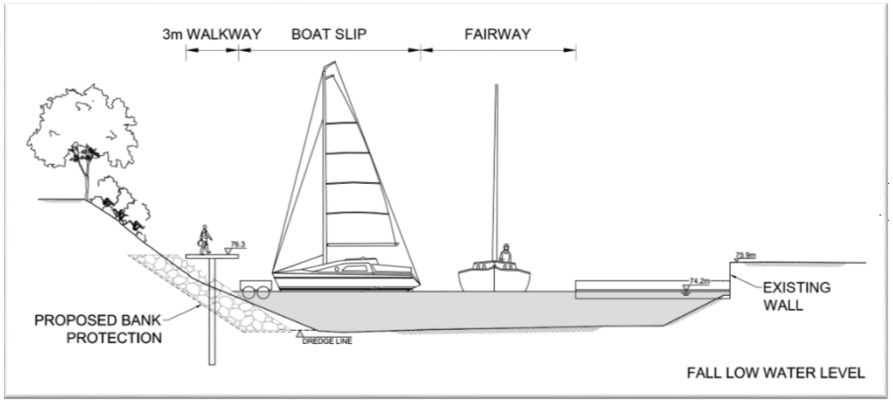


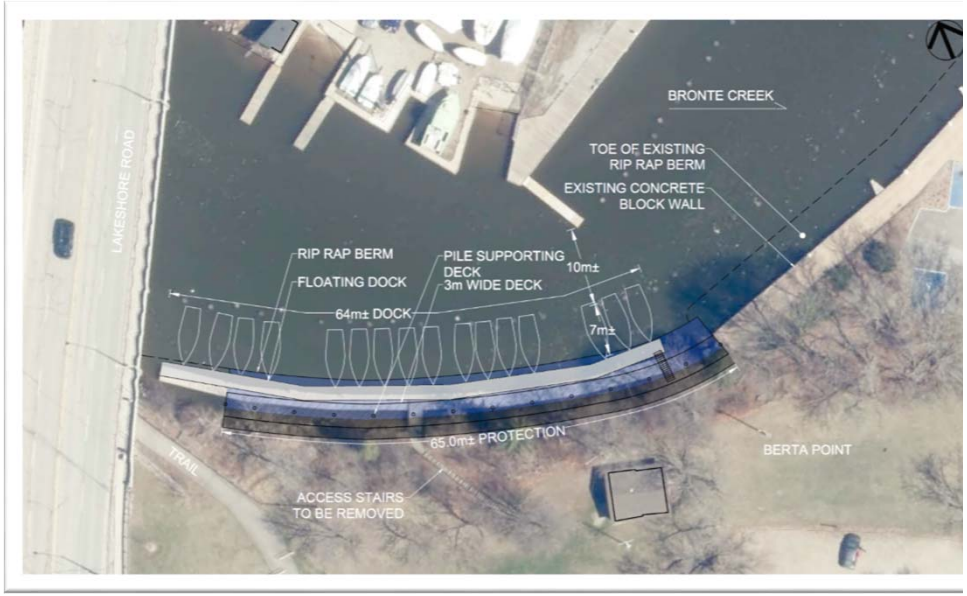
Option 4 Steel Sheet Pile Wall with Cantilevered Walkway

Description	Steel sheet pile wall with walkway behind and overhanging the wall
Meets Objective	• Provides shoreline protection • Provides continuous access along the shoreline
Estimated Price	$750,000 (not including dock, landscaping or contingency allowance)
Environmental Impacts	• Creek widened below average water line (dredging) • Less filling above average water line • Loss of vegetation behind steel sheet pile wall • No additional fish habitat provided
Constructability	• Cantilever steel sheet pile driven to bedrock well understood construction • Elevation of bedrock varies significantly which may require grouting and pinning of wall especially where wall is closer to existing bank • Marine based construction anticipated
Other Notes	• No berm to impede dredging • Increase navigation width (fairway) between moored boats and north wall • Boats can berth closer to the wall • Access ramp to dock near Berta Point, no access from west bank • Estimated lifespan greater than 50 years

Preliminary Preferred Solution



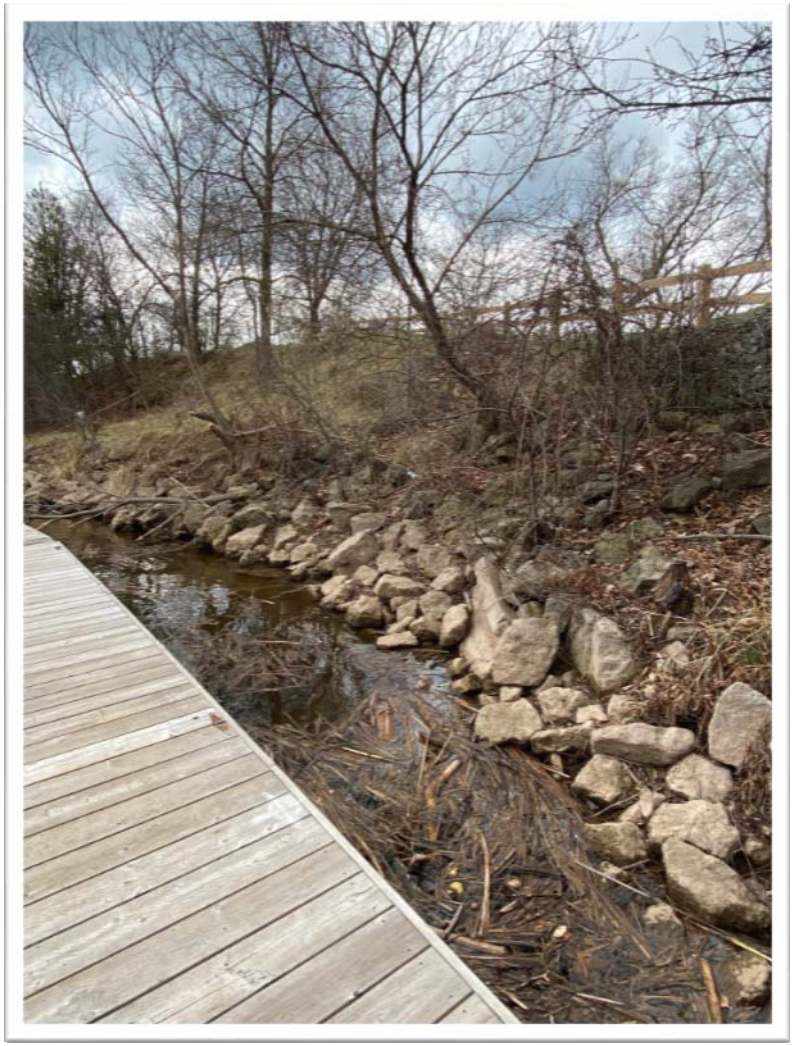




Option 2
Rock Protection with Pile Supported Walkway

Permits & Approvals

- Fisheries and Oceans Canada (DFO)
  - Fisheries Act
  - Federally Listed Species at Risk
- Transport Canada (TC)
  - Navigation Protection Act
- Ministry of Environmental Conservation and Parks (MECP)
  - Endangered Species Act
- Ministry of Natural Resources and Forestry (MNRF)
  - Public Lands Act (creek bottom owned by Town of Oakville)
- Conservation Halton (CH)
  - Ontario Regulation 162/06



View along west bank

Comments

We would like to hear from you.

Please provide your thoughts, ideas, concerns and questions about this project through our website or by email.

If you would like to be included in our mailing list, please register or provide us your contact information by email.

View looking south at Lakeshore Rd. W Bridge

Contact Information

Rakesh Mistry OALA, CSLA
Town of Oakville
1225 Trafalgar Road
Oakville, Ontario L6H 0H3
Phone:905.845.6601x3664
Email: rakesh.mistry@oakville.ca

Jane Graham P.Eng
Shoreplan Engineering Limited
20 Holly Street, Suite 202
Toronto, Ontario M4S 3B1
Email: jgraham@shoreplan.com

#1

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Tuesday, May 18, 2021 9:01:37 AM
Last Modified:	Tuesday, May 18, 2021 9:02:06 AM
Time Spent:	00:00:29
IP Address:	170.52.100.133

Page 1

Q1

Please provide your full name to register

Name	**Test**
Postal Code	**Test**
Email Address	**test@test.ca**

Q2

Would you like to be added to the Study Contact List to receive future notifications?

No

Q3

Please provide any questions or comments you may have.

test, test, test

#2

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Wednesday, May 19, 2021 2:24:33 PM
Last Modified:	Wednesday, May 19, 2021 2:27:55 PM
Time Spent:	00:03:22
IP Address:	104.195.154.103

Page 1

Q1

Please provide your full name to register

Name	**Stephanie Spares**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

Option 2 is also my preferred, after seeing the different designs. Question though, for all options: The report shows what happens in average and low water levels for Lake Ontario, however in the past few years, we have had above average water levels which have caused flooding in the harbour. As a sailor in Bronte and a resident, I'm wondering what impact the high waters would have on the proposed retaining walls as well as the ability for the docks to float above water in flooding situations.

#3

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Thursday, May 27, 2021 11:03:02 AM
Last Modified:	Thursday, May 27, 2021 11:06:07 AM
Time Spent:	00:03:05
IP Address:	24.150.138.12

Page 1

Q1

Please provide your full name to register

Name	**Mike**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

If there is going to be a change to the area it should be left in its natural state as closely as possible

Example - We frequently walk along all the great boardwalks and waterfront areas with our kids but what makes our experience perfect is we can still get right up to the water and explore the rocks and the waterfront in its natural form etc.. and our kids get a fine balance of a nice finished waterfront while concurrently also getting to explore areas that remain in their natural form.

#4

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Friday, May 28, 2021 8:45:19 AM
Last Modified:	Friday, May 28, 2021 9:11:51 AM
Time Spent:	00:26:31
IP Address:	24.226.77.66

Page 1

Q1

Please provide your full name to register

Name	**John Wilkening**
Postal Code	**L[redacted]**
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

1. I am overall supportive of option 2
2. Please ensure this does not impede on existing green space and if possible enhances the green space. The area needs more grass and plants and less concrete and buildings.
3. If the access stairs are moved to Berta Point, could the small gravel parking area just south of Lakeshore be converted into green space? It is an eyesore and it is only accessible to yacht club members so it provides no public benefit. It would truly serve the public better as a open grassy area rather than its current use as a private parking lot not open to the public.
4. Please remember that people live here 12 months a year while boaters are seasonal. The wants/needs of the boaters/yacht club should not come before those who live in the area and call it home.

#5

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Friday, May 28, 2021 10:57:43 AM
Last Modified: Friday, May 28, 2021 11:46:07 AM
Time Spent: 00:48:23
IP Address: 24.226.77.77

Page 1

Q1

Please provide your full name to register

Name	**Dawn McKinnon**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

Hello. While I am inclined to agree Option 2 is the preferred shoreline improvement option, it would have been helpful to review an analysis and evaluation of alternatives panel, which is typically included at a PIC, to compare the alternatives to one another.

Panel 21 correction: it's the Ministry of Environment, Conservation and Parks (MECP) - as opposed to Ministry of Environmental Conservation and Parks

Thanks very much for the opportunity to comment.

#6

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Saturday, May 29, 2021 10:14:03 AM
Last Modified: Saturday, May 29, 2021 10:15:36 AM
Time Spent: 00:01:32
IP Address: 24.150.18.29

Page 1

Q1

Please provide your full name to register

Name	**Philip Habib**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

Outdoor Music Amphitheatre/theatre?

#7

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Saturday, May 29, 2021 12:31:43 PM
Last Modified:	Saturday, May 29, 2021 12:32:48 PM
Time Spent:	00:01:04
IP Address:	70.53.64.40

Page 1

Q1

Please provide your full name to register

Name	**Theresa O'Connor**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

I like Option 2. Not over-engineered. Meets the need of boaters and provides fish habitat.

#8

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Tuesday, June 01, 2021 10:43:41 AM
Last Modified:	Tuesday, June 01, 2021 10:45:41 AM
Time Spent:	00:02:00
IP Address:	24.150.167.177

Page 1

Q1

Please provide your full name to register

Name	**Mary Johannesson (BHYC Commodore)**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

BHYC would like to keep using the parking lot directly west of the subject area, and maintain pathway access to the docks.

BHYC would prefer to have direct access from the new wall to the boats, similar to the rest of the Berta Point wall areas. i.e. remove the floating dock if possible. The boats require ~2' of draft under the tip of the bow, and ~5' draft at a point 10' aft of the bow tip.

#9

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Tuesday, June 01, 2021 10:10:31 PM
Last Modified:	Tuesday, June 01, 2021 10:13:05 PM
Time Spent:	00:02:34
IP Address:	24.226.80.18

Page 1

Q1

Please provide your full name to register

Name	**Henry Grudzien**
Postal Code	[redacted]
Email Address	**h**[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

I would like updates of possibly improvements

#10

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Tuesday, June 01, 2021 11:37:49 PM
Last Modified: Tuesday, June 01, 2021 11:43:54 PM
Time Spent: 00:06:04
IP Address: 104.195.152.133

Page 1

Q1

Please provide your full name to register

Name	**Adam Dallaire**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

No

Q3

Please provide any questions or comments you may have.

As someone who kayaks through this area, the space to kayak is wide enough as is. The dredging should be limited to avoid impacting the fish in the area. Boats should not be set closer to the shore. It would be interesting to tie into the current walking paths to provide better flow as it is currently disconnected

#11

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Thursday, June 03, 2021 5:15:48 PM
Last Modified:	Thursday, June 03, 2021 5:19:02 PM
Time Spent:	00:03:14
IP Address:	24.226.80.14

Page 1

Q1

Please provide your full name to register

Name	**Chris Stephens**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

Hi, Whatever route you choose, I hope every attempt is made to preserve as many of the mature trees as possible in the area under question. As a Bronte resident, boater, and marina user this spot is pretty idyllic. Removing many of the trees and replacing it with an industrial-looking wall will do nothing to enhance the pleasure of being in that area, and, if I'm not mistaken, trees are a very effective at erosion mitigation, especially on slopes. Thank you.

#12

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Sunday, June 06, 2021 9:42:55 AM
Last Modified:	Sunday, June 06, 2021 9:43:22 AM
Time Spent:	00:00:26
IP Address:	70.25.245.156

Page 1

Q1

Please provide your full name to register

Name	**Dr. Zafer Mian**
Postal Code	[redacted]
Email Address	**z**[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

No

Q3

Please provide any questions or comments you may have.

Respondent skipped this question

#13

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Monday, June 07, 2021 9:11:41 AM
Last Modified:	Monday, June 07, 2021 9:12:47 AM
Time Spent:	00:01:06
IP Address:	24.226.67.6

Page 1

Q1

Please provide your full name to register

Name	**Melissa Boote**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

No

Q3

Please provide any questions or comments you may have.

I agree that the preliminary choice of option 2 makes the most sense. Losing fish habitat simply to make dredging easier makes no sense.

#14

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Tuesday, June 08, 2021 3:49:15 PM
Last Modified:	Tuesday, June 08, 2021 4:07:23 PM
Time Spent:	00:18:08
IP Address:	24.226.65.137

Page 1

Q1

Please provide your full name to register

Name	**Susan Sproule**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

We currently rent a slip on this dock. I have two major issues with any of the options.
1. Parking
You plan does not address parking. There is not enough parking in the Berta Point lot currently and there will definitely not be enough parking if you add requirements for an additional 18 more moorings. We currently have six permit parking spots on West River Street. On race nights and weekends we often have up to 12 vehicles (double-parked) in this lot. Where will we park in the new configuration?
2. Fairway
There can be no reduction in the width of the fairway between the boats on the West bank dock and the east seawall and docks. It is very narrow and we have had damage to our boat from large boats trying to navigate this narrow space. Yesterday, the police boat brought in a disabled sailboat and they had just inches of clearance to get through the narrowest part of the channel.

#15

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Wednesday, June 09, 2021 8:46:58 AM
Last Modified:	Wednesday, June 09, 2021 8:53:06 AM
Time Spent:	00:06:08
IP Address:	70.24.159.240

Page 1

Q1

Please provide your full name to register

Name	**Dennis Giokas**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

I think for the extra cost and value to the creek, options 3 or 4 are best (the ones with steel sheet pile walls). Dredging flexibility is needed for boaters along with the extra width afforded. Also, it is not just about boat traffic in that area. The creek is getting a lot of use by paddle boarders and kayakers. This area is at the BHYC launch point and just upstream from the town launch point for those users. Boaters are already challenged navigating to and from their slips with the paddlers on the creek. We want to accommodate and encourage more use of the creek by paddlers. My preferred options are best for all the uses of boaters and paddlers. The other two options fall short.

#16

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Wednesday, June 09, 2021 10:33:14 AM
Last Modified: Wednesday, June 09, 2021 10:39:52 AM
Time Spent: 00:06:38
IP Address: 70.49.242.183

Page 1

Q1

Please provide your full name to register

Name	**Robbert Borst**
Postal Code	[redacted]
Email Address	[redacted]

Q2

Would you like to be added to the Study Contact List to receive future notifications?

Yes

Q3

Please provide any questions or comments you may have.

Options 3 and 4 are prefered as they do not impede boat traffic in that part of the inner harbour which is already restricted by boats docking on the west wall, operations of a sailing school on the east wall and increasing traffic of small power craft, kayaks and paddleboards. The increased traffic is becoming a safety issue and narrowing the channel with a seawall will only make it worse. Thank you

PIC 2 Website

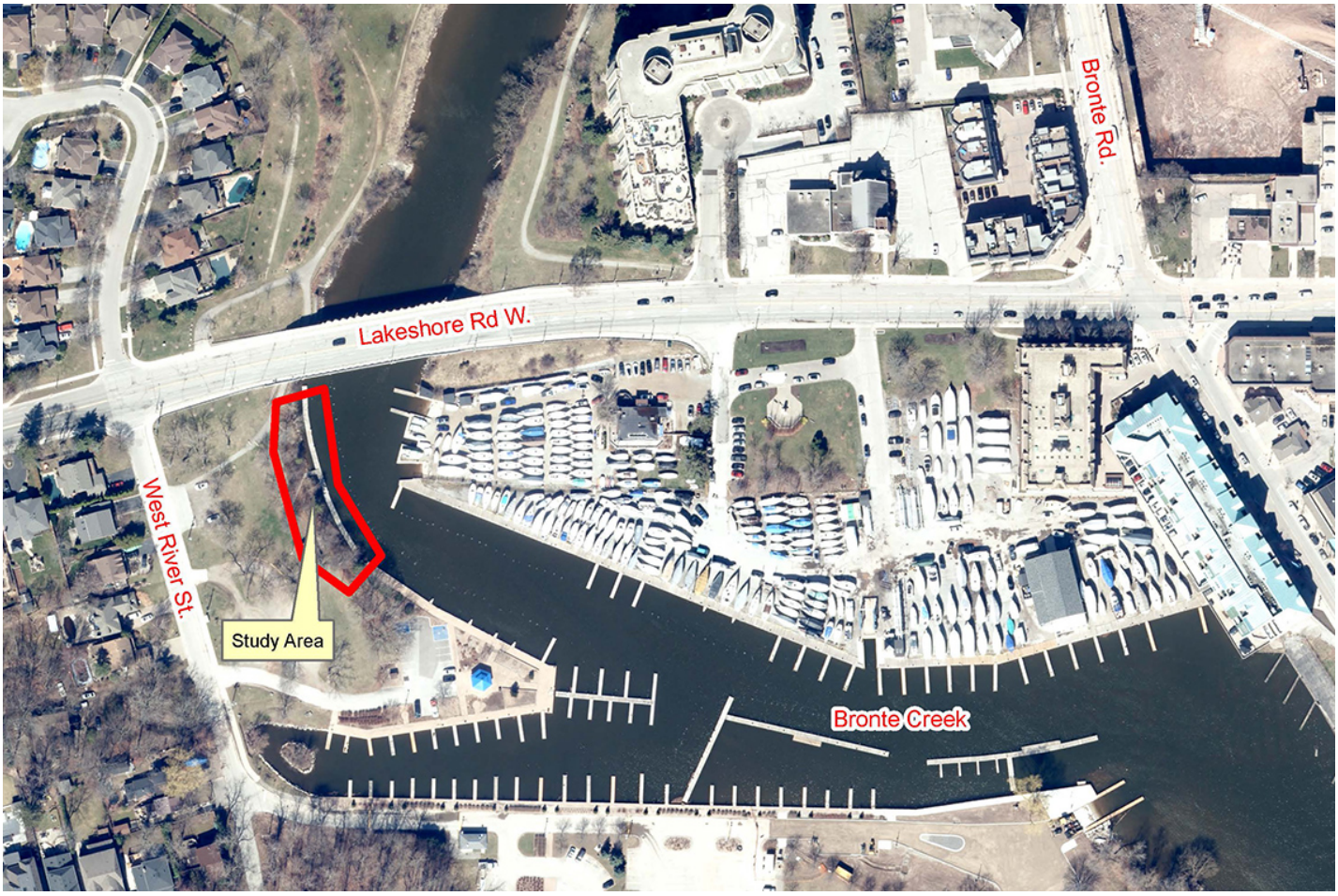
Berta Point West Bank Seawall Improvements – Bronte Inner Harbour

The shoreline at Berta Point on Bronte Creek is in poor condition and the Town of Oakville is considering alternatives for improvements. The purpose of this project is to provide shore stability, overall enhancement of the environmental conditions, and improved public access to the shoreline. The town is considering ways and means of achieving this goal and has initiated a Municipal Class Environmental Assessment (EA).

A key component of the study involves consultation with interested stakeholders, the public and regulatory agencies. You are encouraged to provide your comments so that they may be incorporated into the plan and design of this project.

Online Public Information Centre #2: December 8 - 22, 2021

The Public Information Centre (PIC) No. 2 will be held in an online format. Information about the study and the improvements will be posted here from December 8 to 22, 2021. This is the second of two PICs planned for this study and this PIC will demonstrate the preferred option. You can provide your input by reviewing the study information presented. Following public consultation, the EA study team will review all the comments received and incorporate them into the Environmental Study Report (ESR).



Berta Point West Bank Seawall Improvements Public Information Centre number two

Project objectives

- High water levels in Lake Ontario during 2017, 2019, and 2020 led to erosion along many shorelines including Berta Point.
- Berta Point west bank shoreline protection is in poor condition. The Town of Oakville is considering options for shoreline improvements.
- The purpose of this project is to provide shoreline improvements that create shore stability, an overall enhancement of the terrestrial and aquatic conditions and improved public access along the shoreline.
- The Town of Oakville is considering ways and means of achieving this goal and has initiated a Schedule B Municipal Class Environmental Assessment (EA).
- Shoreplan Engineering Ltd. was retained to develop solutions and implement the project.

Project timeline

- Site investigations and site visit to review and assess existing conditions (complete)
- Identify site requirements (complete)

- Identify data gaps (complete)
- Develop alternative design solutions (complete)
- First public information session (May 2021 - complete)
- Selection of preferred option (complete)
- Detailed design (complete)
- Second public information session (We are here - December 2021)
- Permitting and agency review
- Project to tender
- Construction (Fall 2023)

Existing site conditions

Berta Point West Bank located on Bronte Creek within Bronte Inner Harbour:

- Bronte Inner Harbour shorelines protected by concrete block and steel sheet pile walls.
- West bank (study site) has 75 metres of steep bank with substandard protection of mixed concrete rubble and stone below the average water line.
- Upper bank consists of bedrock and overburden (soil and rubble over other soils).
- Lakeshore Road Bridge to north is protected with gabion baskets and rock protection.
- Berta Point to east is protected with stacked concrete block walls capped with interlocking walkway along shoreline.
- High water levels in 2017 and 2019 eroded upper slopes of bank above water line.

Recreational facilities

- Waterfront trail runs under Lakeshore Road Bridge into upper park.
- Bronte Harbour Yacht Club members tie off along a shore-parallel floating dock at the west bank.
- Access stairs lead down the bank to a gangway and seasonal docking.
- No walkway connection along Berta Point to the floating dock or trail under the bridge.

Site assessments and studies

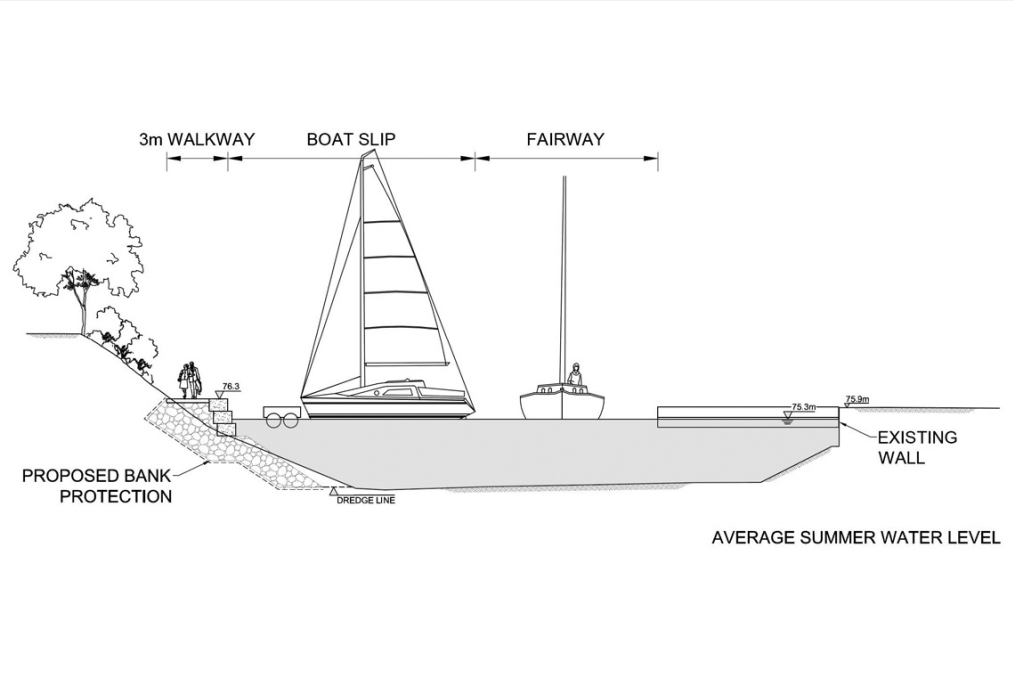
Assessments completed to date:

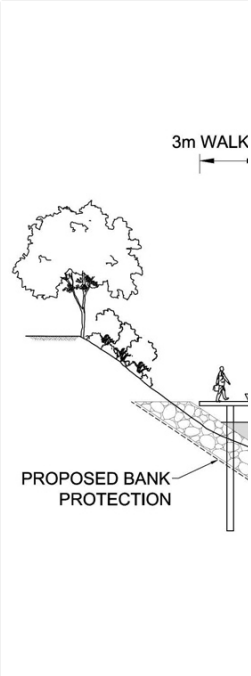
- Coastal Assessment
    - Water levels
    - Flow/wave conditions
- Geotechnical investigation
- Tree inventory
- Fish and aquatic habitat assessment
    - Species at risk identified: Silver Shiner (threatened) with critical habitat in Bronte Creek.

Design options presented in Public Information Centre (PIC) number one

Options:

1. Concrete block wall supported on rip-rap berm.
2. Shoreline protected with a rip-rap or boulder berm. Walkway along the shoreline is supported on steel piles and anchored to bedrock.
3. Continuous steel sheet pile wall along shoreline edge with walkway along the back of the wall.
4. Steel sheet pile wall with walkway behind and overhanging the wall.





PIC number one: What you said

Fourteen residents commented:

- Natural Environment
  - Maintain natural vegetation
  - Preserve mature trees as much as possible
  - Maintain fish habitat
- Walkways
  - Tie into existing walkways along shoreline
- Navigation
  - Boat traffic congestion (sail and power boats, sailing school, kayaks, paddle boarders)
  - Maintain or make the fairway (navigation channel) wider
  - Town review dredging operations

- Other
    - Does the design address high water levels
    - Comments on parking and green spaces
-
- Overall support for Option 2 Rock Protection with Pile Supported Walkway

---

Evaluation

Option One

Meets objectives?

- Shoreline protection: Yes
- Continuous access to shoreline: Yes

Environmental impacts

- Aquatic habitat: Improves fist habitat with rock berm
- Terrestrial habitat: Requires bank excavation and vegetation removal. Fill behind wall.
- Turbidity: Temporary during construction

Constructability

- Common structure type: Yes
- Bedrock shelf: Challenging to construct on rock slope
- Construction from shore or water: Both

Other

- Navigation depth: Limited by rock slope
- Maintain or widen fairway: Yes
- Estimated lifespan: Greater than 35 years
- Docking: Floating dock parallel to shore

Cost

- $420,000

Option Two

Meets objectives?

- Shoreline protection: Yes
- Continuous access to shoreline: Yes

Environmental impacts

- Aquatic habitat: Improves fist habitat with rock berm
- Terrestrial habitat: Requires removal of vegetation for construction of rock berm
- Turbidity: Temporary during construction

Constructability

- Common structure type: Yes
- Bedrock shelf: Minimal impact single piles
- Construction from shore or water: Both

Other

- Navigation depth: Limited by rock slope
- Maintain or widen fairway: Yes
- Estimated lifespan: Greater than 35 years for rock protection. Greater than 50 years for walkway
- Docking: Floating dock parallel to shore

Cost

- $450,000

Option Three

Meets objectives?

- Shoreline protection: Yes
- Continuous access to shoreline: Yes

Environmental impacts

- Aquatic habitat: Deeper fish habitat area created with creek bottom excavation. No additional cracks, voids or niche spaces.
- Terrestrial habitat: Requires vegetation removal. Fill behind wall.
- Turbidity: Temporary during construction

Constructability

- Common structure type: Yes
- Bedrock shelf: Major impact continuous wall
- Construction from shore or water: Water

Other

- Navigation depth: Dredge adjacent to wall
- Maintain or widen fairway: Widened
- Estimated lifespan: >50 years
- Docking: Floating dock, boats can berth closer to wall

Cost

- $700,000

Option Four

Meets objectives?

- Shoreline protection: Yes

- Continuous access to shoreline: Yes

Environmental impacts

- Aquatic habitat: Deepened fish habitat created with creek bottom excavation. No additional cracks, voids or niche spaces
- Terrestrial habitat: Requires vegetation removal. Fill behind wall.
- Turbidity: Temporary during construction

Constructability

- Common structure type: Yes
- Bedrock shelf: Major impact continuous wall
- Construction from shore or water: Water

Other

- Navigation depth: Dredge adjacent to wall
- Maintain or widen fairway: Widened
- Estimated lifespan: Greater than 50 years
- Docking: Floating dock, boats can berth closer to wall

Cost

- $750,000

Do nothing

Meets objectives?

- Shoreline protection: No
- Continuous access to shoreline: No

Environmental impacts

- Aquatic habitat: No change
- Terrestrial habitat: No change
- Turbidity: No change

Constructability

- Common structure type: Not applicable
- Bedrock shelf: No change
- Construction from shore or water: Not applicable

Other

- Navigation depth: No change
- Maintain or widen fairway: Yes
- Estimated lifespan: No design life
- Docking: Floating dock parallel to shore

Cost

- None

Preferred solution: Option Two (Rock protection with pile supported walkway)

Decking options

- Galvanized steel grating
- ThruFlow decking
- Power pedestal

Walkway features

- Galvanized steel grating
- Thruflow decking
- Marine power pedestal

Next Steps

- Complete Environmental Study Report
- Complete Detailed Design
- Agency Submission
    - Fisheries and Oceans Canada
    - Ministry of Natural Resources

    - Ministry of Environment Conservation and Parks
    - Conservation Halton
- Oakville Council
    - Anticipated construction budget approval 2022
    - Anticipated construction Fall 2023

Comments

We would like to hear from you.

Please provide your thoughts, ideas, concerns and questions about this project by emailing the project team, below. If you would like a hard copy of the presentation sent to you, please send an email to the project team with your email or home address.

This concludes this project's public consultation.

Contacts

Rakesh Mistry OALA, CSLA
Town of Oakville
1225 Trafalgar Road
Oakville, Ontario L6H 0H3
Phone:905.845.6601x3664
Email: rakesh.mistry@oakville.ca (mailto:rakesh.mistry@oakville.ca)

Jane Graham P. Eng.
Shoreplan Engineering Limited
20 Holly Street, Suite 202
Toronto, Ontario M4S 3B1
Email: jgraham@shoreplan.com (mailto:jgraham@shoreplan.com)

Notice of Study Commencement

Notice of Study Commencement

Municipal Class Environmental Assessment Study

The study is being carried out in accordance with the requirements of a Schedule B project as outlined in the Municipal Engineers Association (MEA) Municipal Class EA document (October 2000, as amended in 2015), which is an approved process under the Ontario Environmental Assessment Act. The

EA process includes public and agency consultation, an evaluation of alternative solutions, an assessment of the potential environmental effects of the alternative solutions, selection of the preferred solution and identification of reasonable measures to mitigate any adverse impacts.

A key component of the study involves consultation with interested stakeholders, the public and regulatory agencies. You are encouraged to provide your comments so that they may be incorporated into the plan and design of this project. Please contact either one of the following project representatives if you would like further information on the project, if you have any questions or comments, or if you would like to be added to the study mailing list.

Rakesh Mistry, OALA, CSLA
Town of Oakville, 1225 Trafalgar Road, Oakville,
Ontario L6H 0H3
Phone: 905.845.6601 Ext. 3664
Fax: 905.338.4414
Email: rakesh.mistry@oakville.ca (mailto:rakesh.mistry@oakville.ca)

Jane Graham, P. Eng.
Shoreplan Engineering Limited
20 Holly Street, Suite 202
Toronto, Ontario M4S 3B1
Phone: 416.487.4756 Ext. 223
Fax: 416.487.5129
Email: jgraham@shoreplan.com (mailto:jgraham@shoreplan.com)

Aboriginal Consultation

OAKVILLE

May 7, 2021

Environmental Unit, Environment and Natural Resources, Lands and Trusts Services
Aboriginal Affairs and Northern Development Canada
8th Floor-25 St. Clair Avenue East
Toronto, ON M4T 1M2

RE: Notice of Study Commencement
Municipal Class Environmental Assessment Study
Berta Point West Bank Shoreline Improvements, Oakville ON.

Dear Sir/Madame

The shoreline protection at Berta Point along the shoreline of Bronte Creek is in poor condition. The Town of Oakville is considering alternatives for shoreline improvements. The purpose of this project is to provide shoreline improvements that provide shore stability, an overall enhancement of the environmental conditions and improved public access to the shoreline. The Town of Oakville is therefore considering ways and means of achieving this goal and has initiated a Municipal Class Environmental Assessment (EA).

The study is being carried out in accordance with the requirements of a Schedule B project as outlined in the Municipal Engineers Association (MEA) Municipal Class EA document (October 2000, as amended in 2015), which is an approved process under the Ontario Environmental Assessment Act. The EA process includes public and agency consultation, an evaluation of alternative solutions, an assessment of the potential environmental effects of the alternative solutions, selection of the preferred solution and identification of reasonable measures to mitigate any adverse impacts. The approximate study area is shown on the attached map.

A key component of the study will involve consultation with interested stakeholders, the public and regulatory agencies. We are requesting your help to identify which Aboriginal communities may be potentially affected by, or interested in, this project. Also, we are requesting your feedback regarding any land claims that may be affected by the project. Please forward your response to the undersigned.

If you would like to obtain further information on the project, or if you have any questions, please contact one of the following project representatives.

Rakesh Mistry, OALA, CSLA
Town of Oakville,
1225 Trafalgar Road
Oakville, Ontario L6H 0H3
Email: rakesh.mistry@oakville.ca

Jane Graham, P. Eng.
Shoreplan Engineering Limited
20 Holly Street, Suite 202
Toronto, Ontario M4S 3B1
Email: jgraham@shoreplan.com

Information related to the study and consultation process will also be posted on May 18th, 2021 on the Town of Oakville's website at:

https://www.oakville.ca/culturerec/berta-point-west-bank-seawall-improvements.html

Yours truly,

Rakesh Mistry, OALA, CSLA
Waterfront Development Coordinator

c: Chris Mark, Director, Parks & Open Space, Town of Oakville
Jane Graham, P.Eng, Shoreplan Engineering Ltd.


Lakeshore Rd W.
Bronte Rd.
West River St.
Study Area
Bronte Creek
Town of Oakville

From:	Rakesh Mistry
To:	"Fawn Sault"
Cc:	Jane Graham
Subject:	RE: Notice of Study Commencement - MCEA - Berta Point West Bank Shoreline Improvements, Oakville, ON.
Date:	Thursday, July 15, 2021 3:22:38 PM

Thank you Fawn.

Rakesh

From: Fawn Sault <Fawn.Sault@mncfn.ca>
Sent: July 14, 2021 4:50 PM
To: Rakesh Mistry <rakesh.mistry@oakville.ca>
Subject: RE: Notice of Study Commencement - MCEA - Berta Point West Bank Shoreline Improvements, Oakville, ON.

Good Afternoon Rakesh,

Thank you for your quick response. At this time we have no concerns with your project. If anything changes please let us know.

Have a great day.

Miigwech,

Fawn Sault
Consultation Coordinator
Mississaugas of the Credit First Nation
4065 Hwy. 6, Hagersville, N0A 1H0
Website: http://mncfn.ca/
Ph: 905-768-4260
Cell:289-527-6580

From: Rakesh Mistry <rakesh.mistry@oakville.ca>
Sent: Wednesday, July 14, 2021 2:44 PM
To: Fawn Sault <Fawn.Sault@mncfn.ca>
Subject: RE: Notice of Study Commencement - MCEA - Berta Point West Bank Shoreline Improvements, Oakville, ON.

Hi Fawn,
I hope this email finds you well?

Thank you for your response and no, your email was not a duplicate response. The work proposed at Berta Point is basically a filling project to alleviate the erosion caused by high water in the harbours in 2017 and 2019. This high water eroded the bank and our project is proposing to place fill (boulders) to stabilize the slope. The work also includes the installation of piles to support a walkway for the boaters. Based on our scope of work, we did not feel an archaeological study is required for this project as little to no excavation is proposed.

I hope this satisfies your request, but if you would like to discuss this project in further detail, please do not hesitate to contact me at 905-845-6601x3664.

Regards
Rakesh

From: Fawn Sault <Fawn.Sault@mncfn.ca>
Sent: July 13, 2021 11:10 AM
To: Rakesh Mistry <rakesh.mistry@oakville.ca>
Subject: RE: Notice of Study Commencement - MCEA - Berta Point West Bank Shoreline Improvements, Oakville, ON.

Good Morning Rakesh

I apologize if this is a duplicate response. Can you tell me if there are any archaeological or environmental investigations required for this project? If so the First Nation expects to have our Field Liaison Representatives on site for field studies.

Miigwech,

Fawn Sault
Consultation Coordinator
Mississaugas of the Credit First Nation
4065 Hwy. 6, Hagersville, N0A 1H0
Website: http://mncfn.ca/
Ph: 905-768-4260
Cell:289-527-6580

From: Rakesh Mistry <rakesh.mistry@oakville.ca>

Sent: Friday, May 7, 2021 3:48 PM
Subject: Notice of Study Commencement - MCEA - Berta Point West Bank Shoreline Improvements, Oakville, ON.

Hello,
Please find attached a Municipal Class Environmental Assessment (MCEA) - Notice of Study Commencement for the Berta Point West Bank shoreline improvements in Oakville, ON.

Regards.

Rakesh Mistry, OALA, CSLA
Waterfront Development Projects Coordinator
Parks & Open Space
Town of Oakville | 905-845-6601, ext.3664 | f: 905-338-4188 | www.oakville.ca