



20 Corporate Park Drive  
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## **Shoreline Protection Assessment**

Pleasant Beach Shoreline Access – Port Colborne

September 20, 2023

Attention: Mathew Pilon

Rankin Coastal Engineering has conducted an assessment of the retaining wall at the Pleasant Beach shoreline access. Our objective was to evaluate the condition of the existing sheet pile wall and provide options for replacement.

### **Condition Survey:**

Our on-site inspection revealed that the shoreline protection wall has failed. There evidence water rushing up the access and getting behind the sheet pile wall, resulting in wash out of the backfill. The sheet pile wall has then globally failed starting at the north end. This has resulted in the full length of wall being compromised from the north end to the lake. See photos below.





### **Conclusion/Recommendations:**

The shoreline protection at Pleasant Beach access needs to be replaced immediately to avoid more erosion of the slope. There are two options that should be looked at to replace this wall. A new sheet pile wall and a stacked armour stone wall.





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The sheet pile wall has a design lifespan of 100 years. It has a deeper embedment to better protect from scour. It is a vertical wall that will not take up any width of the existing access. A sheet pile wall will easily connect into the existing steel sheets at the lake.

The armour stone wall has a design lifespan of 75 years. It is a stepped wall so some width of the existing access may need to be taken. It will be harder to connect into the existing sheets at the lake.

Rankin construction has prepared high level cost estimates for both options with preliminary drawings:

Approximately 66m of armour stone wall per attached sketch +/- \$475,000.00 +HST

Approximately 66m of sheet pile wall with tie backs per attached sketch +/- \$600,000.00 +HST

Both of these options are based on final engineered design. Note the sheet pile design requires a certain depth before bed rock is encountered. A test dig will need to be completed to confirm the depth of bedrock for a new sheet pile wall.

Engineering services for final design: Survey, Engineered Drawing, Final Quotes, Assistance with Permits and Applications: \$40,000.00 +HST

Sincerely,

**Rankin Coastal Engineering**

**Thomas Robertson, P.Eng.**