



# **Municipal Class Environmental Assessment Killarney Municipal Wharf Improvements**

## **Public Open House #1**

Wednesday, February 15, 2023

6:00 pm to 8:00 pm

# **Welcome!**



To view these display boards online, please visit:  
<http://municipalityofkillarney.ca/municipal-wharf/>



# Welcome!

- Please sign in and take a comment sheet.
- The purpose of this Open House is to:
  - Introduce the study to the public and provide an update.
  - Present the evaluation of alternative solutions.
  - Present preliminary alternative design concepts, based on the recommended alternative solution.
  - Seek your input and comments.
- If you have questions, our team members are available to discuss the project with you.
- Please place your comment sheets in the “Comment Box” or send them before Wednesday, March 1, 2023 to:



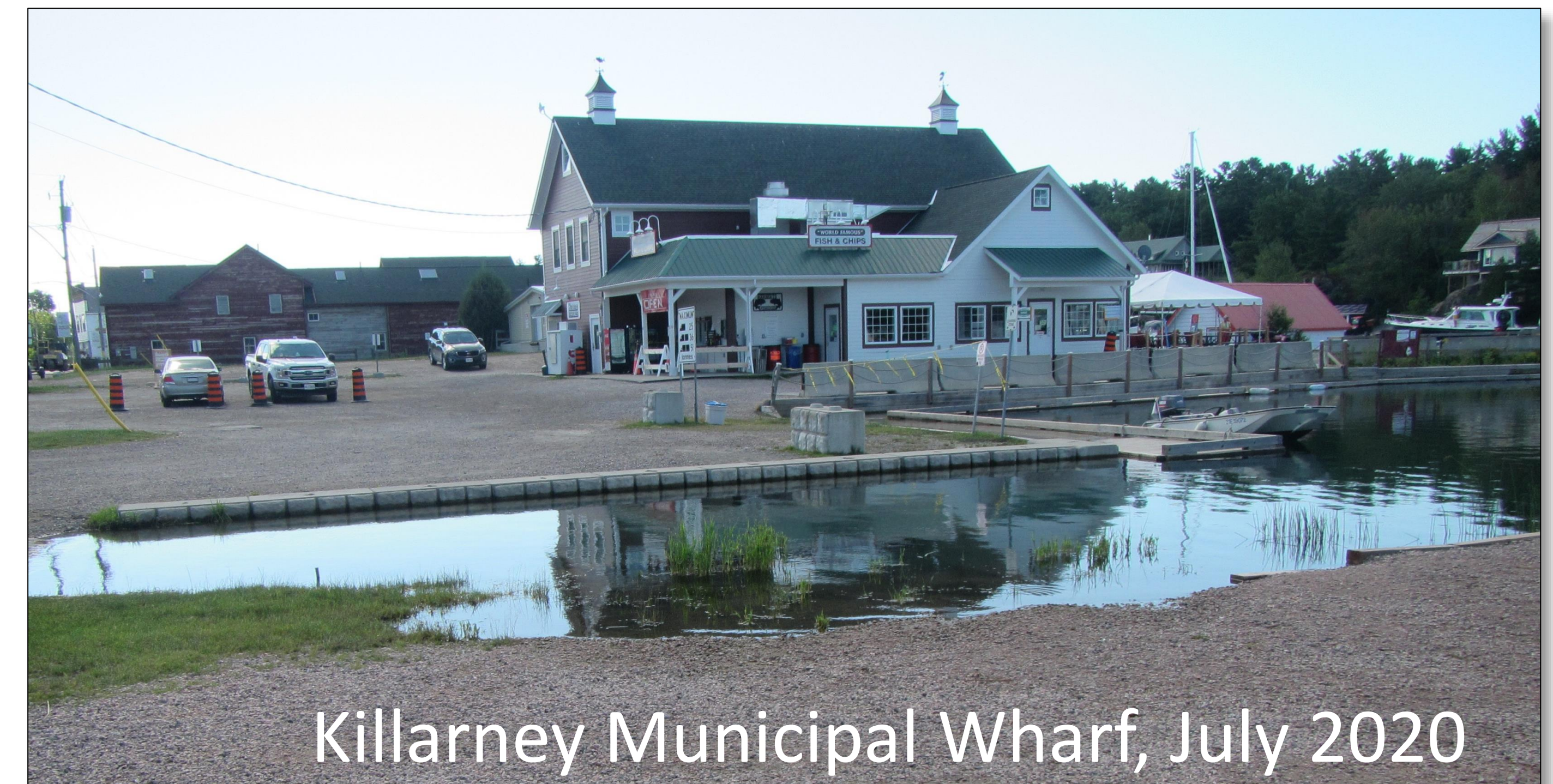
Kelly Champaigne, Project Manager  
Municipality of Killarney  
32 Commissioner Street  
Killarney, ON P0M 2A0  
kchampaigne@municipalityofkillarney.ca





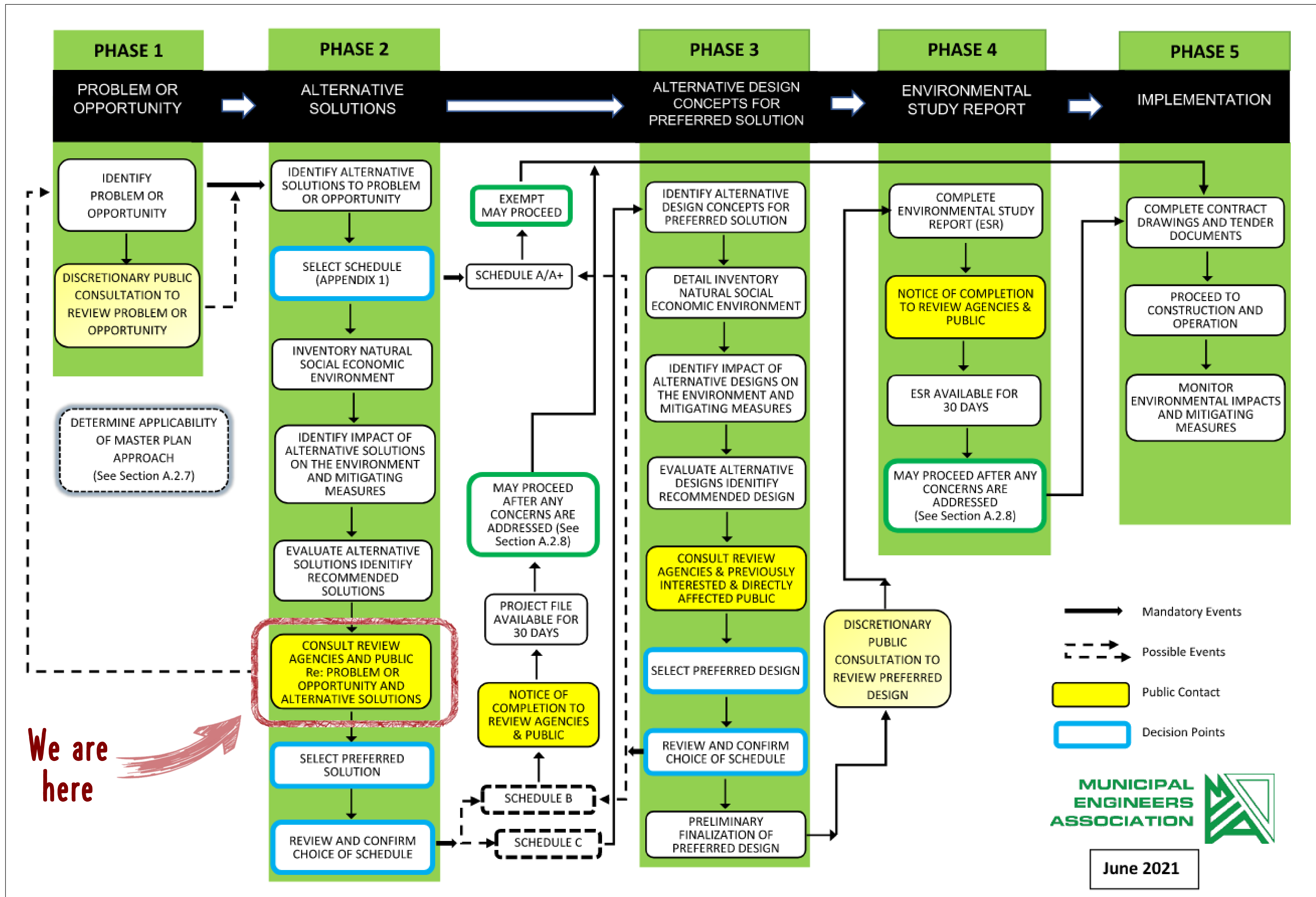
# Purpose of this Study

- To identify the preferred solution and conceptual design for the Killarney Municipal Wharf Reconstruction Project.
- To obtain and incorporate input from the public, agencies, key stakeholders and other interested parties in the selection of the preferred solution and preparation of the conceptual design to ensure the future Municipal Wharf best meets the needs of the community.





# Environmental Assessment Process



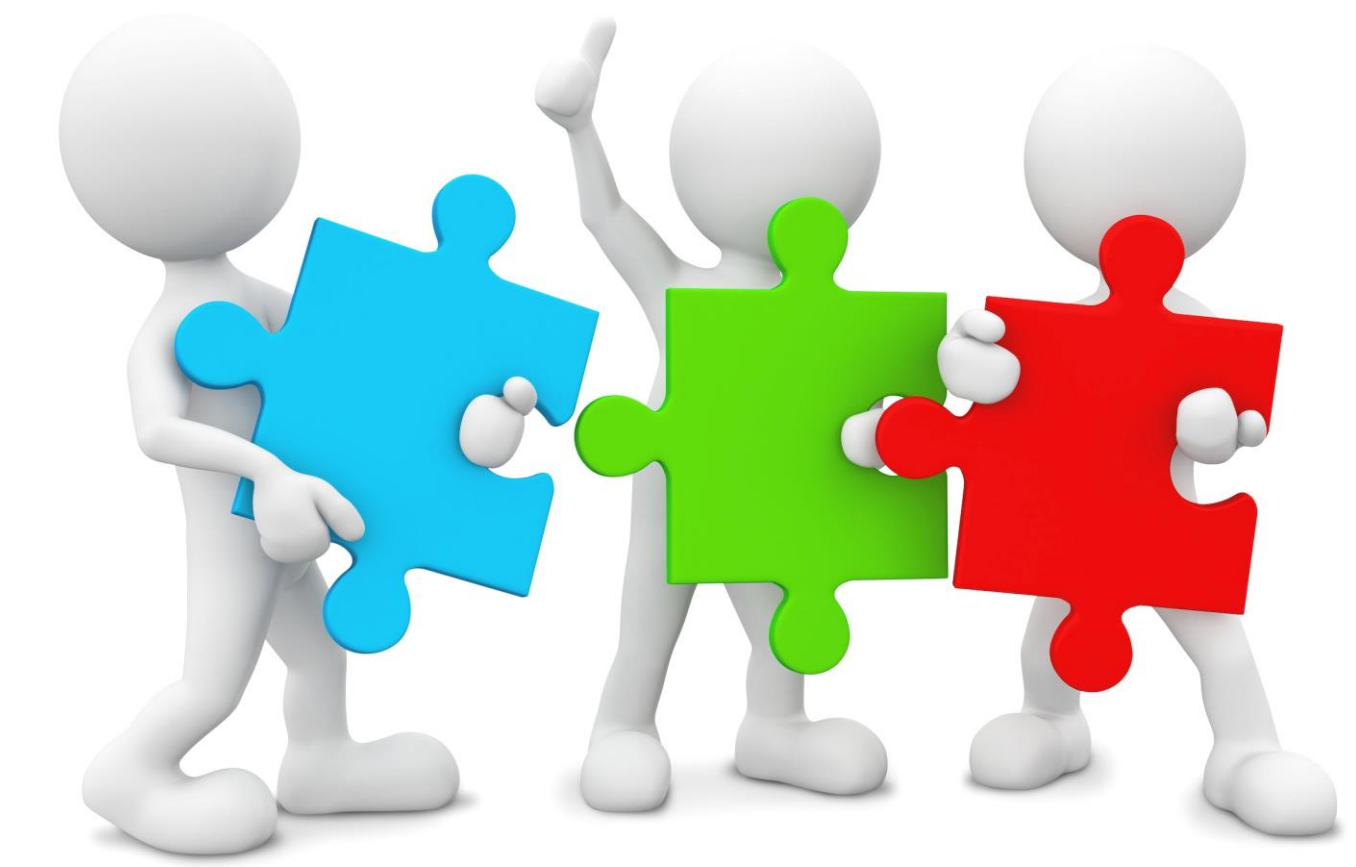
- Project is being undertaken as a Schedule "C" Class Environmental Assessment (EA) Study
- Schedule "C" EA studies include Phases 1, 2, 3 and 4 (with Phase 5 being design and construction of the project).
- We are currently near end of Phase 2.
- Preliminary design concepts for preliminary preferred alternative solution have been prepared and will be updated in Phase 3.

We are here



# Problem / Opportunity Statement

- A Problem / Opportunity Statement identifies the problem to be addressed by the EA Study *and* associated potential opportunities.



## **Project Problem / Opportunity Statement**

The problem that this Class EA will address is the poor condition of the Killarney Municipal Wharf. Allowing the wharf to continue in its current condition without intervention would result in its continued deterioration, negatively impacting its ability to carry out its community role.

Addressing the poor condition of the wharf presents opportunities for the Municipality. These include ensuring the wharf is better able to resist potential climate change impacts (such as elevated water levels) and increasing its potential for community use.



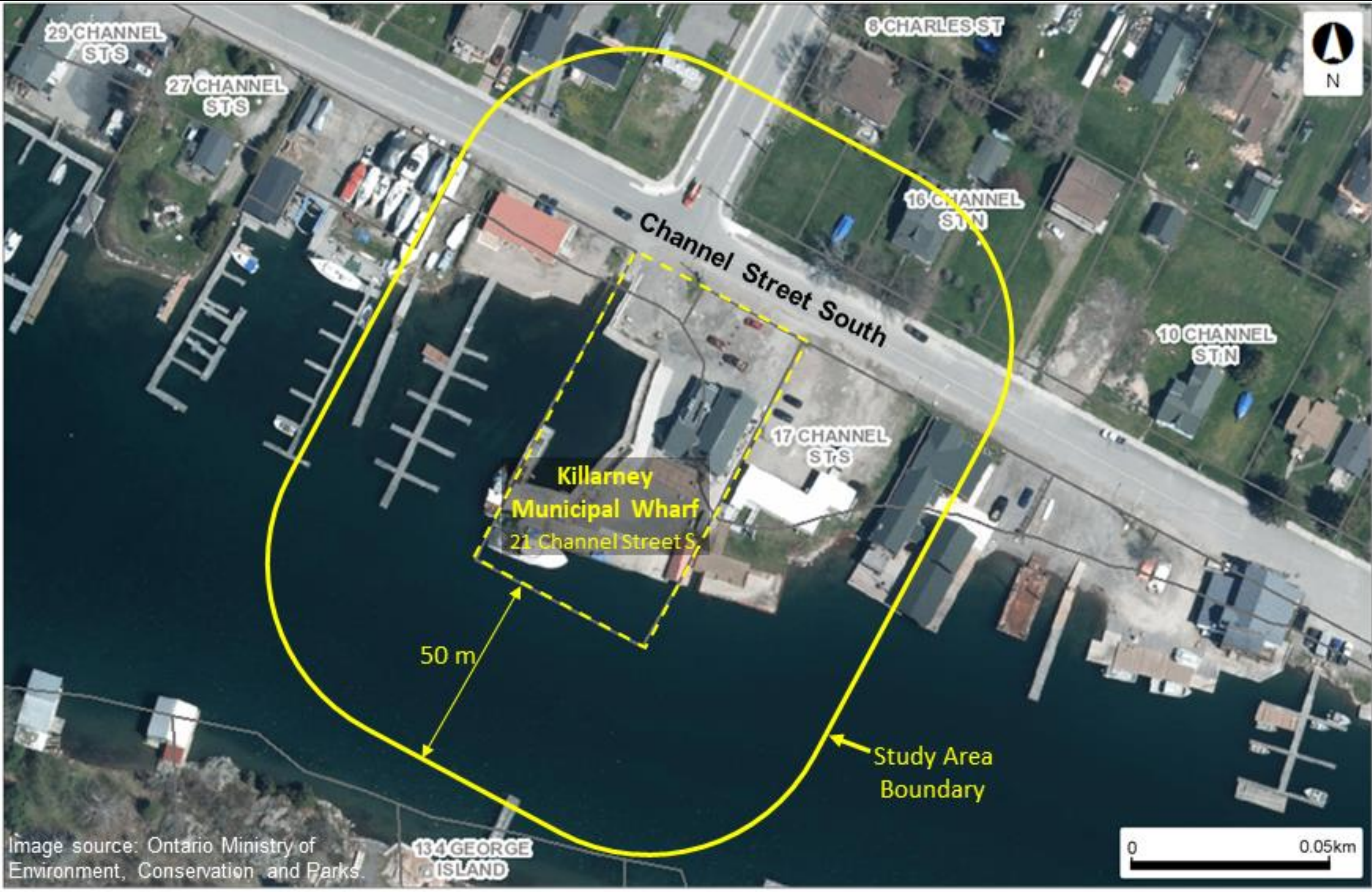


# Study Area

The Municipal wharf is located at 21 Channel Street South in the Village of Killarney.

The land is owned by the Municipality.

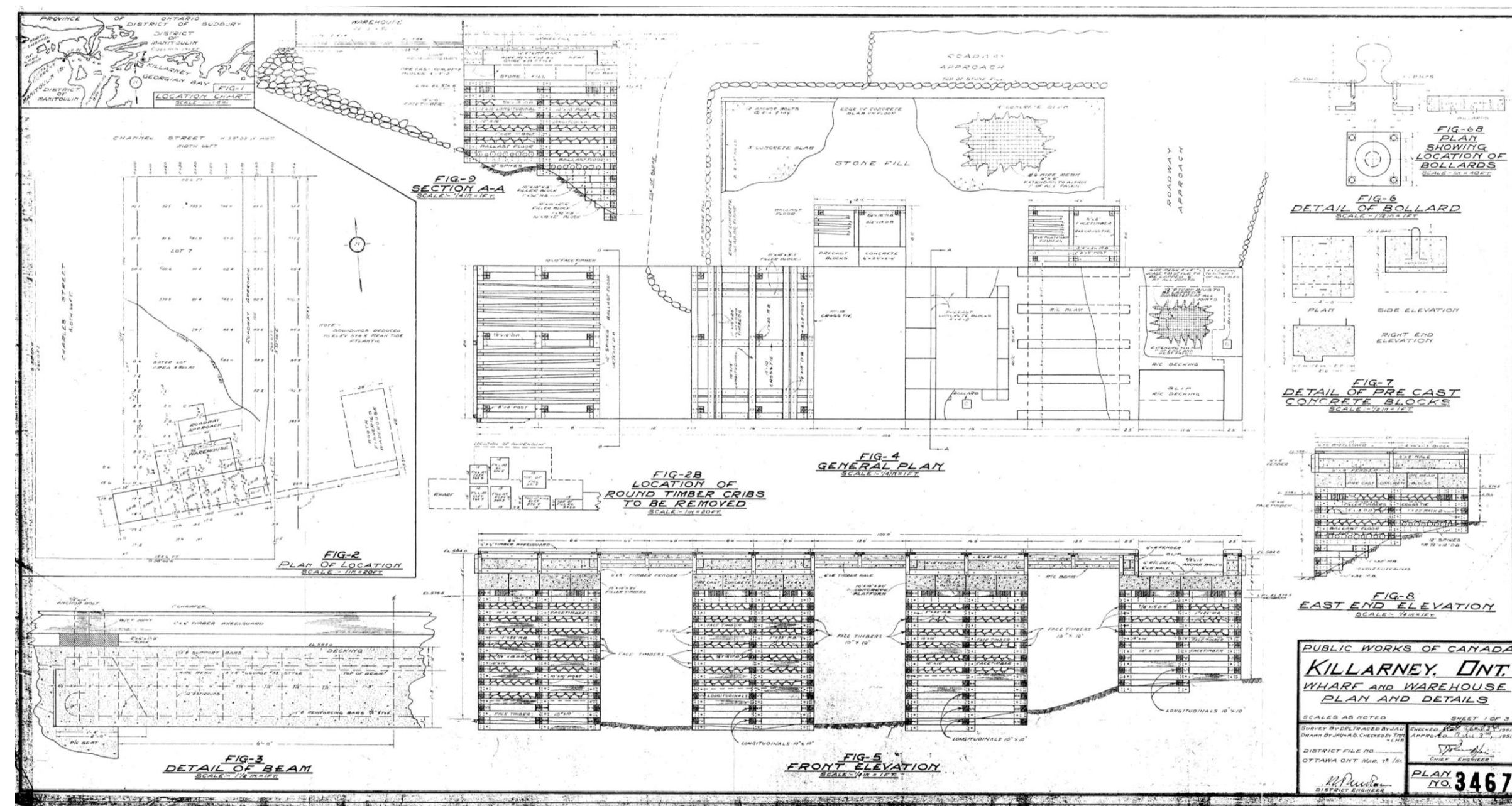
The study area boundary extends approximately 50m outward from the municipal property.



# Project Background

## Wharf Construction

- A portion of the wharf was built in 1951 by Public Works of Canada. The wharf was built using a rock-filled timber crib construction, including a concrete deck surface along the south edge along the water.
- The wharf has undergone a number of upgrades and repairs since the original 1951 construction, including significant upgrades in 2013.
- Some of the rock-filled timber cribs built in 1951 are still in use today.



Wharf Design Plans, 1951



Underside of South Dock on East Side

## Condition of Wharf

- The south-east section of the wharf has a concrete deck and wood curb on the south edge along the water. The area behind the concrete dock has been losing fill, which means the crib is losing its ability to retain it.
- Lightweight fill in the form of large polystyrene blocks were previously buried behind the dock to relieve earth pressure against the structure. However, uplift forces due to higher-than-expected water levels appear to have pushed the blocks upward, causing extensive damage to the area. Pre-cast concrete barriers have been used as counterweights as a short-term precaution measure.



# Project Background

## Flooding

- The wharf has in recent years been impacted by high-water levels in the Great Lakes
- In 2019 and 2020, the water level in Georgian Bay approached record levels of about 177.5 m. This submerged the north and north-east docks, which have a top of deck elevation of 177.38 m. This left them inaccessible to boaters and visiting tourists.
- It also likely increased the uplift faced by the polystyrene fill blocks buried behind the dock.



## Wharf Assessment (2020)

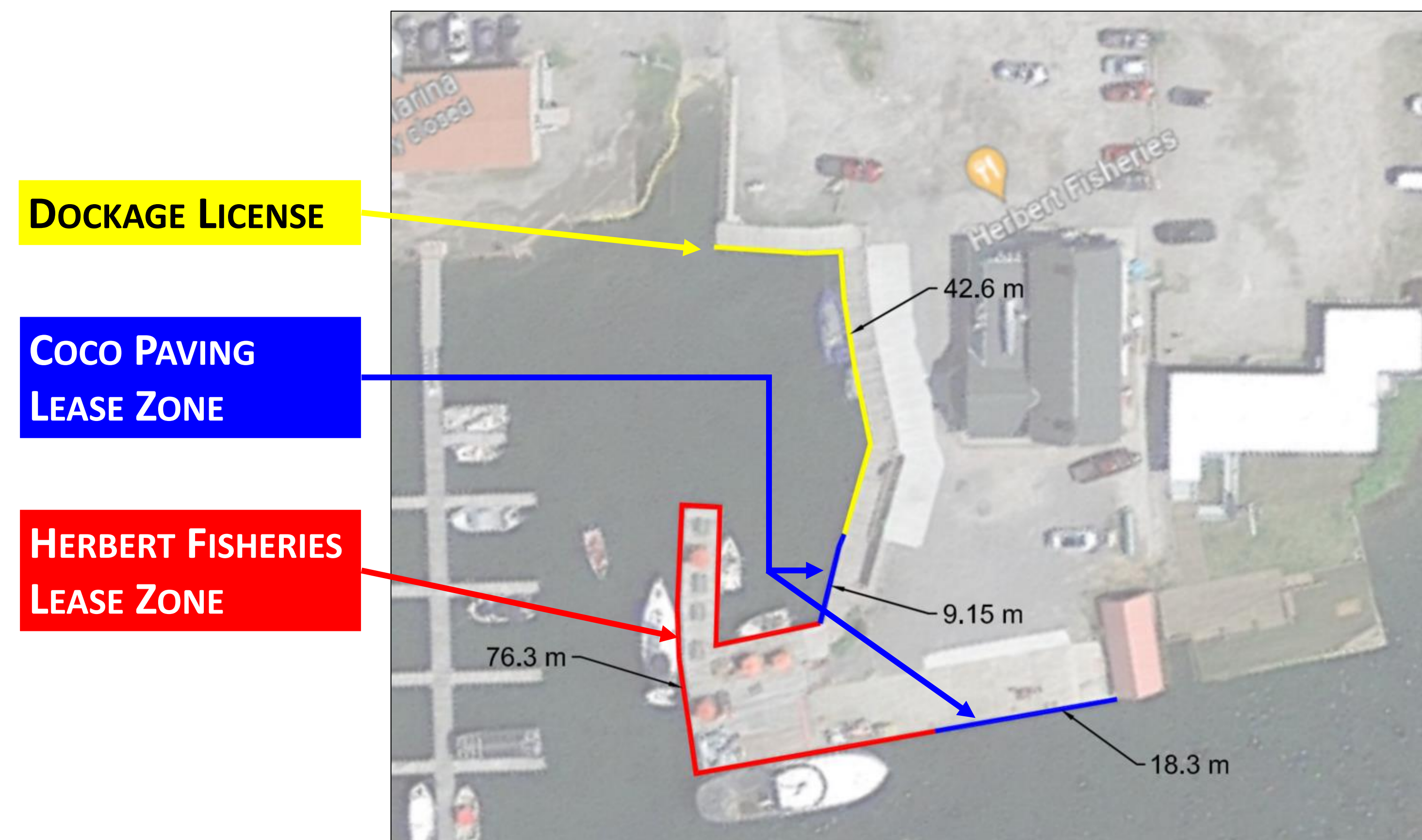
- In November 2020, the Municipality undertook an assessment of wharf upgrades to address the issues related to deterioration and water elevation. The assessment identified two feasible upgrade alternatives, which included:
  - A short-term solution that would raise the lower north and east docks to the same elevation as the main concrete dock at the south; and
  - A long-term solution that would reconstruct the wharf to a higher deck elevation, providing increased freeboard to the record high water level of Lake Huron.
- The Municipality determined that the preferred option would be to reconstruct the wharf, and the wharf redesign process was initiated.
- The Municipality's wharf design consultant (EXP) developed two alternative designs for the wharf reconstruction. The designs include a sea wall, which resulted in the need for the project to be undertaken as a Class EA (i.e., this EA study).
- This Class EA study will be used to confirm the preferred alternative solution (reconstruction of the wharf) and to identify a preferred design alternative.



# Project Background

## Wharf Leases

- Municipality leases space along the wharf to Coco Paving and Herbert Fisheries for commercial uses.
- Space is also available for public dockage.
- Alternative solutions and designs are to minimize potential impacts to availability of dockage to lease holders while maximizing public dockage space.



## Opportunity for a Public Space

- The Village of Killarney is the largest settlement in the Municipality.
- Killarney's economy is heavily dependent on tourism and recreation.
- Tourists are drawn to the area by the area's nearby parks (Killarney Provincial Park and French River Provincial Park) and natural wilderness, lakes and forests.
- Revitalization of the wharf provides an opportunity to enhance its use as a public space. This would help to support the community's accommodation, retail and food service businesses while providing a desirable community feature for permanent and seasonal residents.





# Alternative Solutions – Identification

- Four alternative solutions were considered to address the problem statement.

## 1. Raise the North and East Docks

- This would be a short-term option that involves raising the lower north and east docks to the same elevation as the main concrete docks at the south.

## 2. Reconstruct the Wharf

- This is a long-term solution that includes reconstructing the wharf to a higher deck elevation, which would provide increased freeboard to Georgian Bay, and to Lake Huron's record-high water levels.

## 3. Build a New Municipal Wharf

- This solution would see the Municipality build a new Municipal Wharf in a new location.

## 4. Do Nothing

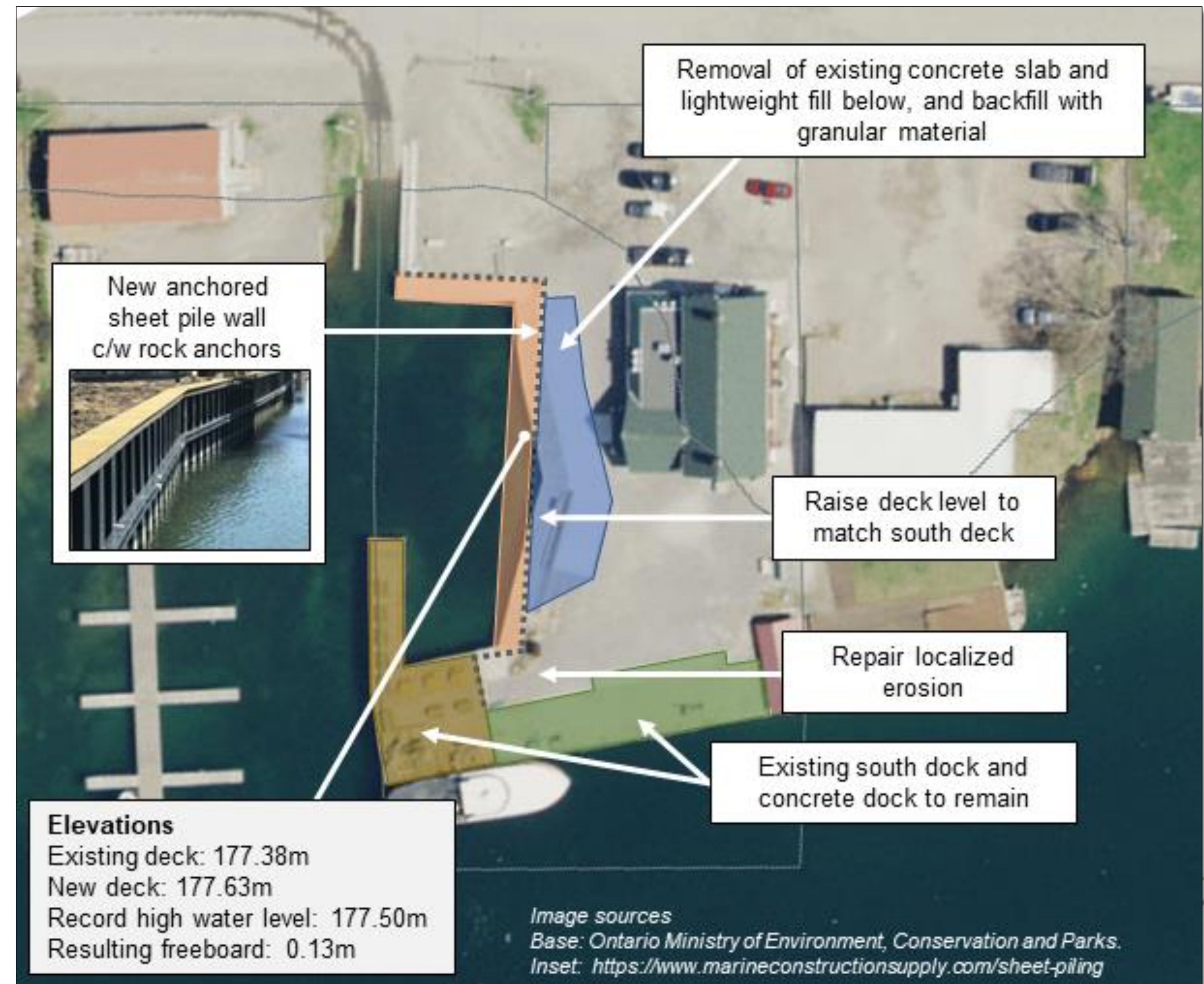
- This alternative is the “base-case” alternative that would see the Municipality do nothing and leave the wharf as-is.

- These alternative solutions are discussed on the following display boards.

# Alternative Solutions – Identification

## 1. Raise the North and East Docks

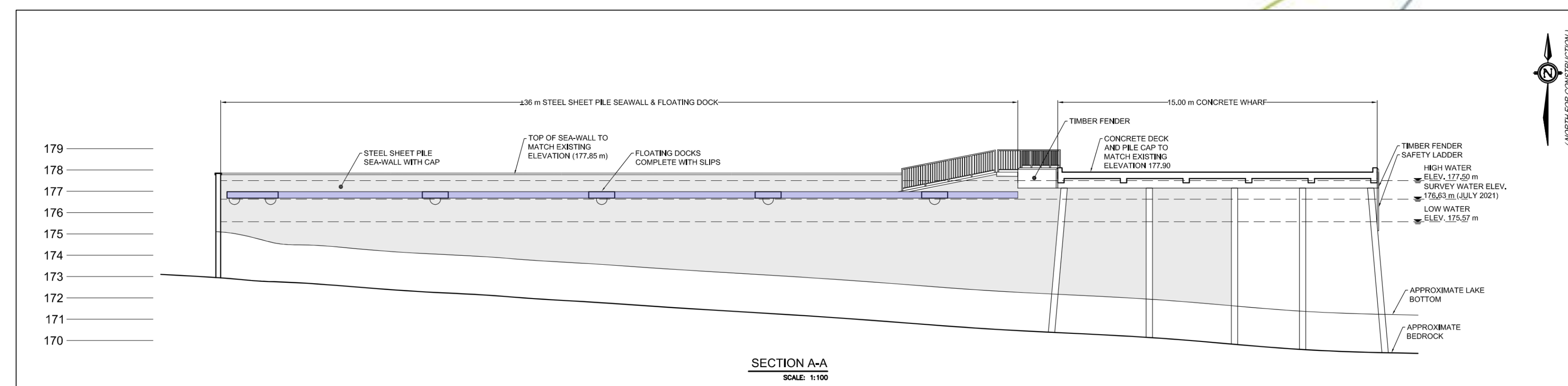
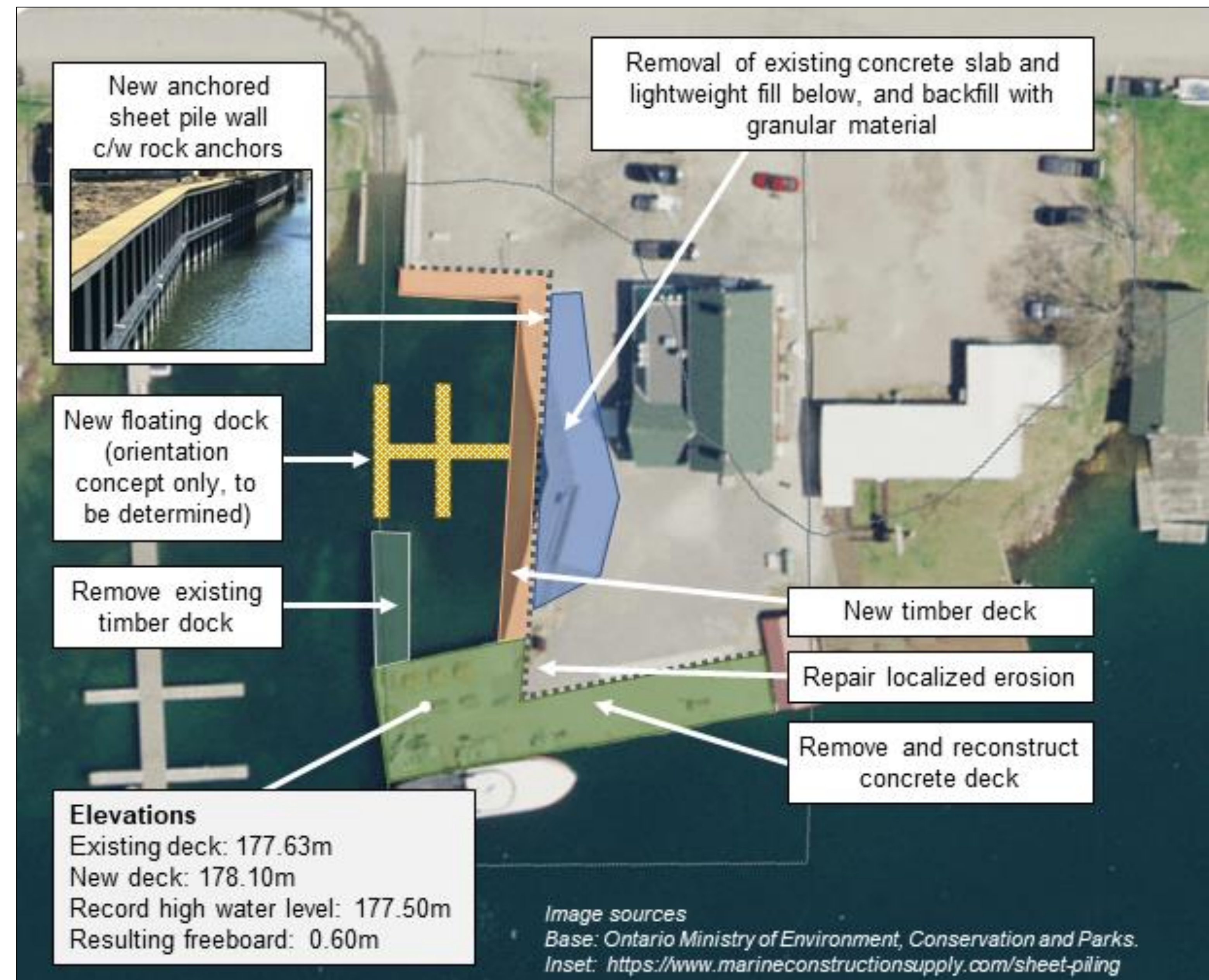
- a) An anchored sheet pile wall would be placed at the front of the existing timber structure.
- b) The north and east docks would be raised to match the average south dock elevation of 177.63 m.
- c) The sheet pile wall would reinforce the existing crib structures and retain the additional fill behind them.
- d) The existing concrete slab behind the east dock and the lightweight fill below it would be removed and replaced with granular material, which would be graded to the new deck elevation. This would repair the erosion/sink hole in the parking lot.
- e) While option would raise the wharf slightly above the highest recorded water level, the wharf may still be susceptible to wave action, and water may still wash over the deck surface in high-wind conditions.
- f) Estimated cost for engineering and construction: \$943,000.



# Alternative Solutions – Identification

## 2. Reconstruct the Wharf

- a) Reconstruction of the municipal wharf at a higher elevation.
- b) North deck elevation to be raised by 0.72m and the and south deck by 0.3 m, bringing both to an elevation of 178.10m. This provides a freeboard of 0.60m compared to the record high water level of Georgian Bay.
- c) The layout of the reconstructed wharf would generally match the existing configuration, except for the removal of the finger dock at the south-west corner of the wharf. Potential to extend concrete dock about 1m further into channel, providing larger usable area.
- d) Removal of the finger dock would allow for new floating docks to be installed on the small craft basin by the boat launch, providing dockage for small recreational boats.
- e) A mooring area for larger commercial vessels would remain on the south side of the wharf by the main channel.
- f) Construction of the north dock would generally consist of steel sheet pile seawalls with anchors to the underlying bedrock and floating docks with timber deck.
- g) The south dock would consist of steel tube piles anchored into into the bedrock to support a concrete deck, for commercial vessels.
- h) The existing concrete relief slab behind the east dock and the lightweight fill below would be removed, and the entire parking lot regraded to the new wharf elevation.
- i) Estimated cost for engineering and construction: \$2,772,000.





# Alternative Solutions – Identification

## 3. Build a New Municipal Wharf

- a) Build a new municipal wharf in a new location on a separate property.
- b) It was assumed that the new location would be located along Channel Street to ensure the municipal wharf retains an accessible location for the community.

**This Alternative Solution was determined to be Not Feasible, in part for the following reasons:**

- Based on a mapping review for the Village, there are no vacant properties along Channel Street suitable for construction of a new municipal wharf. The municipality would be required to either purchase a property along Channel Street to redevelop as a municipal wharf or obtain a property to the west or east of the channel.
- This option would result in a significant delay in the design and construction of the wharf due to the time required for property acquisition and regulatory approvals.
- This option would be much more costly compared to either alternative solutions 1 or 2.
- Building a new wharf at a different location would turn the existing wharf into a redundant asset that the Municipality would still need to maintain.
- **Note:** *The municipality has recently purchased Channel Marina, which is located directly west of the municipal wharf. The municipality's plans for Channel Marina are to be confirmed; however, it is not feasible as a new municipal wharf location due to land area and the items noted above.*

## 4. Do Nothing

- a) The Do-Nothing scenario is the standard base-case scenario against which the other alternatives are considered.
- b) The municipality would not undertake any upgrades to the wharf, beyond superficial repairs.
- c) While least costly scenario in the short-term, potential implications include:
  - Superficial repairs to sink holes and erosion would not address structural issues, and fill would likely to continue escaping, creating new sink holes.
  - Future high-water levels would continue to impact the wharf's ability to function and increase structural damage.
  - High-water levels would increase risk of existing lightweight fill "floating" to the surface.
  - Public's use of wharf would likely need to be curtailed or prohibited as the wharf continues to experience high-water levels and structural damage.
  - Eventually, wharf's structural integrity would degrade to where it becomes a public safety risk.
  - Extent of deterioration may impact Municipality's ability to fulfill its obligations to wharf tenants.

**This Alternative Solution carried forward for evaluation as a base-case scenario.**



# Alternative Solutions – Evaluation

- The alternative solutions were evaluated based on the following evaluation criteria.

## Natural Environment

- Effect on Aquatic Habitat
- Effect on Terrestrial Habitat

## Built Environment

- Effect on Wharf and Associated Facilities
- Alignment with Land-use Planning

## Financial

- Capital Costs
- Operating Costs

## Social Environment

- Effect on Area Users
- Recreational Boating

## Economic Environment

- Effect on Economic Development
- Effect on Municipal Leases

## Technical

- Wharf Longevity
- Climate Change Adaptation

## Cultural Environment


- Effect on Archaeological & Cultural Resources

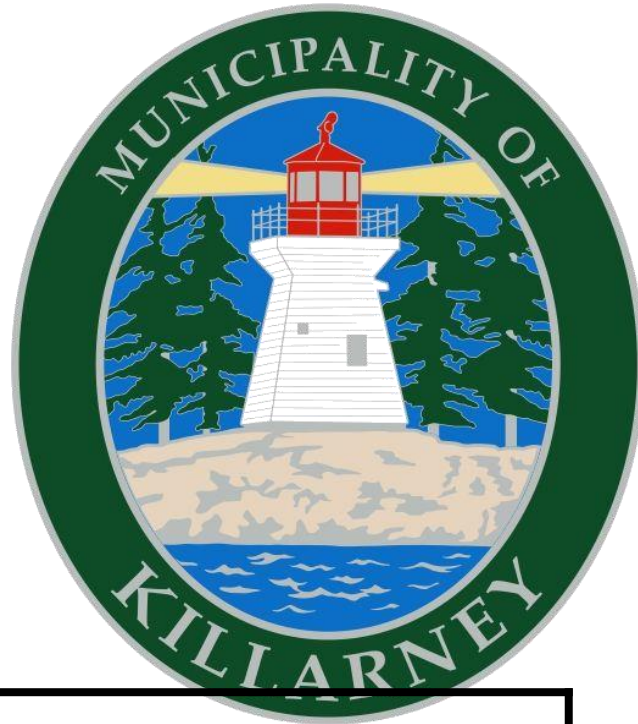
### Evaluation Rating Scale

Preference	Description
Most Preferred	Least Negative Impact and/or Greatest Benefit
Moderately Preferred	Moderate Negative Impact and/or Moderate Benefit
Least preferred	Greatest Negative Impact and/or Least Benefit



# Alternative Solutions – Evaluation Summary (1)

Category / Criteria	Alternative 1: Raising the North and East Docks	Alternative 2: Reconstruction of the Wharf 	Alternative 4: Do Nothing
<b>Natural Environment</b>	Given the nature of the permanent and temporary disturbances to aquatic and terrestrial/avian habitats by and near the wharf, the overall temporary and permanent impacts to aquatic and terrestrial/avian species is low for both Alternatives 1 and 2.  <b>Moderately Preferred</b>	Given the nature of the permanent and temporary disturbances to aquatic and terrestrial/avian habitats by and near the wharf, the overall temporary and permanent impacts to aquatic and terrestrial/avian species is low for both Alternatives 1 and 2.  <b>Moderately Preferred</b>	There would be no temporary or permanent impacts to aquatic and terrestrial/avian habitats in the Do-Nothing alternatives.  <b>Most Preferred</b>
<b>Social Environment</b>	While the anticipated construction disruptions would be shorter than Alternative 2, there would still be the potential future disruptions due to high-water level closures and future repair/replacement works.  Both alternatives 1 and 2 would have increased potential to accommodate recreational boating compared to the existing wharf.  <b>Moderately Preferred</b>	While the anticipated construction disruptions would be longer than Alternative 1, it would lesson potential future disruptions due to high-water level closures and future repair/replacement works.  Both alternatives 1 and 2 would have increased potential to accommodate recreational boating compared to the existing wharf.  <b>Most Preferred</b>	The lack of structural repairs and wharf improvements increases the likelihood of service disruptions and closures at the wharf.  The existing wharf would have less potential to accommodate recreational boating compared to the alternatives 1 and 2.  <b>Least Preferred</b>
<b>Cultural Environment</b>	All three alternatives are equally preferred.  <b>Most Preferred</b>	All three alternatives are equally preferred.  <b>Most Preferred</b>	All three alternatives are equally preferred.  <b>Most Preferred</b>
<b>Built Environment</b>	Alternatives 1 and 2 would be better able to accommodate docking areas and on-site amenities compared to the Do Nothing alternative while aligning with the site's existing defined land uses.  <b>Most Preferred</b>	Alternatives 1 and 2 would be better able to accommodate docking areas and on-site amenities compared to the Do Nothing alternative while aligning with the site's existing defined land uses.  <b>Most Preferred</b>	The continued deteriorating conditions resulting from the Do Nothing alternative have a negative impact on wharf usage compared to Alternatives 1 and 2. .  <b>Least Preferred</b>
<b>Economic Environment</b>	Alternative 1 provides similar economic benefits and opportunities compared to Alternative 2, but these would be disrupted in the future for a second round of repair or replacement works. It also allows the Municipality to meet the terms of the municipal wharf leases.  <b>Moderately Preferred</b>	Alternative 2 provides similar economic benefits and opportunities compared to Alternative 1, while avoiding the need for disruptions in the future for a second round of repair or replacement works. It also allows the Municipality to meet the terms of the municipal wharf leases.  <b>Most Preferred</b>	The deteriorating conditions resulting from the Do Nothing alternative degrade the potential for local business activities and economic opportunities. They could also potentially impact the Municipality's ability to meet the terms its municipal wharf leases.  <b>Least Preferred</b>



# Alternative Solutions – Evaluation Summary (2)

Category / Criteria	Alternative 1: Raising the North and East Docks	Alternative 2: Reconstruction of the Wharf 	Alternative 4: Do Nothing
<b>Technical</b>	<p>Alternative 1 would be a solution for the short to mid-term, but future wharf upgrades and repairs would be required for the south docks. The wharf under Alternative 1 would also be less resilient to extreme weather events compared to Alternative 2.</p> <p style="text-align: center;"><b>Moderately Preferred</b></p>	<p>Alternative 2 provides a long-term solution that provides the greatest resilience to future extreme weather events.</p> <p style="text-align: center;"><b>Most Preferred</b></p>	<p>The Do Nothing alternative negatively impacts the wharf's longevity and is vulnerable to extreme weather events.</p> <p style="text-align: center;"><b>Least Preferred</b></p>
<b>Financial</b>	<p>Alternative 1 is moderately preferred as it likely will have higher long-term capital costs compared to Alternative 2, but lower operating costs compared to the do-nothing alternative. It also would have lower financial risk to the municipality compared to the do-nothing alternative.</p> <p style="text-align: center;"><b>Moderately Preferred</b></p>	<p>Alternative 2 is most preferred as it likely will have lower long-term capital costs compared to Alternative 1 and lower operating costs compared to the do-nothing alternative. It also would have lower financial risk to the municipality compared to the do-nothing alternative.</p> <p style="text-align: center;"><b>Most Preferred</b></p>	<p>The Do Nothing alternative is least preferred. While it has the lowest capital cost, the operating costs compared to alternatives 1 and 2 would be higher. It also would have higher financial risk to the municipality due to issues of liability.</p> <p style="text-align: center;"><b>Least Preferred</b></p>
<b>Evaluation Summary</b>	<p>Alternative 1 is moderately preferred compared to Alternative 2. It is a short to mid-term that, like Alternative 2, will allow the Municipality to continue meeting its obligations under the wharf lease while providing opportunities for increased economic benefits arising from greater community use of the wharf. However, these activities would be disrupted due to the eventual needed repair or replacement of the south dock.</p> <p>Alternative 1 also provides less resilience to potential future climate change impacts, including high-water levels and extreme weather events.</p> <p>Any potential permanent and temporary disturbances to aquatic and terrestrial/avian habitats by and near the wharf are anticipated to be minor.</p> <p>Alternative is likely to higher long-term capital costs compared to Alternative 1, but less financial risk compared to the Do Nothing alternative due to issues of liability. Operating costs for Alternatives 1 and 2 would be similar and less than the Do Nothing alternative.</p> <p style="text-align: center;"><b>Moderately Preferred</b></p>	<p>Alternative 2 is most preferred because it is a long-term solution that allows the Municipality to continue meeting its obligations under the wharf lease while providing opportunities for increased economic benefits arising from greater community use of the wharf. This alternative also avoids the potential future disruptions that would be caused by the eventual needed repair or replacement of the south dock.</p> <p>Alternative 2 also provides the greatest resilience to potential future climate change impacts, including high-water levels and extreme weather events.</p> <p>Any potential permanent and temporary disturbances to aquatic and terrestrial/avian habitats by and near the wharf are anticipated to be minor.</p> <p>Alternative is likely to have the lowest long-term capital costs and less financial risk compared to the Do Nothing alternative due to issues of liability. Operating costs for Alternatives 1 and 2 would be similar and less than the Do Nothing alternative.</p> <p style="text-align: center;"><b>Most Preferred</b></p>	<p>The Do Nothing alternative is least preferred because it provides no extra economic opportunities and does nothing to avoid the continued degradation of the wharf, which could threaten public safety and the Municipality's ability to meet its obligations under the wharf lease.</p> <p>The wharf under the Do Nothing alternative continues to be vulnerable to potential future climate change impacts, including high-water levels and extreme weather events.</p> <p>Alternative is likely to have the lowest long-term capital costs and less financial risk compared to the Do Nothing alternative due to issues of liability. Operating costs for Alternatives 1 and 2 would be similar to each other and would also be less than the Do Nothing alternative.</p> <p style="text-align: center;"><b>Least Preferred</b></p>



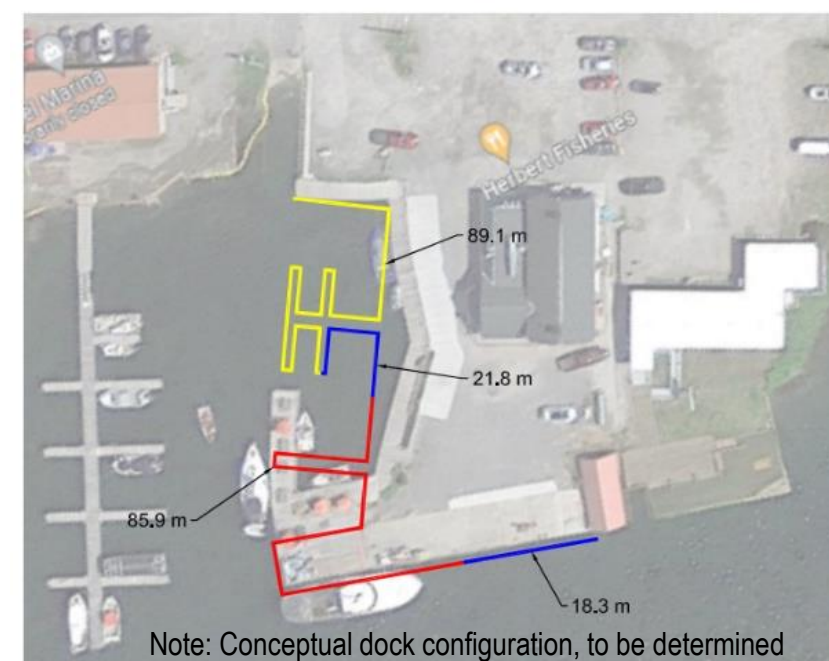


# Preliminary Alternative Designs

## Conceptual Layout A



EXISTING MOORING LENGTH  
SCALE: 1:750



Note: Conceptual dock configuration, to be determined

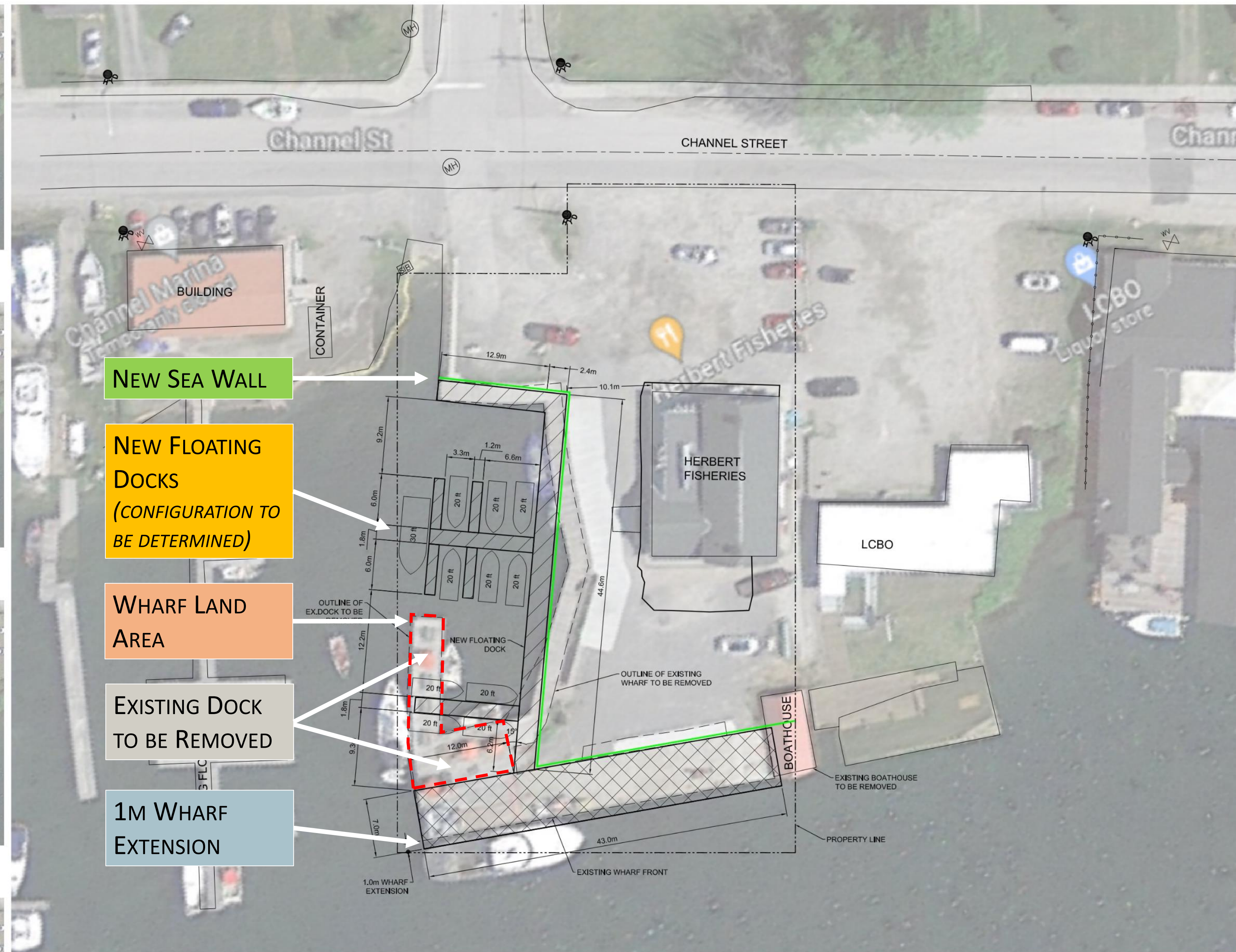
NEW MOORING LENGTH  
SCALE: 1:750



EXISTING SHORE AREA  
SCALE: 1:750



NEW SHORE AREA  
SCALE: 1:750



CONCEPTUAL SITE PLAN  
SCALE: 1:250

LEGEND	
E/P	EXISTING EDGE OF PAVEMENT
CL	EXISTING CENTER LINE
Crb	EXISTING CURB
	EXISTING EDGE OF SIDEWALK
	EXISTING BOATRAMP
	EXISTING PATIO
	EXISTING CONCRETE PAD
	EXISTING FENCELINE
	EXISTING RETAINING WALL
	DOCKAGE LICENSEE
	COCO PAVING LEASE ZONE
	HERBERT LEASE ZONE
	EARTH RETAINING STRUCTURE
(MH)	EXISTING MAN HOLE
	EXISTING HYDROPOLE AND GUIDEWIRES
PART 1	DRAFT PLAN LOT NUMBERS
(SIB)	EXISTING PROPERTY BARS
	EXISTING STORM WATER DRAIN
(WV)	EXISTING WATERVALVE
	FLOATING DOCK
	CONCRETE DOCK ON PILES
	EXISTING BUILDING
	EXISTING BUILDING
	EXISTING BUILDING
BM#1 ELEV. 177.926m	SITE BENCHMARKS ARE ROUND IRON BARS IN GROUND ESTABLISHED BY EXP SURVEYORS DEC.21 2021
BM#2 ELEV. 178.234m	

PROJECT GENERAL INFORMATION	
LOCATION:	KILLARNEY MUNICIPAL WHARF (N45.907, W81.513) KILLARNEY, ONTARIO
PROJECT SCOPE:	REMOVE AND RE-CONSTRUCTION OF ENTIRE MUNICIPAL WHARF WITH POSSIBLE SOUTH SIDE EXPANSION, PENDING AGENCY APPROVAL.
EXISTING WHARF CONSTRUCTION:	ROCK-FILLED TIMBER CRIBS SUBSTRUCTURE, COMBINATION OF TIMBER AND CONCRETE DECK SUPERSTRUCTURE.
PROPOSED WHARF CONSTRUCTION:	STEEL TUBE PILES AND SHEET PILE SUBSTRUCTURE, COMBINATION OF TIMBER AND CONCRETE DECK SUPERSTRUCTURE, FLOATING DOCK, 8 SLIPS



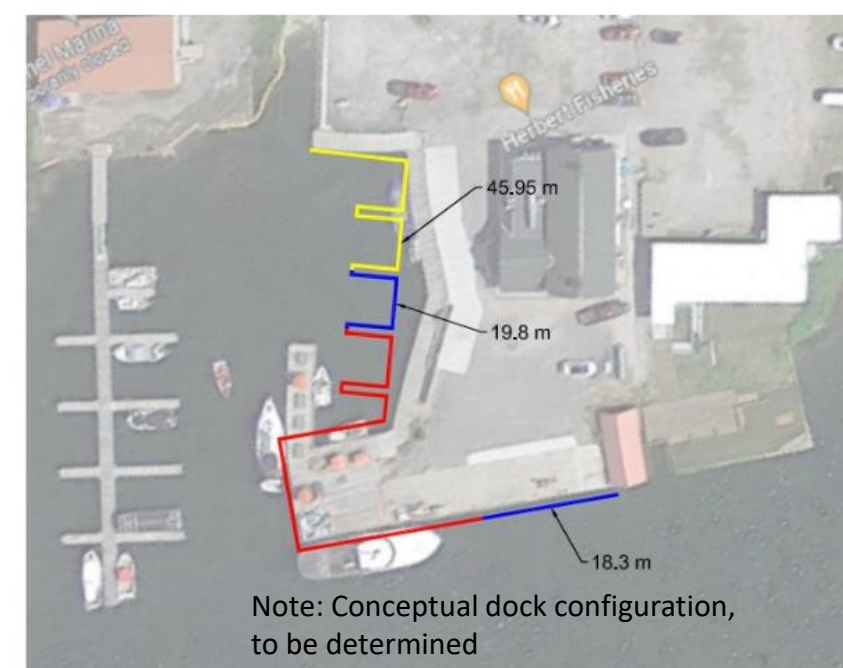
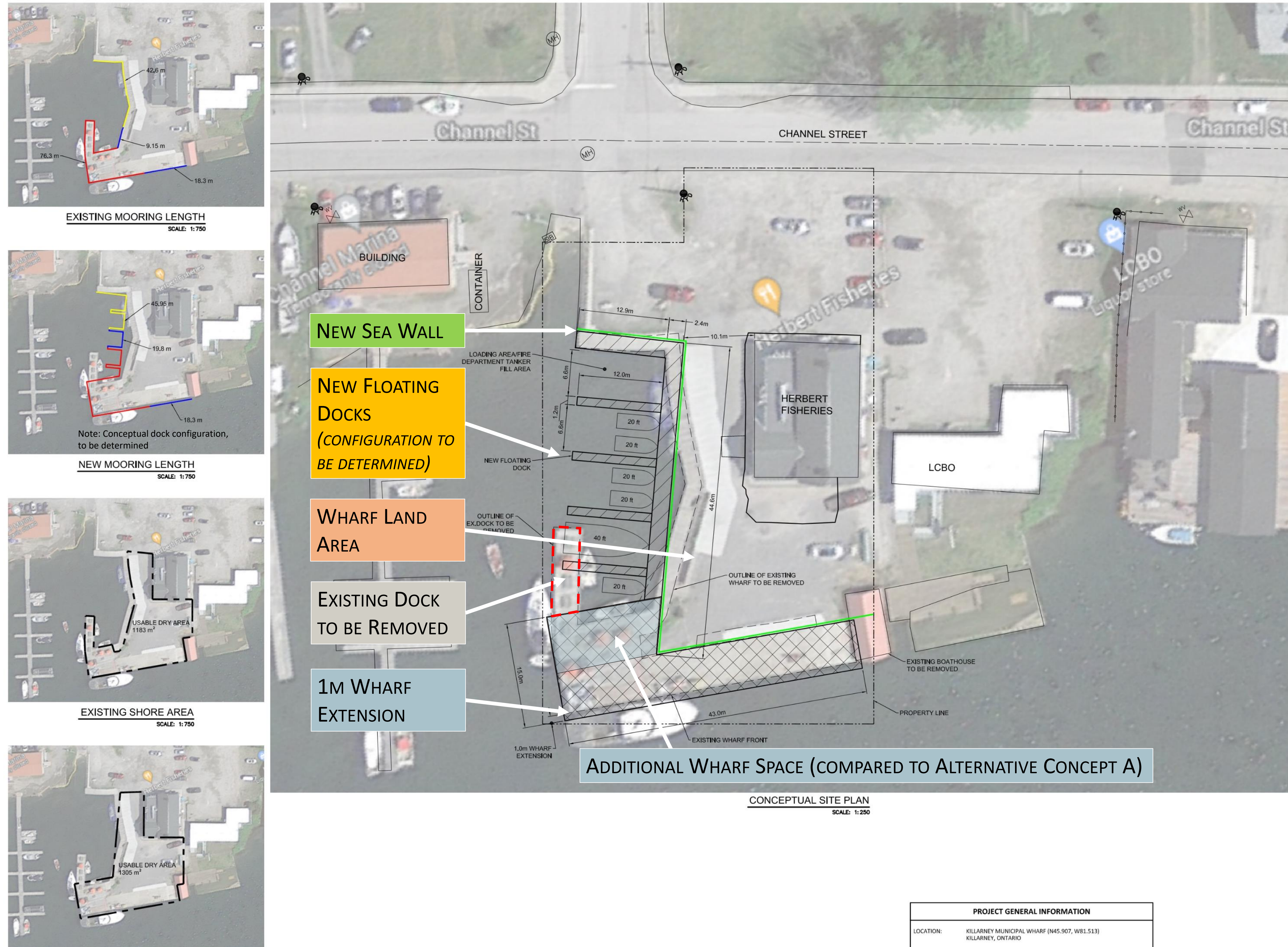
SCALE 1:250  
METRES





# Preliminary Alternative Designs

## Conceptual Layout B



LEGEND	
E/P	EXISTING EDGE OF PAVEMENT
CL	EXISTING CENTER LINE
Crb	EXISTING CURB
	EXISTING EDGE OF SIDEWALK
	EXISTING BOATRAMP
	EXISTING PATIO
	EXISTING CONCRETE PAD
	EXISTING FENCELINE
	EXISTING RETAINING WALL
	DOCKAGE LICENSEE
	COCO PAVING LEASE ZONE
	HERBERT LEASE ZONE
	EARTH RETAINING STRUCTURE
(MH)	EXISTING MAN HOLE
	EXISTING HYDROPOLE AND GUIDEWIRES
PART 1	DRAFT PLAN LOT NUMBERS
(SIB)	EXISTING PROPERTY BARS
	EXISTING STORM WATER DRAIN
(WV)	EXISTING WATERVALVE
	FLOATING DOCK
	CONCRETE DOCK ON PILES
	EXISTING BUILDING
	EXISTING BUILDING
	EXISTING BUILDING
	EXISTING BUILDING
BM#1 ELEV. 177.926m	SITE BENCHMARKS ARE ROUND IRON BARS IN GROUND ESTABLISHED BY EXP SURVEYORS DEC.21 2021
BM#2 ELEV. 178.234m	

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PROPOSED WHARF CONSTRUCTION:	STEEL TUBE PILES AND SHEET PILE SUBSTRUCTURE, COMBINATION OF TIMBER AND CONCRETE DECK SUPERSTRUCTURE, FLOATING DOCK, 8 SLIPS

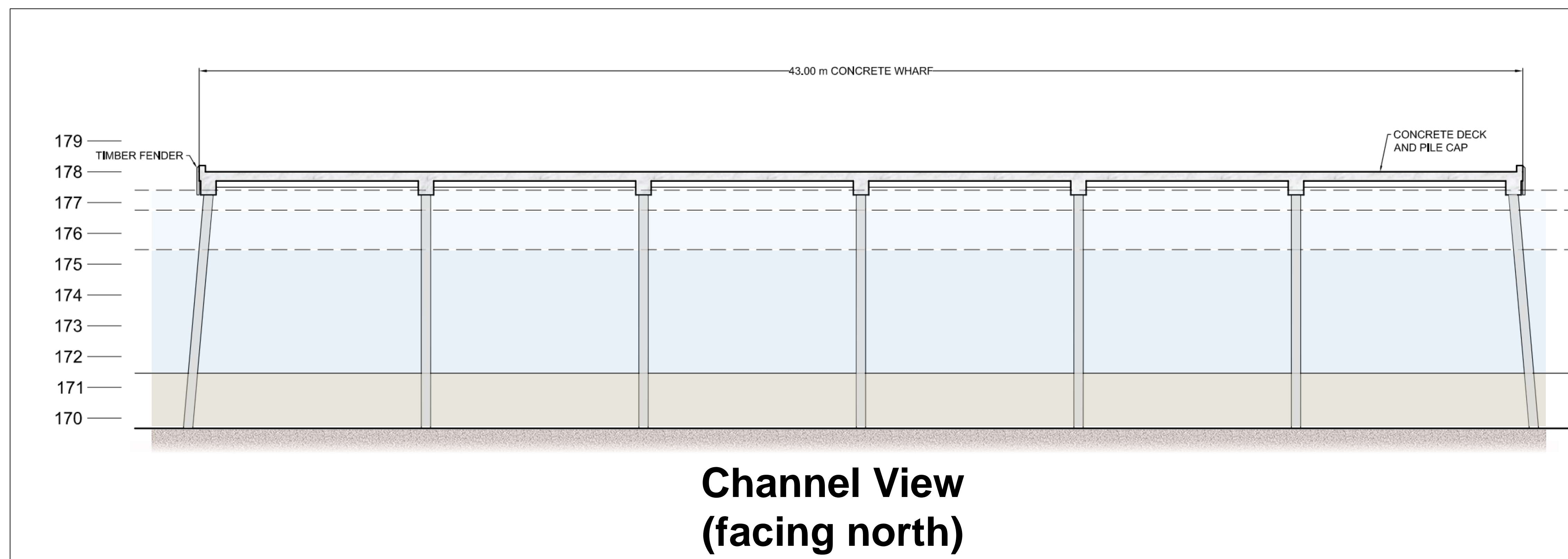
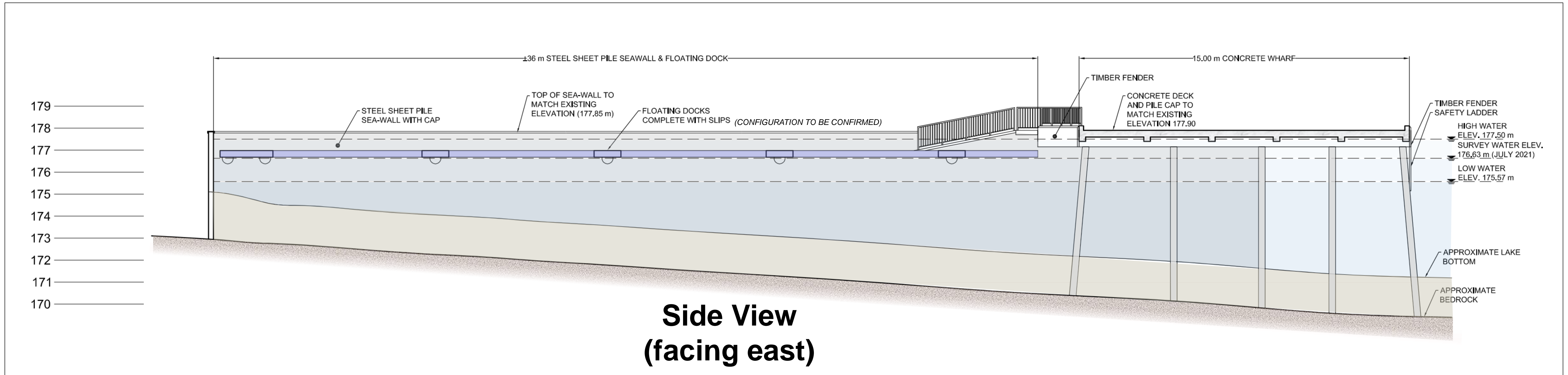


DATE: 01/07/2023  
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# Preliminary Alternative Designs

## Typical Cross Sections





# Next Steps

Review comments from Public Open House.

Confirm or update preferred alternative solution.

Based on feedback, update and evaluate alternative designs.

Present evaluation results and recommended alternative design to public (Public Open House #2).

Based on feedback, confirm preferred alternative design.

Prepare EA Report and circulate for public review.





# We Want to Hear from You!

- Please take a comment sheet to fill in now or send in by **Wednesday, March 1, 2023.**
- E-mail or mail us your comments:
  - Kelly Champaigne  
Project Manager  
Municipality of Killarney
  - 32 Commissioner Street  
Killarney, ON P0M 2A0
  - [kchampaigne@municipalityofkillarney.ca](mailto:kchampaigne@municipalityofkillarney.ca)



To view these display boards online, please visit:  
<http://municipalityofkillarney.ca/municipal-wharf/>

