

ARUP

Job Title

Barmouth North Promenade OBC

Calculation

Job No.

264326

Member/Location

Drg. Ref.

Made by

RJ

Date

26/03/19

Chd.

RC

Reference	What is it?	Option	Overview / Description	Life-Span	Engineering Performance	Assumptions / Uncertainties	Economic Performance	Environmental Performance	Social & Well-Being Performance	Financial Performance
	Section			Epoch 1 (0-20 years)	Epoch 2 (20-50 years)	Epoch 3 (50-100 years)	Epoch 4 (Beyond 100 years)			
1	All	Baseline - Walkaway & Business As Usual <i>Residual life of the sea wall and revetment is considered to be <10 years and <20 years for the Walkaway and BAU, respectively. The BAU has been taken forward as the baseline scenario.</i>	Progressive structural failure of the sea-wall and revetment. On-going deterioration will lead to failure of the sea-wall and revetment, leading to a breach in the defences and associated coastal flooding affecting the wider floodcell (encompassing the Heol-Y-Llan housing estate and central Barmouth). Existing highway drainage, culverts and outfalls (including flap valves) will cease to operate effectively and exacerbate drainage/flooding issues.						This section should provide a summary of how each option contributes towards environment, sustainability and delivery of the Well-being of Future Generations Act goals.	The options should be assessed against opportunities for wider funding contribution. Interventions that also provide wider benefits, especially community benefits, are more likely to be able to attract third-party funding.
2	All	Extending lifespan of, and improvements to, the existing defences and associated flood walls / drainage	Option involves: • Extending the life of the existing sheet piles • Improve the tertiary flood wall, demountable barriers and associated drainage • Consider a higher sea wall, recurve the wave wall and added protection to the structure toe (e.g. rock armour)							
3	All	Improved beach management, supported by stabilising structures such as breakwaters or groynes.	Combination of groynes and offshore breakwater options to stabilise beach material. Combination of rock breakwaters offshore to dissipate wave energy offshore and to reduce overtopping by significant levels; and/or shore-linked groynes (rocks or refurbish existing) to hold the placement of beach material. Coarser beach re-charge material would be introduced to promote and encourage a sustainable beach level. Works to extend the life of the existing sheet piles would also be required.							
4	All	Managed Realignment	New line of defence to protect the railway line, allowing the area directly behind the sea-wall to be subject to erosion.							

Key: Negative impact Positive and negative impacts Positive impact