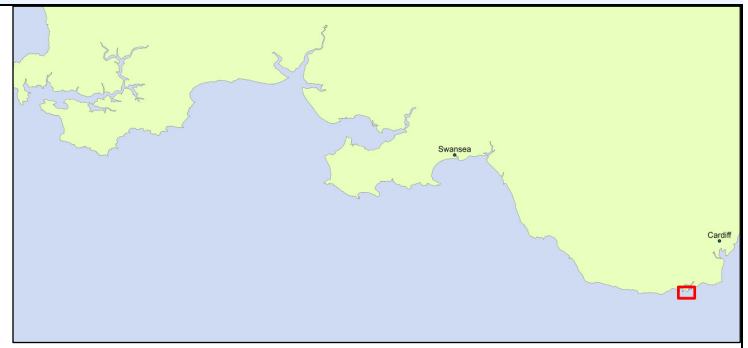


Barry Island and Docks (2)



Recommendations:

Long Term Plan

It has been assumed that the structures associated with Barry Docks will be maintained and upgraded in the long term, but this is subject to the future management strategy for the Docks. Maintenance of these structures is the responsibility of the port authorities and is not covered by public funding of coastal erosion and flood risk management, however since the structures perform a coastal defence function they have been considered by the SMP for completeness.

The resistant rocky headlands along this frontage, which interrupt any longshore drift of sediment, will be allowed to continue to evolve naturally.

The plan is to maintain the long term viability of the key tourist resort of Barry Island. Whilst the existing seawall at Whitmore Bay is maintained and upgraded in the short and medium term (subject to the availability of public funding for coastal erosion and flood risk management) it is recommended that further studies are undertaken to assess the viability of managed realignment in the long term to reduce narrowing of the amenity beach as a result of future sea level rise. This could be undertaken as part of a wider regeneration scheme at Barry Island.

It is proposed that the existing defences around the edge of Barry Harbour are maintained and upgraded in the long term as required to manage the risk of coastal erosion and flooding to strategic transportation links (road and rail) to Barry Island. Fine sediment continues to settle within Barry Harbour, which does not currently function as an operational harbour. A number of proposals for regeneration of the harbour have previously been proposed and further options could be considered/ developed such as advancing the line to enable redevelopment or managing the inter-tidal area within the harbour for its environmental interest potentially to provide inter-tidal habitat to compensate for losses elsewhere along the coast.

Location (Policy Unit)		Preferred SMP2 policy and proposed approach to implementing the Plan		
		0-20 years	20-50 years	50-100 years
2.1	Barry Docks (Bendrick Rock to West Breakwater)	The policy is to enable the continued functioning of the docks through hold the line by maintaining and upgrading existing dock structures.		
2.2	Jackson's Bay and Nell's Point	There are currently no defences along this frontage and the policy is to allow the coast to evolve and retreat naturally, through no active intervention .		
2.3	Whitmore Bay, Barry Island	There are a number of assets potentially at risk and tourism is an important function of this area, therefore the short term policy is to hold the line through maintenance and upgrading of existing defences as long as is effective.	Whilst studies are undertaken to investigate the feasibility of a managed realignment option, the medium term policy is to continue to hold the line through maintenance and upgrading of existing defences, subject to obtaining the necessary consents, licences and approvals. Investigate options for managed realignment. Should studies identify opportunities for managed realignment in the long term, it may not be prudent to replace structures once they reach the end of their effective life.	Further to studies, implement managed realignment , through constructing new defences in a set back location.* * <i>Should studies find that a policy of managed realignment is unfeasible, the recommended long term policy would revert to hold the line through maintaining, upgrading and replacing defences along their existing alignment.</i>
2.4	Friars Point	There are currently no defences along this frontage and the policy is to allow the coast to evolve and retreat naturally, through no active intervention .		
2.5	Barry Harbour (Breakwater to Watch House Bay)	A key policy driver is to continue to manage the risk of coastal erosion and flooding to critical transport links, the railway line and A4055 road, to Barry Island. Therefore the long term policy is to hold the line through maintenance and upgrading of existing defences, subject to obtaining the necessary consents, licences and approvals. Continued sediment infilling of the harbour should mean, however, that works are limited and it is unlikely that defences would need to be extended to protect currently undefended frontages.		
2.6	Cold Knap Point	There are currently no defences along this frontage and the policy is to allow the coast to evolve and retreat naturally, through no active intervention .		

A review of the impacts of the preferred SMP2 policies on coastal evolution and behaviour is provided in Appendix E: Policy Development and Appraisal, Section E1.3.

Policy sensitivities and key uncertainties (further detail is included in Appendix K)

Policy unit 2.1 - this policy depends upon the future management strategy for Barry Docks; maintenance of dock structures is the responsibility of the port authorities and is not covered by public funding of coastal erosion and flood risk management. A change in policy is only likely to affect the dock area and Jackson's Bay, which are bounded by hard rock outcrops, which would continue to be a key influence on the adjacent shorelines.

Policy unit 2.2 - there are properties and historical assets that could potentially become at risk if higher rates of cliff erosion occurred. It is unlikely that the policy would change, but mitigation measures could be necessary.

Policy unit 2.3 - Maintaining and/or upgrading existing defences (in response to future climate change/ sea level rise) is subject to the future availability of public funding for coastal erosion and flood risk management. A long term policy of managed realignment should be investigated to consider the costs and potential wider benefits, which could include regeneration of the Barry Island tourist resort.

Policy unit 2.5 - There is potential for a policy of advance the line in this unit, which could be considered in conjunction with the possible redevelopment of Whitmore Bay, providing an opportunity to regenerate the entire area. Alternatively the harbour could be managed to create an area of intertidal habitat, as the harbour is currently infilling and does not function as an operational harbour. Further studies would be necessary to investigate the technical, socio-economic and environmental viability of these alternative proposals.

Changes from present management / SMP1 policy¹

These policies do not represent significant changes from SMP1.

Policy units 2.1 and 2.2 - the SMP1 policy was for hold or possibly retreat in this unit which included Barry Docks, Jackson's Bay and Nell's Point.

Policy units 2.3 and 2.4 - the SMP1 policy for this unit which included Nells' Point, Whitmore Bay and Friars Point was hold in the short term with hold or possibly retreat in the long term.

Policy unit 2.5 – the SMP1 policy for Barry Harbour was to hold the line along defended sections with a review of rates of erosion along soft rock shore on the western side of the management unit, with a potential do nothing policy.

Policy unit 2.6 – the SMP1 policy between Bullcliff Rock and Cold Knap Point (the Knap) was to review the feasibility of hold the line in the short term, with hold or retreat in the long term.

Barry Island and Docks (2)

(this is a summary of impacts, for full details see **Appendix G SEA Report**)

Issue	Appraisal
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Receptor: Property, population and human health

This frontage is dominated by Barry Docks and Barry Island tourist resort, which includes residential areas, tourist and recreational facilities and the industrial area associated with Barry Docks. The main tourist frontage at Whitmore Bay, Barry Island, is defended, but the cliffed sections are undefended, including Jackson's Bay where there are properties situated 20m-30m landward of the cliff edge.

<p>Will SMP policy maintain coastal settlements and manage the impact of coastal flood and erosion?</p>	<ul style="list-style-type: none"> <li style="margin-bottom: 10px;">+ In the short and medium term, maintaining the existing defences in Whitmore Bay would continue to manage the risk of coastal erosion to the main settlement of Barry Island, which is set some way back from the existing seawall on high ground. <li style="margin-bottom: 10px;">- Should managed realignment be implemented in the long term in Whitmore Bay, there may be some loss of non-residential and residential properties, dependent on the extent and nature of the realignment. However the risk of coastal erosion and flooding to properties inshore of the new defences would continue to be managed. <li style="margin-bottom: 10px;">x Properties elsewhere, inshore of Jackson's Bay and the new housing development on Nell's Point, would not be at risk, since they are set back on high, resistant cliffs.
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<p>Will SMP policy directly increase the actual or potential coastal erosion or flood risk to communities?</p>	<ul style="list-style-type: none"> <li style="margin-bottom: 10px;">+ Along much of this shoreline there are currently no defences, and the policy for these areas is to continue to allow the shoreline to evolve naturally. Maintenance of defences in Whitmore Bay in the short and medium term would continue to manage coastal erosion and flood risk to Barry Island. <li style="margin-bottom: 10px;">- In the long term, the policy of managed realignment in Whitmore Bay, should studies indicate that it is feasible, would result in the loss of some properties (it is not anticipated that there would be significant numbers of properties affected) but would continue to manage the risk of coastal erosion and flooding to landward properties.
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<p>Is SMP policy sufficiently flexible to take account of dynamic coastal change?</p>	<ul style="list-style-type: none"> <li style="margin-bottom: 10px;">+ The SMP policy recognises dynamic coastal change, with policies of no active intervention along much of the short term. In Whitmore Bay, the dynamic nature of the coast is recognised, with the flexibility of the long term option, which would be managed realignment assuming that studies indicate that it is feasible. As part of these studies, an assessment of coastal processes and predicted future coastal change would be completed.
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<p>Could there be a detrimental impact on the fabric of coastal communities?</p>	<ul style="list-style-type: none"> <li style="margin-bottom: 10px;">+ Along most of this shoreline, there will be no impact on coastal communities with continued coastal erosion and flood risk management along frontages which are currently defended. <li style="margin-bottom: 10px;">- At Whitmore Bay, Barry Island, there may be some limited impact on the coastal community in the long term, should managed realignment be implemented. The nature of the impact would be dependent on the scheme, which could also be used to regenerate the area and improve the community.
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Receptor: Land use, infrastructure and material assets

Barry Island is a popular tourist resort, with facilities focused at Whitmore Bay. Barry Docks, and associated industrial area is located at the eastern end of the frontage. At the western end, Barry Harbour, is infilling and is not functioning as an operational harbour. The railway line and A4055 which run along the northern edge of Barry Harbour provide the only access to Barry Island.

<p>Will SMP policy maintain key industrial, commercial and economic assets and manage the impact of coastal flooding and erosion?</p>	<ul style="list-style-type: none"> <li style="margin-bottom: 10px;">+ Continued maintenance of harbour structures at Barry Docks, subject to future management strategy. Continue to manage the risk of coastal erosion and flooding to Barry Island tourist resort, residential development and associated transport links. <li style="margin-bottom: 10px;">- In the long term, managed realignment at Whitmore Bay could lead to some limited loss of assets, although this would be undertaken in order to manage coastal erosion and flood risk to the wider area.
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<p>Will the SMP policy ensure critical services and infrastructure remain operational, for as long as required?</p>	<ul style="list-style-type: none"> <li style="margin-bottom: 10px;">x Although there are limited defences along much of the frontage, risk to critical services and infrastructure is minimal due to the resistant nature of the geology. <li style="margin-bottom: 10px;">+ Defences in Whitmore Bay would ensure that critical infrastructure and services would remain operational.
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¹ The SMP1 documents should be referred to for more details as unit boundaries do not always align with SMP2 policy units and the policies refer to different time periods.

Barry Island and Docks (2) (this is a summary of impacts, for full details see Appendix G SEA Report)	
Issue	Appraisal
	+ A policy of hold the line in Barry Harbour would ensure that the key transport links to the island are maintained.
Will there be an impact on marine operations and activities?	+ Barry Docks, and the maintenance of the dock structures, is the responsibility of the relevant port authorities and is not covered by flood and defence funding. However, it has been assumed that they would be maintained and marine operations would be able to continue, as required.
Will SMP policy impact coastal flooding or erosion on agricultural activities?	X There are no agricultural activities along this shoreline.
Will the SMP policy ensure that MoD (Qinetiq) ranges remain operational?	X There are no MoD (Qinetiq) assets along this shoreline.
Receptor: Amenity and recreational use Barry Island is a key tourist resort, with facilities including the recreational beach in Whitmore Bay, the promenade and associated amenities.	
Could the SMP policy have an impact on tourism in the area?	+ Defences in Whitmore Bay would continue to manage the risk of coastal erosion and flooding to key assets in the short and medium term. - Managed realignment in Whitmore Bay in the long term, should studies indicate that this is feasible, would lead to realignment of the promenade and associated facilities and has the potential to be undertaken as part of a wider regeneration of Barry Island. + Opportunity for regeneration of the area, with the potential to increase its tourism value, provided through managed realignment scheme at Whitmore Bay. + In the long term, managed realignment at Whitmore Bay may enable beach narrowing, as a result of sea level rise, to be reduced, to retain the important tourist amenity beach. + The remainder of the coast will be allowed to remain undisturbed, thereby maintaining the natural landscape, which is an element of the tourist interest.
Will SMP policy affect coastal access along, or to, the coast?	- Along much of the shoreline, there would be no loss of access. + In the long term, the existing promenade at Whitmore Bay could be lost. However, a new promenade is likely to be included as part of the realignment scheme.
Receptor: Historic environment There are limited archaeological and historic assets along this frontage. There are a number of listed buildings, including some associated with Barry Docks. Locally important archaeology includes military structures on Nell's Point and prehistoric remains on Friars Point.	
Will SMP policy maintain the fabric and setting of key historic listed buildings, cultural heritage assets and conservation areas?	+ There will be no risk to nationally important archaeology. - There may be some risk to prehistoric remains on Friars Point and military structures on Nell's Point, dependent on rates of erosion.
Will the SMP provide sustainable protection of archaeological and palaeo-environmental features or ensure adequate time for monitoring, assessment and mitigation measures to be devised in response to ongoing and future erosion.	● At Friars Point and Nell's Point defences would not be provided, since this would not be economically justified and is considered unsustainable. However, since typical rates of coastal erosion are low this should allow time for monitoring, assessment and mitigation measures to be developed, where appropriate.
Receptor: Landscape character and visual amenity There are no specific landscape designations along this frontage.	
Will SMP policy maintain a range of key natural, cultural and social features critical to the integrity of the coastal landscape?	● For much of this shoreline there is no proposed change from existing policy, therefore minimal change to the landscape. + In the long term, a policy of managed realignment at Whitmore Bay provides an opportunity to improve the character of the bay and visual amenity.
Could SMP policy lead to the introduction of features which could be unsympathetic to the character of the landscape?	- New defences would be constructed at Whitmore Bay in the long term. However, this area is currently defended and the managed realignment scheme could be designed to complement the character of the landscape.
Receptor: Biodiversity, flora and fauna There are no specific biodiversity designations or interest along this frontage.	
Will SMP policy enable a sustainable approach to habitat management?	+ There are no new defences proposed in currently undefended areas, therefore this is considered a sustainable approach to natural evolution of the coastline and its habitats.
Will SMP policy maintain or enhance any international, national or local sites of natural conservation interest?	● Natural intertidal narrowing may lead to a reduction in intertidal habitat. This will depend upon the rate of sea level rise. There is potential to create compensatory intertidal habitat within Barry Harbour subject to further studies.
Will SMP policy <u>accelerate</u> intertidal narrowing (coastal squeeze) and will this affect designated habitats?	- In the short and medium term there may be narrowing of the intertidal beach, i.e. coastal squeeze, in Whitmore Bay. + Implementation of managed realignment in the long term may reduce or slow narrowing of the intertidal beach by constructing new defences set-back from the existing seawall.

Barry Island and Docks (2) (this is a summary of impacts, for full details see Appendix G SEA Report)	
Issue	Appraisal
Will there be a net loss of BAP habitat within the SMP timespan as a result of SMP policy?	- Narrowing of intertidal BAP habitat in the short, medium and long term due to the provision of defences.
Receptor: Earth heritage, soils and geology Barry Island SSSI is designated for geological interest, and includes the rock headlands of Nell's Point and Friars Point.	
Does SMP policy work with natural processes and enhance or maintain natural features?	<ul style="list-style-type: none"> + The majority of the SSSI falls into undefended areas where the recommended policy of no active intervention would enable natural coastal processes to continue. - A small section of the designated area is within Whitmore Bay. In the short and medium terms there would be no impact, since this represents a continuation of current management. However, in the long term, implementation of managed realignment would need to consider impact on the designated exposures.
Will SMP policy maintain or enhance the visibility of coastal geological exposures, where designated?	<ul style="list-style-type: none"> + Where the shoreline is currently undefended, there is no intention to construct new defences, therefore geological exposures in the cliffs will be maintained, which will maintain the status of Barry Island SSSI. - Construction of realigned defences in Whitmore Bay could reduce the visibility of geological exposures, although this would only affect a small area of the designated site. This would be dependent on how the policy was implemented.
Receptor: Water There are numerous coastal, freshwater, transitional (areas of water near river mouths, which are partially saltwater but are influenced by freshwater) and groundwater bodies in the SMP2 area that have the potential to be affected by SMP2 policies.	
Will SMP policy manage the risk of pollution from contaminated sources?	x There are no known contamination issues along this shoreline.
Will SMP policy adversely affect water bodies in the coastal zone?	<ul style="list-style-type: none"> • The Bristol Channel Inner North water body is already at good status. NAI is proposed for the promontories in this policy scenario area. HTL at Barry Docks (PU 2.1) will preserve areas of sheltered deep water likely to provide some interest for biological quality elements. HTL at Whitmore Bay (PU2.3) may cause beach narrowing but any effect would be localised within the constrained bay. HTL at Barry Harbour (PU 2.5) may lead to salt marsh development and thus improve local biological quality elements. • The Thaw & Cadoxton Jurassic Lias groundwater body will be unaffected. There are no associated surface freshwater bodies.

Impact colour key	+ Positive	• Neutral	- Negative	x Not applicable
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Barry Island and Docks (2)						
ACTION PLAN						
Action	Action Ref	Policy Unit	Action Description (to be approved)	Potential source for funding (subject to approval)	Responsibility Lead partner * (supporting partners)	When by (subject to funding)
1. Studies for Scenario Area						
2. Studies for Policy Units						
	2.1	2.1, 2.3 and 2.5	Undertake a scoping assessment to identify when a feasibility study of the upgrading/improvement options to existing defences needs to be carried out and/or identify the criteria/factors that would trigger this feasibility study. The timing of this feasibility study will be influenced by factors such as: existing frequency of flooding, type of receptors at risk, depths and velocity of flooding and residual asset life.	WAG	VoG	0 to 20 years
	2.2	2.1	Engage with and encourage ABP to undertake a study to identify the current and future risk of coastal erosion and flooding to Barry Docks and associated infrastructure to enable a long term sustainable flood and coastal erosion risk management plan to be developed for the site. Ensure that any future management plans for Barry Docks are monitored and used to inform and, where appropriate, update the SMP. Consider alternative funding options.	ABP	ABP (VoG and EAW)	0 to 20 years
	2.3	2.3	Undertake study into feasibility of managed realignment at Whitmore Bay, including community engagement, economic appraisal (including consideration of alternative funding options where it is not possible to justify public investment in coastal erosion and flood risk management) and investigating likely impacts on beach evolution. Should the study indicate that this policy is not appropriate, investigate feasibility of continuing to hold the existing line which may involve consideration of alternative and wide ranging realignment options. Develop a coastal erosion and flood risk management plan, which is ideally supported by the local community.	WAG	VoG	0 to 20 years
	2.4	2.5	Monitor the development of Barry Harbour to inform future coastal erosion and flood risk management.	WAG	VoG	0 to 20 years
	2.5	2.5	Undertake study into feasibility of advancing the limits of Barry Harbour in order to provide a development area. This would need to consider coastal process and ecological impacts, as well as regeneration, and could be linked with Action 2.2. Consider alternative funding options where it is not possible to justify public investment in coastal erosion and flood risk management.	WAG	VoG	0 to 20 years
	2.6	2.5	Undertake study into the feasibility of managing Barry Harbour for its environmental interests such as creating compensatory inter-tidal habitat. This would need to consider coastal process and ecological impacts, and could be linked with Action 2.2. Consider alternative funding options where it is not possible to justify public investment in coastal erosion and flood risk management.	WAG	VoG (CCW/ EAW)	0 to 20 years
3. Strategy						
4. Scheme work						
5. Monitoring						
	5.1	All	Undertake beach and coastal defence asset monitoring to inform further studies and future SMP reviews. In particular beach levels within Whitmore Bay and cliff erosion rates should be monitored. This information should not only be used in future coastal management, but also to assist stakeholder liaison by use of data in public education campaigns.	WAG	VoG (Wales Coastal Monitoring Centre)	0 to 100 years
	5.2	All	Continue with existing beach profile monitoring programme and provide information to Wales Coastal Monitoring Centre for storage and analysis. Use beach profile data to identify the future risk of undermining and overtopping of existing defences.	WAG	Coastal Group (Wales Coastal Monitoring Centre)	0 to 100 years
	5.3	2.3 & 2.5	Undertake periodic defence inspections including condition assessment and photographs. Confirm defence crest levels.	WAG	VoG (Wales Coastal Monitoring Centre)	0 to 100 years
	5.4	All	Undertake further studies, and associated modelling, to better understand sediment regimes in the SMP area and inform future coastal management.	WAG	Coastal Group	0 to 20 years
	5.5	2.5	Continued regular monitoring of the risk of coastal erosion and flooding to railway infrastructure, which may require mitigation measures to be developed, assessed and implemented (subject to obtaining necessary consents, licences and approvals)	Network Rail	Network Rail	0 to 20 years
	5.6	All	Monitor risk to the coastal footpath and investigate potential re-routing of the path where appropriate.	WAG	VoG	Ongoing

SUPERSEDED
Contact SCBCEG for current action plan

6. Asset management	6.1	2.3 & 2.5	Maintenance of defences and beach including management of public access to deliver hold the line policy (and in the future at Whitmore Bay to maintain the set back defences).	WAG	VoG	0 to 50 years
	6.2	2.3 & 2.5	Define and map extents of public and privately owned defences to inform future management decisions.	WAG	VoG (Wales Coastal Monitoring Centre)	0 to 20 years
	6.3	2.3 & 2.5	Undertake an appraisal of asset inspection and beach profile monitoring data to assess the existing and future risk of undermining and overtopping of existing structures.	WAG	VoG (Wales Coastal Monitoring Centre)	0 to 20 years
7. Communication	7.1	All	Undertake monitoring and management of Action Plans to ensure SMP policies are put into practice.	WAG	Coastal Group	0 to 20 years
8. Interface with planning and land management	8.1	All	Continue with risk-based improvements to flood risk maps to provide an appraisal of likely future projected sea level rise.	WAG	EAW	0 to 20 years
	8.2	All	Ensure SMP policies and flood and erosion risks are accounted for in the next revisions of land use plans in order to help manage residual risks from coastal erosion and flooding and to inform future planning decisions.	WAG	VoG planning	0 to 20 years
9. Emergency response	9.1	2.3 & 2.5	Development, monitoring and review of emergency response plans to prepare for storm events which are likely to exceed existing defence standards (protection or lead to failure of existing defences (for example following breach or overtopping)).	WAG	VoG	0 to 20 years
10. Adaptation/ resilience			-			
11. Flood forecasting and warning	11.1	2.3 & 2.5	Continue with risk-based improvements to flood risk maps and inundation modelling to provide improved flood warning service.	WAG	EAW	0 to 20 years
12. Habitat creation and environmental mitigation			-			
* Note: It is recommended that the lead partner/s investigate the potential for local partnerships and alternative sources of funding.						

