

March 23, 2018

## CONCEPTUAL PIER REDEVELOPMENT

For the Municipality of Greenstone

The Pier and Pavilion located near Poplar Lodge Campground is showing signs of age. Scatliff + Miller + Murray (SMM) was hired to lead in the conceptual redevelopment of this public amenity as concerns have become apparent regarding the Pier's structural integrity, functionality, and general appearance. Through a design process, SMM provided three (3) conceptual plan options for the redevelopment of the existing Pier and Pavilion, each of which explore the potential for other recreation and social amenities in addition to the rehabilitation of the pier and pavilion. The original proposal submitted by SMM outlined the three design options as:

- 1) Site Rehabilitation
- 2) Full Replacement of the Pier and Pavilion
- 3) Trail on Land

Through internal discussions with the design team and insight from structural experts, it was deemed that option 1 wouldn't provide an adequate solution to address the fundamental structure concerns beneath the pier. Additionally, it was brought to our attention that there is a desire to limit / remove any ability for launching motorized boats and/or docking to the pier moving forward, boat activity for options 1-3 is limited to canoe and kayak access. A fourth (4<sup>th</sup>) option was provided by request to provide an additional 'trail on land' scenario, where the existing boat launch infrastructure is to remain. SMM has proposed the following four (4) options:

### Option 1 – Full Replacement of Pier and Pavilion

The objective of this option was to replace both the Pier and Pavilion in their entirety, to meet the original design intent and meet current building requirements. A new support structure, built to modern marine building standards would be required to preserve the longevity of the redeveloped pier. Given the investment required to replace the boardwalk/pier, SMM suggest limiting additional amenities included in Option's 2 + 3 to limit the impact on the overall budget related to the other proposed options.

This option builds upon the idea of the pavilion at the end of the pier as a destination, and provides a number of seating options, either as designated benches and/or large boulders to allow multiple users to engage the site simultaneously. The pavilion in this option is designed to be a direct replacement of the existing structure, while still serving as a focal point for users travelling along the pier as well as to be seen from shore.

Additional planting and boulder edging adjacent to the redeveloped boardwalk/pier is designed to provide visual interest as users travel to and from the pavilion. Selected plants for planting beds will be hardy, and low-maintenance to minimize costs associated with operations. Likewise, the vegetative ground cover will require little to no maintenance and is designed to provide an alternative to travelling exclusively along the boardwalk/pier.

The original boat launch / drop-off area will be redeveloped into a small plaza featuring a seasonal kiosk and rental facility, patio tables and chairs, and additional planting. The kiosk is designed to primarily serve as a seasonal amenity for the Poplar Lodge Campground, providing recreation equipment rentals and snacks to encourage recreational activity and social interaction. Future boat launching activity is planned to be facilitated through the nearby marina.

## **Option 2 – Trail on Land**

The second option takes similar design principles featured in Option 1, and applies them to a trail on land option. The objective of this option was to enhance the user experience through the development of a meandering compacted granular trail, evoking a sense of journey and destination. The character of the trail guides users through a series of planting beds and changing sightlines. Large boulders will take the place of the former pier structure to provide stability for the trail and associated features. Additionally, a small boardwalk is featured to provide a scenic viewing experience out to the open waters of Lake Nipigon.

The pavilion structure is designed to be both an amenity for use as a small picnic shelter, or as a small stage for performances. The surrounding beach area will feature fire pits and natural boulder seating to provide a unique social experience in the evening hours. The design intent is to increase the versatility and adaptability of the Pavilion area to allow for multiple uses long term.

Similar to Option 1, the removal of boat launching activities creates an opportunity to develop and foster a social environment through the integration of a seasonal kiosk, patio chairs and tables, planting beds, and a firewood storage enclosure for use at the designated fire pits.

## **Option 3 – Trail on Land (Basic)**

The third option presents a ‘stripped-down’ alternative to Option 2’s Trail on Land design. The small boardwalk is removed and maintains the granular trail to match the remainder of the proposed trail, while proposed decking, patio tables and chairs, and planting is removed from the boat launch redevelopment plan. Instead, for this option, SMM suggests simply replacing the boat launch with boulder rip rap to prevent any further boating activity while also providing bank stability and a natural aesthetic.

The seasonal kiosk and firewood storage enclosure remain as they were intended to function in Option 2; as amenities to increase recreational and social opportunities for their users. Likewise, the proposed trail, pavilion and surrounding area remain as designed in Option 2 to accomplish the same design intent.

## **Option 4 – Trail on Land (Boat Launch)**

Option 4 presents a scenario where the existing boat launch remains as-is, while the rest of the site resembles a similar approach to that of Option 3 – Trail on Land (Basic). The difference in cost is reflected in the reduced quantity of boulder riprap proposed to fill the void of the removed boat launch infrastructure. Likewise, savings are realized in the costs associated with the demolition and removal of the boat launch.



SEASONAL KIOSK AND RENTAL FACILITY

PLAZA, FEATURING TABLES, CHAIRS AND PLANTING

LED SOLAR CHARGED LIGHT POSTS

BENCH AND LEANING RAIL

EXISTING TREES TO REMAIN

SHRUBS AND SMALL TREES IN PLANTING BED

2x8 PRESSURE TREATED LUMBER PIER,  
FEATURING GALVANIZED SHEET PILES, WOOD  
CURBING

NEW PAVILION, FEATURING VIEWING  
BENCHES, AND LARGE SEATING BOULDERS

LARGE AND SMALL BOULDER EDGING





Cost Estimate

Poplar Lodge Pier Redevelopment

23-Mar-18

Option 1 – Pier Reconstruction

Item	Description	QT.	Unit	Unit Price	Amount	Budget
Removals						
	Boat Launch Removal	1	allow	\$10,000.00	\$10,000.00	
	Existing Tree Removal	1	allow	\$500.00	\$500.00	
	Pier and Support Structure + Pavilion Removal	1	allow	\$75,000.00	\$75,000.00	
						\$85,500.00
Soft Landscaping						
	Low Maintenance Turf (includes 100mm topsoil)	300	sq. m	\$12.00	\$3,600.00	
	Planting Beds (includes topsoil and mulch)	200	sq. m	\$50.00	\$10,000.00	
	Stone Mulch (around existing trees)	100	sq. m	\$20.00	\$2,000.00	
	Small Trees Species	20	each	\$400.00	\$8,000.00	
	Shrubs	100	each	\$75.00	\$7,500.00	
	Rip Rap – Large Boulder Edging (750–1500mm) on geotech fabric	500	sq. m	\$200.00	\$100,000.00	
	Large Boulder Seating (750–1500mm)	6	each	\$800.00	\$4,800.00	
	Rip Rap – Small Boulder Edging (250–750mm) on geotech fabric	50	sq. m	\$200.00	\$10,000.00	
	Sand (approximately 200mm depth)	250	sq. m	\$20.00	\$5,000.00	
						\$150,900.00
Hard Landscaping						
	Granular Surfacing (225mm depth) – to accommodate vehicles	400	sq. m	\$85.00	\$34,000.00	
	Reinforced Poured-in-place Concrete (includes base)	70	sq. m	\$120.00	\$8,400.00	
						\$42,400.00
Pier						
	Pressure Treated Lumber Decking (including wood curb)	250	sq. m	\$225.00	\$56,250.00	
	Pier Support Structure (Galvanized Sheet Piles + Backfill)	90	lin. M	\$2,500.00	\$225,000.00	
	Leaning Rail	20	lin. M	\$350.00	\$7,000.00	
						\$56,250.00
Building Structures						
	New Pavilion Construction (including foundation piles)	1	allow	\$120,000.00	\$120,000.00	
	Renovated Seasonal Kiosk	1	allow	\$25,000.00	\$25,000.00	
						\$120,000.00
Site Furniture						
	Benches	8	each	\$3,500.00	\$28,000.00	
	Picnic Tables	3	each	\$3,500.00	\$10,500.00	
	Kiosk Rental Rack (Lifejackets, Kayaks, Paddles, etc.)	1	each	\$5,000.00	\$5,000.00	
	LED Solar Charged Light Posts (inc. structural base)	6	each	\$15,000.00	\$90,000.00	
						\$133,500.00
				Subtotal	\$845,550.00	
				Contingency (20%)	\$169,110.00	
				Permits Allowance	\$10,000.00	
				Consulting Fees	\$102,466.00	
				Total	\$1,014,660.00	



SEASONAL KIOSK, RENTAL FACILITY,  
AND FIREWOOD STORAGE

PLAZA, FEATURING TABLES, CHAIRS, PLANTING,  
BENCH AND LEANING RAIL

2.0m GRANULAR PATH

BOARDWALK AND LEANING RAIL

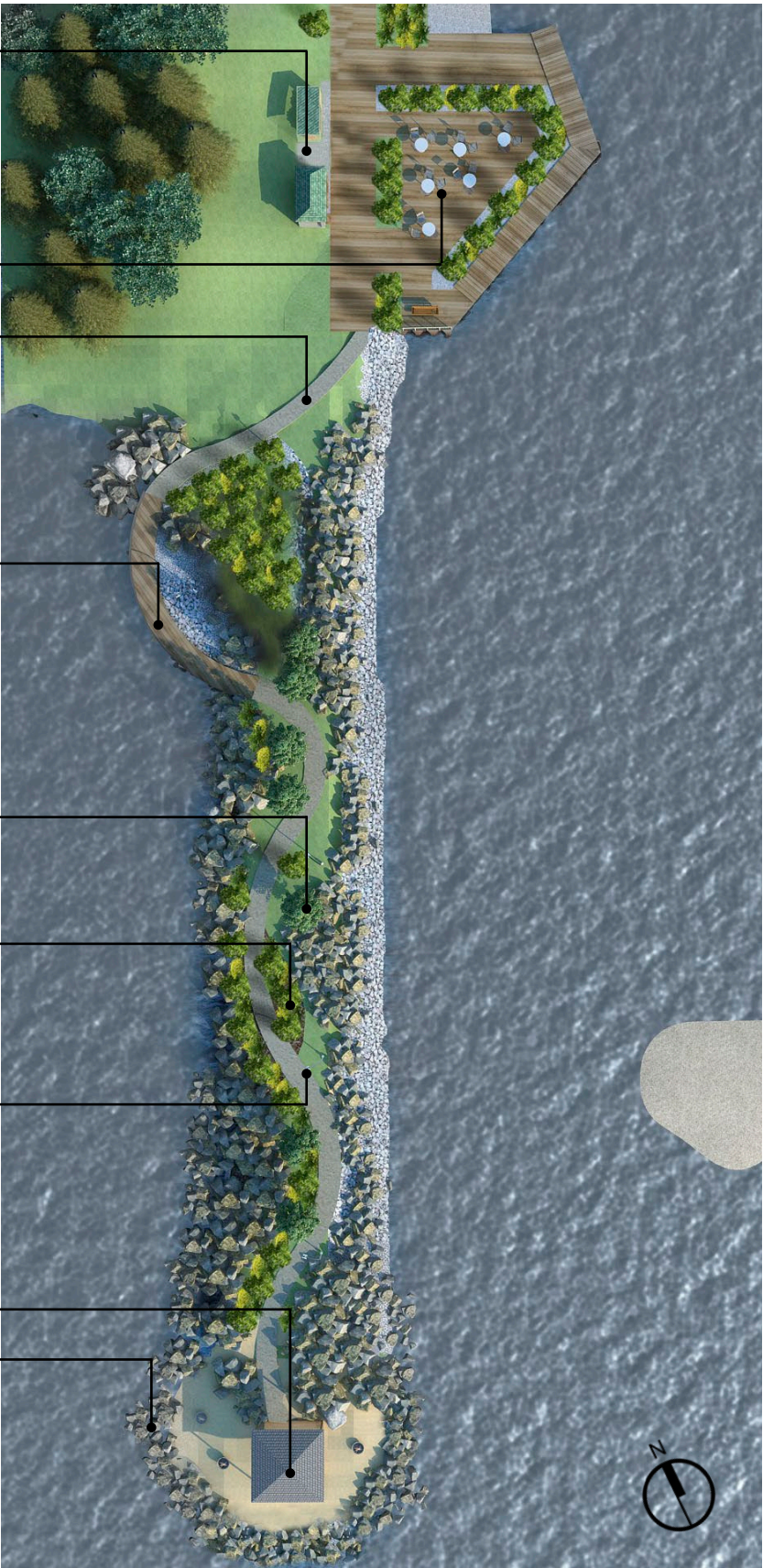
EXISTING TREES TO REMAIN IF POSSIBLE

SHRUBS AND SMALL TREES IN PLANTING BED

LED SOLAR CHARGED LIGHT POSTS

NEW PAVILION, FEATURING A VIEWING  
BENCH, AND FIRE PIT AREAS

LARGE AND SMALL BOULDER EDGING





Option 2 – Trail on Land

Item	Description	QT.	Unit	Unit Price	Amount	Budget
Removals						
	Boat Launch Removal	1	allow	\$10,000.00	\$10,000.00	
	Existing Tree Removal	1	allow	\$500.00	\$500.00	
	Pier and Support Structure + Pavilion Removal	1	allow	\$75,000.00	\$75,000.00	
						\$85,500.00
Soft Landscaping						
	Planting Beds (includes topsoil and mulch)	450	sq. m	\$50.00	\$22,500.00	
	Small Trees Species	40	each	\$400.00	\$16,000.00	
	Shrubs	200	each	\$75.00	\$15,000.00	
	Rip Rap – Large Boulder Edging (750–1500mm) on geotech fabric	360	sq. m	\$200.00	\$72,000.00	
	Rip Rap – Small Boulder Edging (250–750mm) on geotech fabric	560	sq. m	\$200.00	\$112,000.00	
	Sand (approximately 200mm depth)	120	sq. m	\$20.00	\$2,400.00	
						\$239,900.00
Hard Landscaping						
	Granular Surfacing (225mm depth) – to accommodate vehicles	500	sq. m	\$85.00	\$42,500.00	
	Reinforced Poured–in–place Concrete (includes base)	70	sq. m	\$120.00	\$8,400.00	
	Pressure Treated Lumber Decking (Plaza Area)	370	sq. m	\$225.00	\$83,250.00	
						\$134,150.00
Boardwalk						
	Pressure Treated Lumber Decking	25	sq. m	\$225.00	\$5,625.00	
	Boardwalk Support Structure (Treated Lumber Piles + Backfill)	15	lin. M	\$2,500.00	\$37,500.00	
	Leaning Rail	15	lin. M	\$350.00	\$5,250.00	
						\$48,375.00
Building Structures						
	New Pavilion Construction (including foundation piles)	1	allow	\$120,000.00	\$120,000.00	
	Firewood Storage Facility	1	allow	\$5,000.00	\$5,000.00	
	Renovated Seasonal Kiosk	1	allow	\$25,000.00	\$25,000.00	
						\$150,000.00
Site Furniture						
	Benches	9	each	\$3,500.00	\$31,500.00	
	Picnic Tables	6	each	\$3,500.00	\$21,000.00	
	Kiosk Rental Rack (Lifejackets, Kayaks, Paddles, etc.)	1	each	\$5,000.00	\$5,000.00	
	Fire Pits	3	each	\$2,000.00	\$6,000.00	
	LED Solar Charged Light Posts (inc. structural base)	6	each	\$15,000.00	\$90,000.00	
	Leaning Rail	5	Lin. M	\$350.00	\$1,750.00	
						\$155,250.00
					Subtotal	\$813,175.00
					Contingency (20%)	\$162,635.00
					Permits Allowance	\$10,000.00
					Consulting Fees	\$98,581.00
					Total	\$975,810.00

SEASONAL KIOSK, RENTAL FACILITY,  
AND FIREWOOD STORAGE

BOAT LAUNCH REPLACED WITH BOULDER RIP  
RAP FOR RETAINING

2.0m GRANULAR PATH

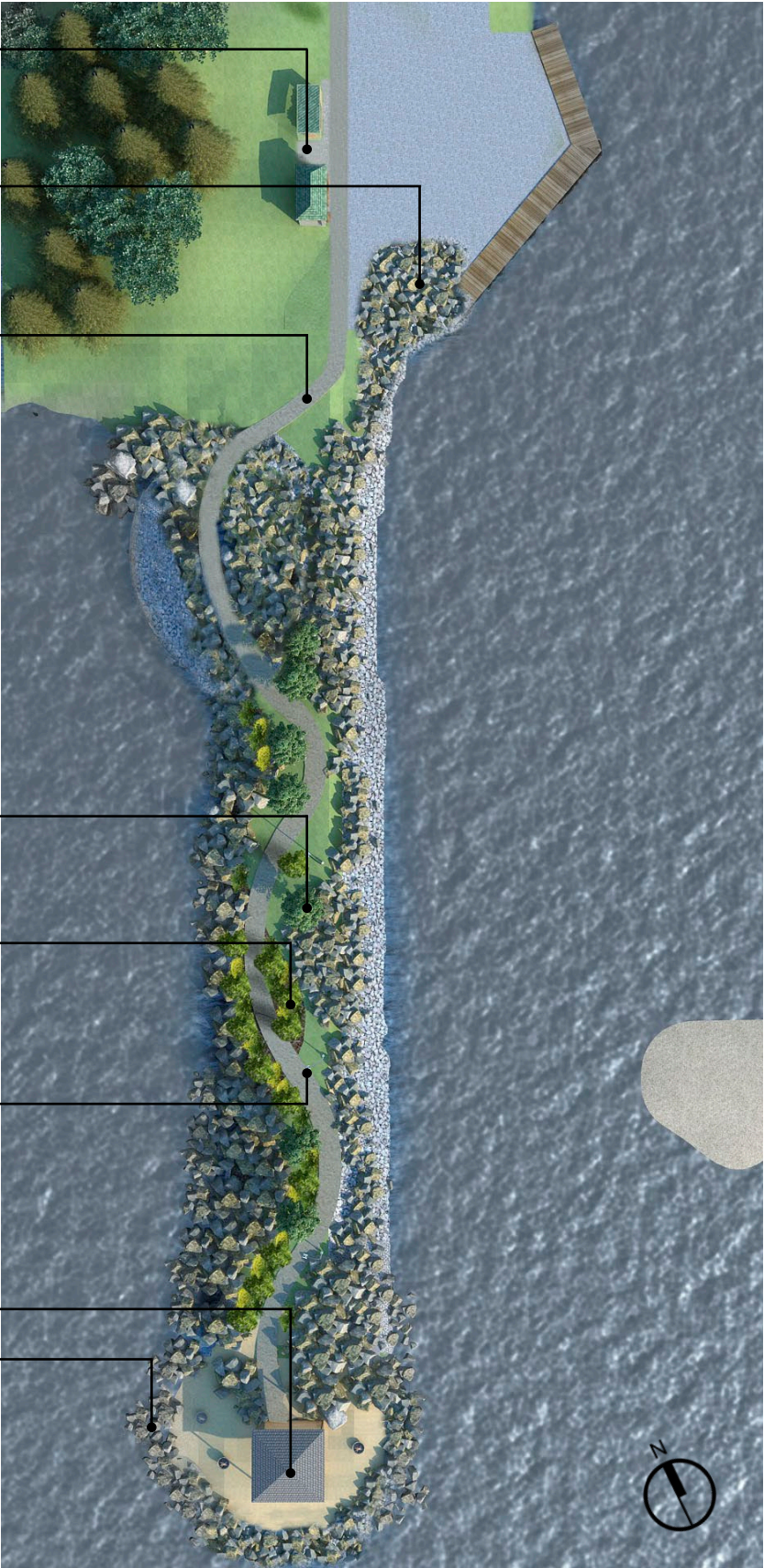
EXISTING TREES TO REMAIN IF POSSIBLE

SHRUBS AND SMALL TREES IN PLANTING BED

LED SOLAR CHARGED LIGHT POSTS

NEW PAVILION, FEATURING A VIEWING  
BENCH, AND FIRE PIT AREAS

LARGE AND SMALL BOULDER EDGING



Option 3 – Trail on Land (Basic)

Item	Description	QT.	Unit	Unit Price	Amount	Budget
Removals						
	Boat Launch Removal	1	allow	\$10,000.00	\$10,000.00	
	Existing Tree Removal	1	allow	\$500.00	\$500.00	
	Pier and Support Structure + Pavilion Removal	1	allow	\$75,000.00	\$75,000.00	
						\$85,500.00
Soft Landscaping						
	Planting Beds (includes topsoil and mulch)	150	sq. m	\$50.00	\$7,500.00	
	Small Trees Species	10	each	\$400.00	\$4,000.00	
	Shrubs	50	each	\$75.00	\$3,750.00	
	Rip Rap – Large Boulder Edging (750–1500mm) on geotech fabric	450	sq. m	\$200.00	\$90,000.00	
	Rip Rap – Small Boulder Edging (250–750mm) on geotech fabric	560	sq. m	\$200.00	\$112,000.00	
	Sand (approximately 200mm depth)	120	sq. m	\$20.00	\$2,400.00	
						\$219,650.00
Hard Landscaping						
	Granular Surfacing (225mm depth) – to accommodate vehicles	200	sq. m	\$85.00	\$17,000.00	
						\$17,000.00
Building Structures						
	New Pavilion Construction (including foundation piles)	1	allow	\$120,000.00	\$120,000.00	
	Firewood Storage Facility	1	allow	\$5,000.00	\$5,000.00	
	Renovated Seasonal Kiosk	1	allow	\$25,000.00	\$25,000.00	
						\$150,000.00
Site Furniture						
	Benches	1	each	\$3,500.00	\$3,500.00	
	Picnic Tables	1	each	\$3,500.00	\$3,500.00	
	Kiosk Rental Rack (Lifejackets, Kayaks, Paddles, etc.)	1	each	\$5,000.00	\$5,000.00	
	Fire Pits	3	each	\$2,000.00	\$6,000.00	
	LED Solar Charged Light Posts (inc. structural base)	6	each	\$15,000.00	\$90,000.00	
						\$108,000.00
					Subtotal	\$580,150.00
					Contingency (20%)	\$116,030.00
					Permits Allowance	\$10,000.00
					Consulting Fees	\$70,618.00
					Total	\$696,180.00



SEASONAL KIOSK, RENTAL FACILITY,  
AND FIREWOOD STORAGE

BOAT LAUNCH REMAINS

2.0m GRANULAR PATH

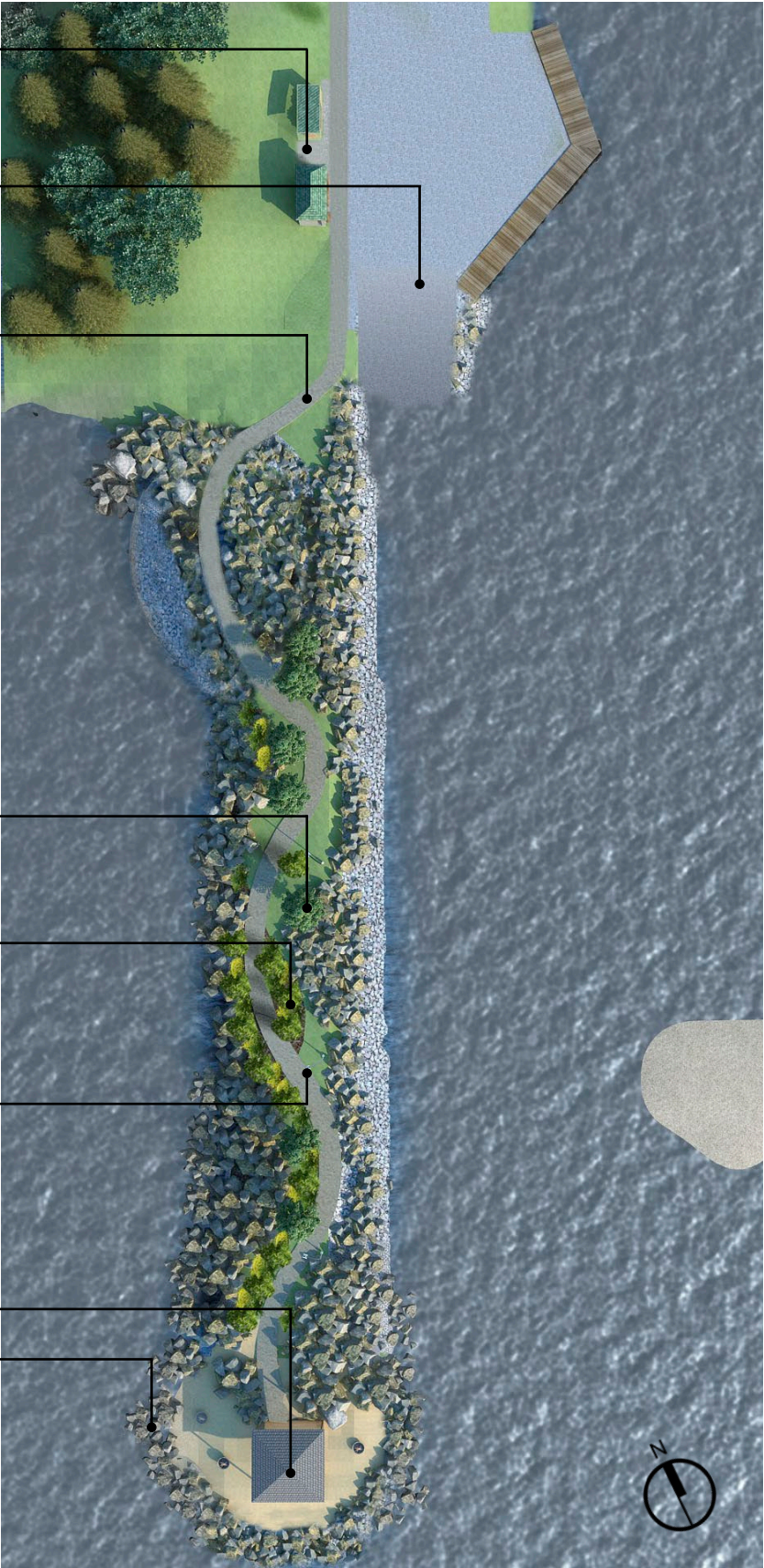
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SHRUBS AND SMALL TREES IN PLANTING BED

LED SOLAR CHARGED LIGHT POSTS

NEW PAVILION, FEATURING A VIEWING  
BENCH, AND FIRE PIT AREAS

LARGE AND SMALL BOULDER EDGING



Option 4 – Trail on Land (Boat Launch)

Item	Description	QT.	Unit	Unit Price	Amount	Budget
Removals						
	Existing Tree Removal	1	allow	\$500.00	\$500.00	
	Pier and Support Structure + Pavilion Removal	1	allow	\$75,000.00	\$75,000.00	
						\$75,500.00
Soft Landscaping						
	Planting Beds (includes topsoil and mulch)	150	sq. m	\$50.00	\$7,500.00	
	Small Trees Species	10	each	\$400.00	\$4,000.00	
	Shrubs	50	each	\$75.00	\$3,750.00	
	Rip Rap – Large Boulder Edging (750–1500mm) on geotech fabric	350	sq. m	\$200.00	\$70,000.00	
	Rip Rap – Small Boulder Edging (250–750mm) on geotech fabric	500	sq. m	\$200.00	\$100,000.00	
	Sand (approximately 200mm depth)	120	sq. m	\$20.00	\$2,400.00	
						\$187,650.00
Hard Landscaping						
	Granular Surfacing (225mm depth) – to accommodate vehicles	200	sq. m	\$85.00	\$17,000.00	
						\$17,000.00
Building Structures						
	New Pavilion Construction (including foundation piles)	1	allow	\$120,000.00	\$120,000.00	
	Firewood Storage Facility	1	allow	\$5,000.00	\$5,000.00	
	Renovated Seasonal Kiosk	1	allow	\$25,000.00	\$25,000.00	
						\$150,000.00
Site Furniture						
	Benches	1	each	\$3,500.00	\$3,500.00	
	Picnic Tables	1	each	\$3,500.00	\$3,500.00	
	Kiosk Rental Rack (Lifejackets, Kayaks, Paddles, etc.)	1	each	\$5,000.00	\$5,000.00	
	Fire Pits	3	each	\$2,000.00	\$6,000.00	
	LED Solar Charged Light Posts (inc. structural base)	6	each	\$15,000.00	\$90,000.00	
						\$108,000.00
				Subtotal	\$538,150.00	
				Contingency (20%)	\$107,630.00	
				Permits Allowance	\$10,000.00	
				Consulting Fees	\$65,578.00	
				Total	\$645,780.00	