

Project Name: Barnmouth North Promenade O&M		Client: BCRC	
Project Manager: [Redacted]		Date: 19/09/2023	
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Preferred Option Costing: Epoch 1-2: Split 1

Proposed Scheme	PV Costs (£k)	Non Discounted Costs (£k)	Comments
Y&O staff costs	£71	£72	
Consultant fees	£212	£212	Assume 5% of direct construction cost (without preliminaries, overhead, profit) for detailed design stage.
Cost consultant fees	£12	£12	1 day/week for 30 weeks for £55/hr
Site investigation/survey	£76	£76	This pits along the promenade for the proposed secondary/tertiary wall and at existing sheet pile. - Structural coring of the existing wall to inform the design. - Windowless sampling along the beach, supplemented with a small number of boreholes, to inform the settlement analysis and foundation details of the proposed rock armour. This will also inform the temporary works design for the sheet pile refurbishment. Includes 10% contingency.
Utility Diversions	£5	£5	No diversions anticipated as part of the scheme, based on IRI 18 review.
Early Contractor Involvement	£13	£13	One off cost to include drawings review, based on previous project experience.
Other	£24	£24	Marine licensing and stakeholder engagement
Optimism bias	£105	£105	25% applied to O&M to Construction costs due to uncertainty pending ongoing study and further survey.
O&C to Construction Subtotal	£ 311	£ 313	
Construction and Construction support	£7,084	£7,343	PV Capital cost, based on estimate from E&C. Includes: - Preliminaries: 30 weeks - Profit + overheads: 10% of total direct cost + preliminaries - Quantified Risk Assessment 95thile
Optimism bias	£1,845	£1,909	25% applied to Construction costs due to uncertainty pending ongoing study and further survey.
Future costs (Maintenance)	£16	£16	50% applied to Maintenance costs due to uncertainty pending ongoing study and further survey.
Optimism bias	£42	£42	
TOTAL	£9,589	£9,589	

Preferred Option Costing: Epoch 1-2: Split 2

Proposed Scheme	PV Costs (£k)	Non Discounted Costs (£k)	Comments
Y&O staff costs	£91	£92	
Consultant fees	£383	£383	Assume 5% of direct construction cost (without preliminaries, overhead, profit) for detailed design stage.
Cost consultant fees	£16	£16	1 day/week for 30 weeks for £55/hr
Site investigation/survey	£5	£5	Surveys undertaken in Phase 1
Utility Diversions	£5	£5	No diversions anticipated as part of the scheme, based on IRI 18 review.
Early Contractor Involvement	£13	£13	One off cost to include drawings review, based on previous project experience.
Other	£24	£24	Marine licensing and stakeholder engagement
Optimism bias	£133	£133	25% applied to O&C to Construction costs due to uncertainty pending ongoing study and further survey.
O&C to Construction Subtotal	£ 577	£ 577	
Construction and Construction support	£12,439	£14,733	PV Capital cost, based on estimate from E&C. Includes: - Preliminaries: 35 weeks - Material stock piling: 52 weeks - Profit + overheads: 10% of total direct cost + preliminaries + material stock piling - Quantified Risk Assessment 95thile
Optimism bias	£3,338	£3,631	25% applied to Construction costs due to uncertainty pending ongoing study and further survey.
Future costs (Maintenance)	£16,004	£16,236	50% applied to Maintenance costs due to uncertainty pending ongoing study and further survey.
Optimism bias	£55	£55	
TOTAL	£17,027	£19,718	

Preferred Option Costing: Epoch 3

Proposed Scheme	PV Costs (£k)	Non Discounted Costs (£k)	Comments
Staff costs (Y&O) (Year 50-55)	£42	£42	Project management costs (Y&O: 20hrs)
Site investigation and surveys (Year 50)	£52	£2,462	Option A: Managed Realignment - EA S0000035 Cost Estimate for Managed Realignment suggests that although highly variable, the average pre-implementation costs associated with design, surveys, modelling and consultation are 17% of the total cost.
Consultants fees (Outline and Detail Design) (Year 50)	£30	£1,448	Assume 10% of construction cost for detailed design stage (based on Environment Agency guidance for Local Authority schemes <£1m)
Early Contractor Involvement (Year 50)	£5	£25	One off cost to include drawings review, based on previous project experience.
Other costs (agency)	£14	£40	Includes marine licence, consent, monitoring and stakeholder engagement
O&C to Construction Subtotal	£93	£4,944	Not a cost for Westey Water based on construction period
Capital Construction Costs (Year 50-55)	£3,116	£14,481	PV Capital cost, based on estimate from [Redacted] scheme. Includes: - Preliminaries, overheads and profit: 25% - Contingency (including inflation): 15% - £250,000 land purchase costs (Y&O: 20hrs) - £250,000 commercial property purchase costs
Land purchase and compensation (Year 50)	£114	£516	
Future Maintenance Costs (Year 50 - 100)	£52	£771	1 day/week for 45 weeks for £55/hr
Optimism bias	£ 2,559	£ 11,346	25% applied to all costs due to future uncertainty.
TOTAL	£ 6,824	£1,855	
TOTAL	£ 35,412	£1,555	

Summary

	PV Benefit (£k)	PV Cost (£k)	Benefit Cost Ratio
Phase 1 Split 1 (Epoch 1-2)	£9,589	£9,589	1.0
Phase 1 Split 2 (Epoch 1-2)	£17,027	£17,027	1.0
Phase 1 Split 1+2 (Epoch 1-2)	£26,616	£26,616	1.0
Phase 1 Split 1+2 (Epoch 1-2) and Epoch 3	£26,616	£26,616	1.0
Sensitivity Analysis - Phase 1&2 (Epoch 1-2) and increased costs +50%	£26,616	£26,616	1.0
Benefit Response 75%	£26,616	£26,616	1.0

Annexed Project Costs Phase 1 works (undiscounted) - excluding maintenance					
Annexed funding profile for preferred option (£k)	Yr 0 (2021/2022)	Yr 1 (2022/2023)	Yr 2 (2023/2024)	Yr 3 (2024/2025)	Yr 4 (2025/2026)
Staff	£25	£45	£5	£35	£7
- Design Development and Capital cost (including inflation)	£440	£9,232	£314	£314	£18,161
Annual Project Total	£465	£9,277	£319	£349	£18,168
Cumulative Project Total	£465	£9,742	£10,061	£10,410	£28,578

Annexed Funding Profile Phase 1 (undiscounted) - excluding maintenance		
Annexed funding profile for preferred option (£k)	Yr 0 (2021/22)	Yr 1 (2022/23)
CRMP (50%)	£305	£7,804
Local (50%)	£160	£1,330
Annual Project Total	£465	£9,134
Cumulative Project Total	£465	£9,600

(year ends end of month)	Discount Factors (Green Book)	
2021/22	this year	1.00
2022/23	1	0.97
2023/24	2	0.93
2024/25	3	0.90
2025/26	4	0.87
2026/27	5	0.84