

Mill Pond Park - Stormwater Environmental Assessment Cost Estimates

Alternative:

A1 - Heritage Estates SWM Facility "Minor" Rehabilitation

Project Component	Unit	Quantity	Unit Price	Total Price
Earthworks to restore grades around existing concrete weir	LS	1	\$20,000	\$20,000
Restoration (plantings)	LS	1	\$2,500	\$2,500
Sub-Total				\$22,500
<i>Detailed Engineering Design (20%)</i>				<i>\$4,500</i>
<i>Construction Contingency (20%)</i>				<i>\$4,500</i>
<i>Construction Cost Escalation (15%)</i>				<i>\$3,375</i>
Total Cost				\$34,875
<i>Rounded Cost Estimate</i>				<i>\$35,000</i>

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Alternative:

A2 - Heritage Estates SWM Facility "Moderate" Rehabilitation

Project Component	Unit	Quantity	Unit Price	Total Price
Sediment removal	m3	3,000	\$300	\$900,000
Internal berm earthworks	m3	1,500	\$50	\$75,000
Deepened base at bottom draw location	m3	20	\$40	\$800
DICB outlets	LS	2	\$5,000	\$10,000
Control manhole	LS	1	\$20,000	\$20,000
Outlet structure pipes (1050mm diameter)	m	30	\$350	\$10,500
Remove existing concrete weir	LS	1	\$2,500	\$2,500
Construct overflow spillway	LS	1	\$25,000	\$25,000
Scour pool	LS	1	\$10,000	\$10,000
Restoration (plantings)	LS	1	\$50,000	\$50,000
Replace trail crossing with box culvert structure	LS	1	\$25,000	\$25,000
Formalize access trail for vehicle maintenance (Rumble to 17-3)	m2	825	\$200	\$165,000
Formalize access trail for vehicle maintenance (Falkland to 17-3)	m2	550	\$200	\$110,000
Sub-Total				\$1,403,800
<i>Detailed Engineering Design (20%)</i>				<i>\$280,760</i>
<i>Construction Contingency (20%)</i>				<i>\$280,760</i>
<i>Construction Cost Escalation (15%)</i>				<i>\$210,570</i>
Total Cost				\$2,175,890
<i>Rounded Cost Estimate</i>				<i>\$2,176,000</i>

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Alternative:

A4 - Heritage Estates SWM Facility Outlet Channel Rehabilitation

Project Component	Unit	Quantity	Unit Price	Total Price
Channel rehabilitation (plantings, pea gravel riffles, root wads)	m	115	\$2,000	\$230,000
Trail reinforcement (for maintenance vehicle access)	m2	350	\$200	\$70,000
Replace culverts at trail crossing*				
Restore and re-grade (raise) pedestrian trail around crossing	m2	60	\$75	\$4,500
Sub-Total				\$304,500
<i>Detailed Engineering Design (20%)</i>				<i>\$60,900</i>
<i>Construction Contingency (20%)</i>				<i>\$60,900</i>
<i>Construction Cost Escalation (15%)</i>				<i>\$45,675</i>
Total Cost				\$471,975
<i>Rounded Cost Estimate</i>				<i>\$472,000</i>

*Costs for SWMF 17-3 outlet culvert replacement carried under Option A2

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Alternative:

A5 - Heritage Estates SWM Facility New Outlet Channel

Project Component	Unit	Quantity	Unit Price	Total Price
Water management, bypass pumping	LS	1	\$25,000	\$25,000
New channel construction	m	180	\$4,000	\$720,000
Backfill existing outlet channel	m3	460	\$36	\$16,560
Sub-Total				\$761,560
<i>Detailed Engineering Design (20%)</i>				<i>\$152,312</i>
<i>Construction Contingency (20%)</i>				<i>\$152,312</i>
<i>Construction Cost Escalation (15%)</i>				<i>\$114,234</i>
Total Cost				\$1,180,418
<i>Rounded Cost Estimate</i>				<i>\$1,181,000</i>

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Alternative:

B1 - Mill Pond Sediment Removal - (a) PARTIAL REMOVAL

Project Component	Unit	Quantity	Unit Price	Total Price
Sediment removal (volume includes 50% expansion factor)	m3	9,150	\$300	\$2,745,000
Rumble Ave storm sewer outfall channel rehabilitation	m	25	\$2,500	\$62,500
Emerald Isle Ct storm sewer outfall channel rehabilitation	m	25	\$2,500	\$62,500
Excess Soils Regs Obligations (DDRA & RMM)	LS	1	\$100,000	\$100,000
Sub-Total				\$2,970,000
<i>Detailed Engineering Design (20%)</i>				<i>\$594,000</i>
<i>Construction Contingency (20%)</i>				<i>\$594,000</i>
<i>Construction Cost Escalation (15%)</i>				<i>\$445,500</i>
Total Cost				\$4,603,500
<i>Rounded Cost Estimate</i>				<i>\$4,604,000</i>

Alternative:

B1 - Mill Pond Sediment Removal - (b) COMPLETE REMOVAL

Project Component	Unit	Quantity	Unit Price	Total Price
Sediment removal (volume includes 50% expansion factor)	m3	24,750	\$300	\$7,425,000
Rumble Ave storm sewer outfall channel rehabilitation	m	25	\$2,500	\$62,500
Emerald Isle Ct storm sewer outfall channel rehabilitation	m	25	\$2,500	\$62,500
Excess Soils Regs Obligations (DDRA & RMM)	LS	1	\$100,000	\$100,000
Sub-Total				\$7,650,000
<i>Detailed Engineering Design (20%)</i>				<i>\$1,530,000</i>
<i>Construction Contingency (20%)</i>				<i>\$1,530,000</i>
<i>Construction Cost Escalation (15%)</i>				<i>\$1,147,500</i>
Total Cost				\$11,857,500
<i>Rounded Cost Estimate</i>				<i>\$11,858,000</i>

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Alternative:

B2 - Mill Pond Outlet Structure Reconstruction

Project Component	Unit	Quantity	Unit Price	Total Price
Water management (cofferdam constructiuon)	LS	1	\$15,000	\$15,000
Deepened base at bottom draw location	m3	100	\$200	\$20,000
Extended detention bottom draw outlet	LS	1	\$10,000	\$10,000
Control manhole	LS	1	\$20,000	\$20,000
Outlet structure pipes (300mm diameter)	m	20	\$350	\$7,000
Raise spill elevation of existing weir	LS	1	\$5,000	\$5,000
Riprap berm structure	LS	1	\$20,000	\$20,000
Sub-Total				\$97,000
<i>Detailed Engineering Design (20%)</i>				<i>\$19,400</i>
<i>Construction Contingency (20%)</i>				<i>\$19,400</i>
<i>Construction Cost Escalation (15%)</i>				<i>\$14,550</i>
Total Cost				\$150,350
<i>Rounded Cost Estimate</i>				<i>\$151,000</i>

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Alternative:

B3 - Mill Pond Fish Passage Option

Project Component	Unit	Quantity	Unit Price	Total Price
Water management (cofferdam construction)	LS	1	\$100,000	\$100,000
Earthworks for berm/channel construction	m3	1,500	\$50	\$75,000
Cascade/pool features within channel	m	50	\$5,000	\$250,000
Additional pond sediment removal	m3	1,250	\$300	\$375,000
Sub-Total				\$800,000
<i>Detailed Engineering Design (20%)</i>				<i>\$160,000</i>
<i>Construction Contingency (20%)</i>				<i>\$160,000</i>
<i>Construction Cost Escalation (15%)</i>				<i>\$120,000</i>
Total Cost				\$1,240,000
<i>Rounded Cost Estimate</i>				<i>\$1,240,000</i>

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Alternative:

C1 - Trail and River "Repair" Option

Project Component	Unit	Quantity	Unit Price	Total Price
17-3 Outlet Channel Crossing: replace with larger / relocated culvert*	-	-	-	-
North Trail Crossing: replace with pedestrian bridge	LS	1	\$100,000	\$100,000
Central Trail Crossing: replace with pedestrian bridge	LS	1	\$100,000	\$100,000
South Trail Crossing: increase cover, scour protection downstream	LS	1	\$7,500	\$7,500
Gabion Wall: remove failing section and re-grade surrounding area	LS	1	\$50,000	\$50,000
Gabion Wall: reconstruction (with armourstone)	LS	1	\$20,000	\$20,000
Timber Ped Bridge: replace deteriorated timbers, deck boards & caps	LS	1	\$5,000	\$5,000
Kerrybrook Drive bank protection	LS	1	\$20,000	\$20,000
Sub-Total				\$302,500
<i>Detailed Engineering Design (20%)</i>				<i>\$60,500</i>
<i>Construction Contingency (20%)</i>				<i>\$60,500</i>
<i>Construction Cost Escalation (15%)</i>				<i>\$45,375</i>
Total Cost				\$468,875
<i>Rounded Cost Estimate</i>				<i>\$469,000</i>

*Costs for SWMF 17-3 outlet culvert replacement carried under Option A2

Mill Pond Park - Stormwater Environmental Assessment Cost Estimates

Alternative:

C2 - Trail and River "Enhance" Option

Project Component	Unit	Quantity	Unit Price	Total Price
17-3 Outlet Channel Crossing: replace with larger / relocated culvert	-	-	-	-
North Trail Crossing: replace with pedestrian bridge	LS	1	\$100,000	\$100,000
Central Trail Crossing: remove and restore to a natural channel	LS	1	\$25,000	\$25,000
South Trail Crossing: Replace with elevated boardwalk	m2	200	\$1,000	\$200,000
Gabion Wall: remove failing section and re-grade surrounding area	LS	1	\$50,000	\$50,000
Gabion Wall: reconstruction (with armourstone)	LS	1	\$20,000	\$20,000
Timber Ped Bridge: remove and install new bridge to the south	LS	1	\$110,000	\$110,000
Kerrybrook Drive bank protection	LS	1	\$20,000	\$20,000
New Boardwalk across north end of Mill Pond	m2	200	\$1,200	\$240,000
Sub-Total				\$765,000
<i>Detailed Engineering Design (20%)</i>				<i>\$153,000</i>
<i>Construction Contingency (20%)</i>				<i>\$153,000</i>
<i>Construction Cost Escalation (15%)</i>				<i>\$114,750</i>
Total Cost				\$1,185,750
<i>Rounded Cost Estimate</i>				<i>\$1,186,000</i>

*Costs for SWMF 17-3 outlet culvert replacement carried under Option A2