



Severn Estuary Shoreline Management Plan Review

Appendix F: Policy Development
and Appraisal



ATKINS



Severn Estuary Shoreline Management Plan Review (SMP2)

Appendix F: Policy Development and Appraisal

December 2010

Notice

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Supporting Appendices

Information required to support the Severn Estuary Shoreline Management Plan Review (SMP2) is provided in the following appendices. These supporting documents offer transparency to the decision making process that is undertaken, leading to explanations and reasoning for the promoted policies.

A: SMP2 Development	The history, structure and development of the SMP are detailed in this report. The investigation and decision making process are explained more fully to outline the procedure to setting policy.
B: Stakeholder Engagement and Consultation	Stakeholder communication is continuous through the SMP2 process, comments on the progress of the management plan are recorded within Appendix B.
C: Baseline Process Understanding	This report includes detail of coastal dynamics, defence data and shoreline scenario assessments of NAI (natural shoreline evolution) and With Present Management (WPM) i.e.: SMP1 Policy.
D: Theme Review	The identification and evaluation of the natural landscape and conservation, the historic environment and present and future land use of the shoreline.
E: Issues, Features and Objectives	The features of the shoreline are listed within this report. A series of strategic objectives are then set along with commentary on the relative importance of each feature identified.
F: Policy Development and Appraisal	Presents the consideration of generic policy options for each frontage identifying possible acceptable policies for testing. Appendix F Also presents the appraisal of impacts upon shoreline evolution and the appraisal of objective achievement.
G: Preferred Policy Scenario Testing	Presents the policy assessment of appraisal of objective achievement towards definition of the Preferred Plan (as presented in the Shoreline Management Plan document).
H: Economic Appraisal and Sensitivity Testing	Presents the economic analysis undertaken in support of the Preferred Plan.
I: Strategic Environmental Assessment Report	Presents the various items undertaken in developing the Plan that specifically relate to the requirements of the EU Council Directive 2001/42/EC (the Strategic Environmental Assessment Directive), such that all of this information is readily accessible in one document. This includes work to help towards a Habitat Regulatory Assessment (HRA).
J: Water Framework Assessment Report	Provides a retrospective assessment of the policies defined under the Severn Estuary SMP2 highlighting future issues for consideration at policy implementation stage.
K: Bibliographic Database	All supporting information used to develop the SMP is referenced for future examination and retrieval.

The information presented in each appendix is supported and guided by other appendices; the broad relationships between the appendices are illustrated overleaf.

Acronyms and Abbreviations

Term	Definition
AA	Appropriate Assessment.
ABP	Association of British Ports
AONB	Area of Outstanding Natural Beauty.
ASERA	Association of Severn Estuary Relevant Authorities
ATL	Advance the Line
BAP	Biodiversity Action Plans
BCCPA	Bristol Channel Counter Pollution Association
BMIF	British Marine Federation
CAPE	Community Adaptation Planning and Engagement
CCW	Countryside Council for Wales
CD	Chart Datum.
CFMP	Catchment Flood Management Plan
CHaMP	Coastal Habitat Management Plan
CPSE	Coast Protection Survey England
CSG	Client Steering Group, principal decision-making body for the Shoreline Management Plan = Severn Estuary Coastal Group (SECG)
CV	Capital Value. The actual value of costs or benefits.
DCLG	Department of Communities and Local Government
DECC	Department of Energy and Climate Change
Defra	Department for Food, Environment and Rural Affairs.
EA	Environment Agency, may also be referred to as 'The Agency'
EH	English Heritage
EiP	Examination in Public
EMF	Elected Members Forum (SMP2), comprising an Elected Member from each of the Local Authorities
FCA	Flood Consequence Assessment
FCDPAG3	Flood and Coastal Defences Project Appraisal Guidance
FCS	Favourable Conservation Status
GCR	Geological Conservation Review site

Term	Definition
GES	Good Ecological Status
GHT	Gloucester Harbour Trustees
GIS	Geographic Information System
HAT	Highest Astronomical Tide
HER	Historic Environment Record
HLT	High Level Target
HMWB	Heavily Modified Water Bodies
HRA	Habitats Regulations Assessment
HTL	Hold the Line
ICZM	Integrated Coastal Zone Management
IFCA	Integrated Flood Consequence Assessment
IROPI	Imperative Reasons of Over-riding Public Interest
JAC	Joint Advisory Committee (of the Severn Estuary Partnership)
KSG	Key Stakeholder Group, which acts as a focal point for discussion and consultation through development of the SMP
KWS	Key Wildlife Sites
LAT	Lowest Astronomical Tide
LDP	Local Development Plan
LPA	Local Planning Authority
MAFF	Ministry of Agriculture Fisheries and Food (now DEFRA)
MCZ	Marine Conservation Zone
MHWN	Mean High Water Neap tide
MHWS	Mean High Water Spring tide
MLWN	Mean Low Water Neap tide
MLWS	Mean Low Water Spring tide
MMO	Marine Management Organisation
MoD	Ministry of Defence
MR	Managed Realignment
MSL	Mean Sea Level
MU	Management Unit

Term	Definition
NAI	No Active Intervention
NE	Natural England
NEDS	National Economic Development Strategy
NFDCC	National Flood and Coastal Defence Database
NMR	National Monuments Record
NNR	National Nature Reserve
NT	National Trust
ODPM	Office of the Deputy Prime Minister
PCPA	Planning and Compulsory Purchase Act
PMG	Project Management Group
PPG	Planning Policy Guidance
PPS	Planning Policy Statement
PSA	Public Service Agreement
PU	Policy Unit
PWW	Planning Policy Wales
QRG	Quality Review Group
RBMP	River Basin Management Plan
RCZAS	Rapid Coastal Zone Assessment Survey
RDP	Rural Development Plan
RSS	Regional Spatial Strategy
RYA	Royal Yachting Association
SAC	Special Area of Conservation
SAM	Scheduled Ancient Monument
SDAP	Sustainable Development Action Plan
SDS	Sustainable Development Schemes
SEA	Strategic Environmental Assessment
SECG	Severn Estuary Coastal Group = Client Steering Group (CSG)
SEFRMS	Severn Estuary Flood Risk Management Strategy
SEP	Severn Estuary Partnership

Term	Definition
SESMP2	Severn Estuary Shoreline Management Plan Review
SFC	Sea Fisheries Committee
SFRA	Strategic flood risk assessment
SMP	Shoreline Management Plan
SMP1	A first-round Shoreline Management Plan
SMP2	A second-round Shoreline Management Plan
SMR	Sites and Monuments Record
SoP	Standard of Protection
SPA	Special Protection Area
SRS	Single Regional Strategy
SSSI	Site of Special Scientific Interest
SuD	Sustainable Urban Drainage System
TAN	Technical Advice Note
UKCiP	United Kingdom Climate Impacts Programme
UKCP	UK Climate Projections
WAG	Welsh Assembly Government
WFD	Water Framework Directive
WPM	With Present Management
WSP	Wales Spatial Plan

Glossary of Terms and Definitions

Term	Definition
Accretion	Accumulation of sand or other beach material due to the natural action of waves, currents and wind
Coastal Squeeze	The reduction in habitat area which can arise if the natural landward migration of a habitat under sea level rise is prevented by a fixation of the high water mark.
Feature (also referred to as Issue)	Something tangible that provides a service to society in one form or another, or more simply, benefits certain aspects of society by its very existence. This will be of a specific geographical location and specific to the SMP.
Foreshore	Zone between high and low water marks
Groyne	Shore protection structure built perpendicular to the shore, designed to trap sediment
Objective	An objective is set, through consultation with key parties, to encourage the resolution of an issue or range of issues. It is a desired state to be achieved in the future
Policy	In this context, 'policy' refers to the generic shoreline management options based on the Defra guidance
Policy Scenario	The combinations of policies selected against the various feature / benefit objectives for the SMP frontage
Policy Unit	Sections of coastline for which a certain coastal defence management policy has been defined.

Compliance to the SMP2 Quality Review Group (QRG) Terms of Reference

This Appendix of the SMP 2 seeks to meet the following requirements set out by the Terms of Reference (ToR) of the Quality Review Group:

- *Impacts of policies on both coastal processes and coastal features (as identified by the Theme Review) are adequately addressed in both the plan summary in the main document and the supporting appendices*
- *The impacts of different policy scenarios have been clearly analysed and compared, e.g. NAI against with present management*
- *The justification (or rejection) of policies is clearly defined in terms of processes, environment, social and economics parameters, both in the short and long-term*
- *The SMP challenges with coastal management options, particularly in the longer term epoch*
- *The decision process is logical and there is a clear audit trail for decisions*
- *The long-term plan does not appear to be driven by any short-term policy options*
- *Where social reasons override the environmental or economic factors to support the preferred policy option, the decision process and any impacts are clearly set out*

This Appendix is divided into two separate Parts:

PART A – Initial SMP2 Policy Appraisal;

PART B – Policy Assessment against Objectives.

1. PART A: INITIAL SMP2 POLICY APPRAISAL

1.1 Aim

The Initial Policy Assessment aims to consider appropriate potential SMP2 policies based on the understanding of local features as set out in the Theme Review (**Appendix D**), their significance and whether they can be replaced (**Appendix E**).

This Appendix outlines the key steps undertaken in the development and definition of policies. Policy Scenarios (referred to in this SMP2 as “Management Approaches” have then been taken forward and appraised and the results of this appraisal are presented in Appendix G.

The recommended approach (Defra Guidance) for development of a sustainable plan is through the assessment of Policy Scenarios to take account of the way lengths of shoreline interact with each other, rather than considering locations in isolation. The aim of this stage has therefore been to identify the appropriate combinations of policies to be appraised for the whole SMP frontage. This has involved the following activities:

- Identification of **Key Policy Drivers**
- Identification of potential policy options through a broad-level appraisal of the four generic policy choices
- Development of Policy Scenarios for assessment

It should be noted that the first two tasks have looked at individual locations in relative isolation, but wider-scale impacts of policies have been assessed during the Policy Scenario appraisal stage which has looked at the likely shoreline response and evolution both locally and along the SMP shoreline as a whole.

1.2 Approach

1.2.1 Policy Unit Development

In the following initial assessment of appropriate policy, each existing **Theme Area** is divided into a series of **Policy Units**. Policy Units were determined by land use, flood and / or erosion risk along the shoreline. Where flood / erosion risk and / or land use is common across a Theme Area boundary, the Policy Unit will cross Theme Area to form a more appropriate Policy Unit. The segmentation of Oldbury and Berkeley Power Stations are examples of how land-use at the shoreline has driven individual Policy Units - the small stretches of shoreline are separate Policy Units due to the different land use and level of risk associated with each site. Extensive flood risk on the Caldicot and Wentlooge Levels has led to the development of large Policy Units here.

The tables presented in this report (**Identification of Potential Policy**) identify those indicative Policy Units and initial policy options that have been reviewed in more detail subsequently. Land use and flood and/or erosion risk along the shoreline are important considerations in the assessment of probable appropriate policy. Different features along the shoreline have conflicting objectives, and therefore multiple policy options are selected through the following assessment for later appraisal over the 3 epochs considered by the SMP2: 0 -20 years, 20 -50 and 50 to 100 years.

Policy Unit titles are related to the Theme Area originally identified to help the reader and for consistency and transparency (e.g. PEN = Penarth).

1.2.2 Policy Options

An initial brief review of all four generic Defra policy options was undertaken to determine which policies could be appropriate, considering not only the defined objectives but also their technical feasibility, and likely economic justification. Details on how these options were communicated to Key Stakeholders (as part of the Policy Development approach undertaken in June 2009 is set out in **Appendix B**).

In order to determine the likely economic justification, a broad assessment was made of assets potentially at risk under the baseline scenario **No Active Intervention (NAI)**. This used the mapping produced as part of the baseline scenario assessment (see **Appendix C**). The possible benefits and opportunities arising from each policy option in relation to the objectives for a frontage were identified, for each of the three epochs. This process allowed identification of which policy options were viable for a particular feature and were therefore taken forward for further scrutiny.

The definitions for this SMP2 as consulted with the Coastal Group are set out below:

- **Hold the Line (HTL)** by maintaining or changing the standard of protection. The standard of protection could increase or decrease.

The intent of this policy is to maintain the current position of the shoreline. This does not necessarily mean that the existing defences would be maintained in exactly the same form as they are at present. There may be a need to adjust the local alignment in the future or to replace or add to structures e.g. constructing cross shore or shore-linked structures, such as groynes or breakwaters, may be one approach adopted under this policy in specific cases. The policy sets the intent to maintain the current position of the coast in an appropriate manner, which will differ depending on the specific local issues. The standard of protection could increase, decrease or stay the same.

- **Advance the Line (ATL)** by building new defences on the seaward side of the original defences, the advancement of the existing defence line assumes land reclamation and increased standard of protection from flooding and erosion to the current assets. Using this policy should be limited to those Policy Units where significant land reclamation is considered.

This scenario has been appraised over the whole life cycle of the SMP2 (i.e. 100-years). Within the tables the 3 epochs have been merged to indicate that advancing the line would have an impact, but should not be considered in each epoch, (i.e. the line would not be advanced in all 3 epochs, it would be advanced once, and then held in that position.) The timing of the process of advancing the line will need to be further appraised in future studies.

- **Managed Realignment (MR)** by allowing the shoreline to move backwards or forwards, with management to control or limit movement (such as reducing erosion or building new defences on the landward side of the original defences).

Managed realignment is used where there is a need for continued intervention to achieve a specific outcome. It may arise from a series of different circumstances. The overall aim is that management of the shoreline would be improved by either allowing or creating the conditions for the coast to realign.

One example of this is moving a linear flood defence back from the active coastal zone, providing a more secure position for defences, while also allowing the shoreline to adjust. In other cases the coast may be allowed to retreat before intervention is undertaken, which may create the opportunity to retain a beach in front of a set back hard defence. Managed

realignment should also take account of how adjacent Policy Units function together. For example, it may be that in one Policy Unit the policy is to hold the line and in doing so; the coast in an adjacent unit is allowed to function more naturally.

This scenario has been appraised over the whole life cycle of the SMP2 (i.e. 100-years). Within the tables the 3 epochs have been merged to indicate that realigning the line would have an impact, but should not be considered in each epoch, (i.e. the line would not be a realigned in all 3 epochs, it would be moved once, and then held in that position.) The timing of the process of realigning the line will need to be further appraised in future studies.

- **No Active Intervention (NAI)**, where there is no investment in coastal defences or operations.

A No Active Intervention policy arises from two distinct sets of circumstances.

1 – The coast needs to be allowed to develop naturally. Typically, it may be that erosion of a frontage is providing sediment to other sections of the coast. It may, therefore, be important that the coast is allowed to continue to erode if sustainable intervention is to be achieved elsewhere.

2 – Where it is unlikely that operating authorities would provide funding for defence. In such cases, privately funded works may still be permissible but there may be conditions associated with this to ensure that private works do not result in negative impacts on other interests.

In setting policy there will be important caveats. There is undoubtedly uncertainty associated with behaviour of the estuary, in particular in relation to the ability to maintain defences in relation to the estuary's response to sea level rise. In addition to the above there are potential impacts on the important natural conservation interests that need to be considered. While the proposed management plan is realistic set against anticipated change this will need to be monitored and reviewed.

1.2.3 Key Policy Drivers

Key Policy Drivers are features that are so important that they can influence the choice of policy option at a large scale, in more than one stretch of shoreline (Policy Unit) and possible across the whole SMP2. Keeping or improving the benefits people get from these features may be a requirement at a regional, national or international level e.g. protecting EU conservation sites is an international commitment. Key Policy Drivers point towards the choice of possible policies. Impacts on Key Policy Drivers have been assessed as major impacts.

Features that are not Key Policy Drivers are not ignored. They are considered in choosing the policy option in the Policy Unit where they are located, but they do not influence the choice of policy beyond their immediate location. Key Policy Drivers can influence the choice of policy option in more than one Policy Unit (i.e.: across a far broader strategic area).

Below sets out how different types of feature have been assessed and whether they are considered to be Key Policy Drivers.

Examples of a key driver may include:

- a power station which must be maintained, due to its national significance, (possibly only for a certain period of time if the facility is to be closed/decommissioned, or:
- an internationally important habitat which relies on constant sediment feed, driving policy for the up-drift shoreline.

The Issues and Features exercise (see **Appendix E**) was used to initially identify key policy drivers for the Estuary. The Key Stakeholders and Elected Members were invited to review and comment at the June 2009 workshop and forum.

2. Identification of Potential Policy Drivers and Options

2.1 Overview to the Section

This section summarises for each Theme Area a series of proposed Policy Units, each containing a broad, high-level appraisal of the policies undertaken to assess potential benefits of implementing a policy. It has been produced to help identify where more detailed policy appraisal work was undertaken (see **Appendix G**). It outlines current SMP1 policy, the key factors within each Policy Unit (including possible Key Policy Drivers for later consideration), whether any Catchment Flood Management Plan (CFMP) policy is assigned within the Policy Unit boundary and the position of the Policy Unit boundary lines, which are an important consideration in later analysis.

At some locations, a change in policy to Managed Realignment (MR) or No Active Intervention (NAI), in the long-term, may potentially offer technical and/or environmental benefits, however its implementation could involve the loss of important environmental or anthropogenic assets. In these locations consideration of the long-term policy is presented for the 50- 100 year time period. This reflects its consideration as a possible long-term goal, and also the barriers to promoting such an approach within the current legislative framework whilst properties remain occupied and environmental site losses require compensation. This does not preclude the earlier implementation of the long-term policy if favourable conditions are achieved sooner.

Stakeholders were consulted for their views regarding the appropriateness of the proposed policy options during the consultation events held in June 2009 (see **Appendix B**).

2.2 Post-consultation amendments

It should be noted that the policy options assessed in this part are those undertaken to prepare the draft SMP2 prior to the public consultation in 2009. Following the analysis of the consultation results, policy options may be changed, based on the feedback and comments received during the consultation. The policies presented in the final SMP2 document could, therefore, differ from those assessed or presented in this Appendix. Comments received and amendments made as a result of the public consultation are set out in Appendix B – Stakeholder Involvement.

2.3 Penarth Theme Area (PEN)

Penarth – South of Forest Road (PEN 1)			
Summary description: Mainly residential – more rural at the southern end.			
Possible Key Policy Drivers - Coastal path, Nature Conservation sites, Residential areas			
Position of ‘the line’: Toe of cliff			
Policy	Years 0 –20(2025)	Years 20–50(2055)	Years 50–100(2105)
Hold the Line	To be appraised – No defences exist – minimal benefits, highly costly.		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible – no defences to manage, technically difficult and costly – low erosion, no risk of flooding		
No Active Intervention	To be appraised – Low rate of erosion, no risk of flooding – preferred option		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Lavernock Point to Penarth Esplanade		Do Nothing

Penarth – Forest Road to Penarth Head (PEN 2)			
Summary description: Mainly residential and small scale commercial, hotels, B&Bs			
Possible Key Policy Drivers - Coastal path, Nature Conservation sites, Pier, Lifeboat station, Residential properties			
Position of ‘the line’: Toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50–100 (2105)
Hold the Line	Some defences – sea wall and groynes. Low erosion, flood risk to esplanade – to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible		
No Active Intervention	Low rate of erosion, no risk of flooding – to be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Lavernock Point to Penarth Esplanade		Do Nothing
	Penarth Esplanade		Hold the Line
	Penarth Head		Hold the Line or Retreat the Line (by cliff control)

2.4 Cardiff Theme Area (CAR)

Cardiff – Cardiff Bay (CAR 1)			
Summary description: Residential, commercial, hotels, offices			
Possible Key Policy Drivers – Coastal path (along Barrage), Cardiff Barrage & Bay			
Position of ‘the line’: Barrage			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised – Defences – Cardiff Barrage 1,000 year SoP		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible		
No Active Intervention	Not feasible – Barrage must be maintained		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Cardiff Bay Barrage		Hold the Line

Cardiff – Barrage to River Rhymney, Rover Way (CAR 2)			
Summary description: Mainly industrial and commercial, some residential			
Possible Key Policy Drivers - Coastal path, Nature Conservation sites, Pier, docks			
Position of ‘the line’: crest of existing defences / made ground or current line of high ground			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Some defences – made ground with intermittent rock armouring. Some flood risk in Tremorfa in 20-50 yrs. Will protect residential and industrial assets – to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible – would require relocation of large area of industrial, commercial and residential properties		
No Active Intervention	Low rate of erosion, low flood risk in short term – to be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Cardiff Bay Barrage		Hold the Line
	North of Cardiff Flats to Pengam Moor		Hold the Line
	River Rhymney		Hold the Line

Cardiff – River Rhymney to Lamby Way landfill site drain / sewer outfall (CAR 3)			
Summary description: Mainly commercial and residential			
Possible Key Policy Drivers - Coastal path, Nature Conservation sites, Commercial, Residential, Landfill site			
Position of ‘the line’: crest of existing defences / made ground, current line of high ground or crest of river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Some defences – earth embankments Some flood risk in Tremorfa in 20-50 yrs. Will protect residential and industrial assets – to be appraised – consider CFMP policy		
Advance the Line	No benefits, and potential environmental impacts		
Managed Realignment	Not feasible – would require relocation of large area of industrial, commercial and residential properties		
No Active Intervention	Low rate of erosion, low flood risk in short term – to be appraised – consider CFMP policy		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	River Rhymney		Hold the Line
CFMP Policy	CFMP Unit		Policy
	River Rhymney PU7		Policy 3 take actions to maintain flood risk at current level (accepting that flood risk will increase over time)

2.5 Wentlooge Theme Area (WEN)

Wentlooge – Lamby Way Landfill site drain / sewer outfall to Sluice House Farm / Tarwick Rhyne (WEN 1)			
Summary description: mainly residential, commercial, becoming agricultural towards northern end			
Possible Key Policy Drivers - Nature Conservation sites, railway line, residential, commercial, agricultural properties, heritage landscape; electricity transmission network, sewerage infrastructure.			
Position of 'the line': grass embankment			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – grass embankment fronted by rock armour with foreshore polders Long term erosion, flood risk if defences fail Will protect residential and industrial assets – to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible in short / medium term. Long term – to be appraised		
No Active Intervention	Not feasible in short / medium term. Long term – to be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Rumney Great Wharf		Hold the Line or Retreat the Line

Wentlooge – Sluice House Farm / Tarwick Rhyne to west bank of River Ebbw at Maesglas railway bridge (WEN 2)			
Summary description: mainly agricultural and residential			
Possible Key Policy Drivers - Nature Conservation sites, railway line, heritage landscape, electricity transmission network, sewerage infrastructure			
Position of ‘the line’: grass embankment			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – grass embankment fronted by rock armour Flood risk if defences fail Will protect agricultural assets – to be appraised – consider CFMP policy		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible in short / medium term. Long term – to be appraised - consider CFMP policy		
No Active Intervention	Not feasible – large area at risk		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Peterstone Great Wharf		Hold the Line
	Peterstone Gout to East of Outfall Lane		Hold the Line
	East of Outfall Lane to New Gout		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 7 (Ebbw)		Policy 3 take actions to maintain flood risk at current level (accepting that flood risk will increase over time)

2.6 Newport and Usk Theme Area (NEW)

Newport – East bank of River Ebbw at Maesglas railway bridge to west bank Usk at transporter bridge (NEW 1)			
Summary description: Newport docks			
Possible Key Policy Drivers - Nature Conservation sites, docks,			
Position of 'the line': crest of river bank or defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised Defences – earth embankment ; Flood risk – minimal in short term, increased flooding in medium term Will protect docks – to be appraised - consider CFMP policy		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible – would require relocation of docks		
No Active Intervention	Not feasible beyond short term – to be appraised - consider CFMP policy		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Ebbw River to the Transporter Bridge		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 7 (Ebbw)		Policy 3 take actions to maintain flood risk at current level (accepting that flood risk will increase over time)

Newport – west bank of Usk at transporter bridge to west bank of Usk at M4 crossing (NEW 2)			
Summary description: mainly industrial and residential			
Possible Key Policy Drivers - Nature Conservation sites, industrial assets			
Position of 'the line': crest of river bank or defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment and masonry walls Flood risk – risk of flooding if defences fail Will protect industrial / residential assets – to be appraised - consider CFMP policy		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible – would require large scale relocation of industry		
No Active Intervention	Not feasible beyond short term – to be appraised - consider CFMP policy		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Transporter Bridge to the M4		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 7 (Usk)		Policy 5 - take further action to reduce flood risk

Newport – Usk (both banks) at M4 crossing to Newbridge on Usk (NEW 3)			
Summary description: approx 50% residential, 50% countryside/agricultural			
Possible Key Policy Drivers - Nature Conservation sites, residential properties, historic environment (Caerleon), M4			
Position of ‘the line’: crest of river bank or defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment and masonry walls risk of flooding if defences fail Will protect residential / agricultural assets – to be appraised - consider CFMP policy		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	To be appraised for potential long term technical and environmental benefits – consider CFMP policy		
No Active Intervention	To be appraised for potential long term technical and environmental benefits – consider CFMP policy		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	The M4 to Caerleon (both banks)		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 7 (Usk)		Policy 5 - take further action to reduce flood risk

Newport – east bank of Usk at M4 crossing to Spytty Pill, north of A48 crossing (NEW 4)			
Summary description: mainly residential, some industrial at southern end of unit			
Possible Key Policy Drivers - Nature Conservation sites, residential properties, M4			
Position of ‘the line’: crest of river bank or defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment with reinforced concrete walls Risk of flooding if defences fail Will protect residential assets – to be appraised - consider CFMP policy – consider links with adjacent Policy Units		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible – would require large scale relocation of numerous residential properties		
No Active Intervention	Not feasible – would result in large scale inundation of numerous residential properties		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	M4 to Spytty Pill		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 7 (Usk)		Policy 5 - take further action to reduce flood risk

Newport – Spytty Pill, north of A48 crossing to Uskmouth Power station point (NEW 5)			
Summary description: mainly industrial			
Possible Key Policy Drivers - Nature Conservation sites, residential properties, Uskmouth Power Station			
Position of ‘the line’: crest of river bank or defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment and masonry walls risk of flooding if defences fail Will protect industrial assets – to be appraised - consider CFMP policy – consider links with adjacent Policy Units		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible – would require large scale relocation of numerous industrial properties and power station		
No Active Intervention	Not feasible – would result in large scale inundation of industrial properties and power station		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Spytty Pill to Uskmouth Power Station		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 7 (Usk)		Policy 5 - take further action to reduce flood risk

2.7 Caldicot Levels Theme Area (CALD)

Caldicot – Uskmouth Power Station point to Sudbrook Point, north of M4 Severn Crossing (CALD 1)			
Summary description: mainly agricultural / countryside, some industrial / waste sites near Newport ; Nash waste water treatment works			
Possible Key Policy Drivers – Llanwern Steelworks, heritage landscape, Nature Conservation sites, isolated residential properties, railway, M4, electricity transmission network, sewerage infrastructure.			
Position of ‘the line’: crest of embankment defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment with rock armouring / concrete revetment Significant risk of flooding if defences fail Will protect agricultural / industrial assets – to be appraised – consider links with adjacent Policy Units		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible in short / medium term. Long term – to be appraised		
No Active Intervention	Would result in large scale uncontrolled inundation of agricultural assets and industry assets (Llanwern) and infrastructure services		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Uskmouth Power Station to Saltmarsh Farm		Hold the Line
	Saltmarsh Farm to Gold Cliff		Hold the Line (or locally retreat the line)
	Gold Cliff to Cold Harbour Pill		Hold the Line
	Cold Harbour Pill to West Pill		Hold the Line
	West Pill to West of Sudbrook Point		Hold the Line

Caldicot – Sudbrook Point, north of M4 Severn Crossing to Black Rock at Black Rock Road (CALD 2)			
Summary description: mainly agricultural / countryside, some residential			
Possible Key Policy Drivers – electricity transmission network, heritage landscape, Nature Conservation sites, isolated residential properties			
Position of ‘the line’: crest of embankment defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – rock armouring and groynes No erosion or flood risk – higher ground Will protect agricultural / residential assets – to be appraised – consider links with adjacent Policy Units		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible – no defences to manage, technically difficult and costly – low erosion, no risk of flooding		
No Active Intervention	Low rate of erosion, no risk of flooding – preferred option		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Sudbrook Point to Black Rock		Do Nothing, locally Hold the Line or Retreat the Line.

Caldicot – Black Rock at Black Rock Road to west bank of River Wye at Park Redding, Thornwell (CALD 3)			
Summary description: mainly agricultural / countryside, some industrial near mouth of River Wye			
Possible Key Policy Drivers – electricity transmission network, railway, A48, heritage landscape, Nature Conservation sites, isolated residential properties			
Position of ‘the line’: crest of embankment defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment with rock armouring Significant risk of flooding if defences fail Will protect agricultural assets, electricity and transport infrastructure – to be appraised – consider links with adjacent Policy Units		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	To be appraised for medium / long terms		
No Active Intervention	To be appraised for short term		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Sudbrook Point to Black Rock		Do Nothing, locally Hold the Line or Retreat the Line

2.8 Wye and Chepstow Theme Area (WYE)

Wye – west bank Wye at Park Redding, Thornwell to west bank River Wye at Alcove Wood, Chepstow (WYE 1)			
Summary description: mainly residential, some industrial			
Possible Key Policy Drivers – electricity transmission network, railway, A48, heritage sites, Nature Conservation sites			
Position of ‘the line’: crest of defences / river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Hard defences Limited erosion and flood risk Will protect residential assets, transport infrastructure – to be appraised – consider links with adjacent Policy Units		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible – would require large scale relocation of numerous residential and industrial assets		
No Active Intervention	Not feasible – limited process benefit, inundation of residential assets		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Chepstow from Thornwell to Alcove Wood		Do Nothing, locally Hold the Line

Wye – west bank River Wye at Alcove Wood, Chepstow to Bigsweir Bridge + east bank River Wye at Bigsweir Bridge to Bridge Street bridge, Sedbury (WYE 2)			
Summary description: mainly agricultural / countryside, some residential			
Possible Key Policy Drivers – Nature Conservation sites, historic environment assets			
Position of ‘the line’: crest of river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	No defences Very limited erosion and flood risk No benefit – limited risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	Potential process benefits – to be appraised – preferred option		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Alcove Wood to Tintern Abbey, Tintern Abbey to Chapel House Wood		Do Nothing, locally Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 1 (Wye)		Policy 4 - Take further action to sustain current scale of flood risk into the future (responding to the potential increases in flood risk from urban development, land use change, and climate change).
	Policy Unit 4 (Wye)		Policy 6 Take action with others to store water or manage run-off in locations that provide overall flood risk reduction or environmental benefits, locally or elsewhere in the catchment

Wye – east bank River Wye at Bridge Street bridge, Sedbury to Sedbury STW (WYE 3)			
Summary description: mainly residential			
Possible Key Policy Drivers – Nature Conservation sites, railway line, A48			
Position of ‘the line’: crest of river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	No defences Very limited erosion and flood risk No benefit – limited risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	To be appraised - Potential process benefits – to be appraised – preferred option		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Alcove Wood to Tintern Abbey, Tintern Abbey to Chapel House Wood		Do Nothing, locally Hold the Line
	Chapel House Wood to Sedbury Sewage Works		Do Nothing
CFMP Policy	CFMP Unit		Policy
	Policy Unit 1 (Wye)		Policy 4 - Take further action to sustain current flood risk (responding to the potential increases in flood risk from urban development, land use change, and climate change).
	Policy Unit 4 (Wye)		Policy 6 Take action with others to store water or manage run-off in locations that provide overall flood risk reduction or environmental benefits, locally or elsewhere in the catchment

Wye – east bank River Wye at Sedbury STW to End of Beachley Road, Beachley Point (WYE 4)			
Summary description: agricultural / countryside, MOD site			
Possible Key Policy Drivers – Nature Conservation sites, railway line, A48			
Position of ‘the line’: crest of river bank / cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	No defences Very limited erosion and flood risk No benefit – limited risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	To be appraised - Potential process benefits – to be appraised – preferred option		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Sedbury Sewage Works to north Beachley		Do Nothing
	Beachley Point		Do Nothing
CFMP Policy	CFMP Unit		Policy
	Policy Unit 1 (Wye)		Policy 4 - Take further action to sustain current flood risk (responding to the potential increases in flood risk from urban development, land use change, and climate change).
	Policy Unit 4 (Wye)		Policy 6 Take action with others to store water or manage run-off in locations that provide overall flood risk reduction or environmental benefits, locally or elsewhere in the catchment

2.9 Tidenham and Surrounding Villages Theme Area (TID)

Tidenham and other villages – End of Beachley Road, Beachley Point to Guscar Rocks (TID 1)			
Summary description: agricultural / countryside			
Possible Key Policy Drivers – Nature Conservation sites, railway line			
Position of ‘the line’: crest of river bank / cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	No defences – railway embankment Limited erosion, some long term flood risk No benefit – limited risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	May have Nature Conservation benefits in long term – to be appraised		
No Active Intervention	To be appraised - Potential process benefits – to be appraised – preferred option		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Beachley to Sedbury Cliffs		Do Nothing
	Sedbury Cliffs		Do Nothing
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Tidenham and other villages – Guscar Rocks to Lydney Harbour (TID 2)			
Summary description: agricultural / countryside			
Possible Key Policy Drivers – Nature Conservation sites, railway line			
Position of ‘the line’: crest of river bank / cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Rock armour revetment Limited erosion, flood risk if defence fails – links to Lydney Will protect railway, agricultural assets, Lydney - to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	May have Nature Conservation benefits in long term – to be appraised		
No Active Intervention	No process benefits		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Guscar Rocks to Lydney Harbour Mouth		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

2.10 Lydney Theme Area (LYD)

Lydney – Lydney Harbour basin (LYD 1)			
Summary description: agricultural / countryside			
Possible Key Policy Drivers – Nature Conservation sites, railway line, harbour area			
Position of ‘the line’: top of harbour basin bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	No defences – railway embankment Limited erosion, some long term flood risk Will protect railway, agricultural assets, Lydney - to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Not feasible – would require relocation of harbour		
No Active Intervention	Potential uncontrolled inundation of harbour and Lydney		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Guscar Rocks to Lydney Harbour Mouth		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 8 Lydney – Severn Tidal Tributaries		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

2.11 Lydney to Gloucester Theme Area (GLO)

Lydney to Gloucester – Lydney Harbour to Brims Pill (GLO 1)			
Summary description: agricultural / countryside, isolated residential			
Possible Key Policy Drivers – Nature Conservation sites, railway line, agricultural assets			
Position of ‘the line’: top river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	No defences Limited erosion and flood risk No benefit – limited risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No benefits		
No Active Intervention	To be appraised – limited risk – preferred option		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Lydney Harbour to Cliff Farm		Do Nothing
	Cliff Farm to Wellhouse Rock		Hold the Line
	Wellhouse Rock to Poulton Court		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Lydney to Gloucester – Brims Pill to Northington Farm (GLO 2)			
Summary description: agricultural / countryside, residential (Awre)			
Possible Key Policy Drivers – Nature Conservation sites, line, agricultural assets, electricity transmission network			
Position of ‘the line’: top river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	No defences – except railway embankment Limited erosion and flood risk Economically non-viable		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	May have Nature Conservation benefits – to be appraised		
No Active Intervention	May have Nature Conservation benefits – to be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Whitescourt to Hayward		Hold the Line or Retreat the Line
	Hayward to Northington Farm		Hold the Line or Retreat the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Lydney to Gloucester – Northington Farm to Newnham Church (GLO 3)			
Summary description: agricultural / countryside, residential (Newnham)			
Possible Key Policy Drivers – Nature Conservation sites, railway line, agricultural assets, A48			
Position of ‘the line’: top river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – high ground / earth embankments Limited erosion and flood risk Economically non-viable		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No Nature Conservation / habitat creation options		
No Active Intervention	To be appraised – preferred option – limited risk		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Northington Farm to Portlands Nab		Do Nothing (generally) or Hold the Line (locally)
	Portlands Nab to the downstream boundary of Newnham		Do Nothing (generally) or Hold/Retreat the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Lydney to Gloucester – Newnham Church to Farm north of Broadoak (GLO 4)			
Summary description: agricultural / countryside, residential (Newnham, Broadoak)			
Possible Key Policy Drivers – Nature Conservation sites, railway line, residential assets, A48			
Position of ‘the line’: top river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised Defences – earth embankments, natural steep bank Limited erosion, some flood risk Will protect residential assets, transport infrastructure		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No Nature Conservation / habitat creation options		
No Active Intervention	Would result in uncontrolled inundation of residential properties and transport infrastructure		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Newnham and Broadoak		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Lydney to Gloucester – Farm to north of Broadoak to Hill Farm, Rodley (GLO 5)			
Summary description: agricultural / countryside, isolated residential			
Possible Key Policy Drivers – Nature Conservation sites, residential assets			
Position of ‘the line’: toe of cliff, top of embankment			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankments, natural low cliffs Limited erosion, flood risk to agricultural land Economically non-viable		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	May be Nature Conservation / habitat creation benefits in medium / long term – to be appraised		
No Active Intervention	To be appraised – preferred option – limited risk		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Broadoak to the upstream end of Garden Cliff		Hold the Line, locally Do Nothing
	The Dumballs		Hold the Line
	Rodley to Bollow		Do Nothing
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Lydney to Gloucester – west bank at Hill Farm, Rodley to west bank at Goose Lane farm (GLO 6)			
Summary description: agricultural / countryside, isolated residential			
Possible Key Policy Drivers - Nature Conservation sites, residential / agricultural assets			
Position of ‘the line’: top of river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	No defences – natural high ground Limited erosion and flood risk No benefit – limited risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No Nature Conservation / habitat creation options		
No Active Intervention	To be appraised – preferred option – limited risk		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Rodley to Bollow		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Lydney to Gloucester – west bank at Goose Lane farm to west bank at Ley Road (GLO 7)			
Summary description: agricultural / countryside, isolated residential			
Possible Key Policy Drivers – Nature Conservation sites, residential / agricultural assets, A48			
Position of ‘the line’: top of river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment Limited erosion, some flood risk Will protect residential / transport assets – to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Possible Nature Conservation / habitat creation options – would require relocation of transport links / residential assets – to be appraised		
No Active Intervention	May be process benefits – would result in inundation of transport links / residential assets – to be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Bollow to Hartland’s Hill		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Lydney to Gloucester – Ley Road to Drain from Long Brook (GLO 8)			
Summary description: agricultural / countryside, isolated residential			
Possible Key Policy Drivers – Nature Conservation sites, residential / agricultural assets, A48, railway			
Position of ‘the line’: top of river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment, natural high ground Limited erosion, some flood risk Will protect residential / transport assets – to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Possible Nature Conservation / habitat creation options – would require relocation of transport links / residential assets – to be appraised		
No Active Intervention	May be process benefits – would result in inundation of transport links / residential assets – to be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Hartland’s Hill to Denny Hill		Hold the Line
	Denny Hill to Minsterwortham		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

2.12 Gloucester to Haw Bridge Theme Area (MAI)

Gloucester to Maisemore – West bank at Drain from Long Brook to west bank at railway / A40 bridge (MAI 1)			
Summary description: agricultural / countryside, some residential (Minsterworth)			
Possible Key Policy Drivers – Nature Conservation sites, residential / agricultural assets, A48, A40, railway			
Position of ‘the line’: top of river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment Limited erosion, extensive flood risk Will protect residential assets – to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	Possible Nature Conservation / habitat creation options in areas – No tidal process benefits – but would improve flood flow – to be appraised		
No Active Intervention	Would result in uncontrolled inundation of large flood risk areas – not preferred due to risk of uncontrolled nature		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Lower Parting to Maisemore Weir		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries CFMP)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Gloucester to Maisemore – West bank from Railway / A40 bridge to west bank at Haw Bridge, including River Leadon (MAI 2)			
Summary description: agricultural cultural / countryside, some residential (Maisemore)			
Possible Key Policy Drivers – Nature Conservation sites, residential / agricultural assets, A417, railway			
Position of ‘the line’: top of river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment Limited erosion, some flood risk Will protect residential assets – to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	Floodplain develops naturally – management of flood risk by non-engineering interventions – to be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	No policy set		No policy set
CFMP Policy	CFMP Unit		Policy
	Policy Unit 10 (Lower Severn Corridor – Severn CFMP)		Policy 2 – Reduce existing flood risk management actions (accepting that flood risk will increase over time)
	Policy Unit 18 (Leadon – Severn CFMP)		Policy 2– Reduce existing flood risk management actions (accepting that flood risk will increase over time)
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries CFMP)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Gloucester to Maisemore – East bank at Haw Bridge (B4213) to Upper Parting (MAI 3)			
Summary description: agricultural cultural / countryside, some residential			
Possible Key Policy Drivers – Nature Conservation sites, residential / agricultural cultural assets			
Position of ‘the line’: top of river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment Limited erosion, some flood risk Will protect residential assets – to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No tidal process benefits – but would improve flood flow		
No Active Intervention	Shoreline develops naturally – management of flood risk by non-engineering interventions – to be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	No policy set		No policy set
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn CFMP)		Policy 3 – take actions to maintain flood risk at current level (accepting that flood risk will increase over time)
	Policy Unit 3 (Gloucester Streams – Severn CFMP)		Policy 5 – take further action to reduce flood risk

Gloucester to Maisemore –Upper Parting to Lower Parting (left bank of parting) (MAI 4)			
Summary description: Residential developments at Gloucester, infrastructure network to support the city and heritage features			
Possible Key Policy Drivers – mainly residential / agricultural cultural assets other infrastructure (roads)			
Position of ‘the line’: crest of defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – earth embankment and Sea wall at Quay Limited erosion, isolated frequent flood risk Will protect residential assets – to be appraised against CFMP		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	Not feasible		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Llanthony Weir to Lower Parting		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 3 (Gloucester Streams – Severn Tidal Tributaries CFMP)		Policy 5 – Take further action to reduce flood risk
	Policy Unit 10 (Lower Severn Corridor – Severn CFMP)		Policy 2 – Reduce existing flood risk management actions (accepting that flood risk will increase over time)
	Policy Unit 17 (Cheltenham & NE Gloucester – Severn CFMP)		Policy 5 – Take further action to reduce flood risk

Gloucester to Maisemore – Alney Island (MAI 5)			
Summary description: agricultural cultural / countryside			
Possible Key Policy Drivers – Nature Conservation sites, agricultural cultural assets main access roads (A40 and A417)			
Position of ‘the line’: top of river bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – high ground and flood walls Limited erosion, some flood risk to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	To be appraised		
No Active Intervention	Management of flood risk by non-engineering interventions – to be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Lower Parting to Maisemore Weir (west channel)		Hold the Line
	Llathony Weir to the Lower Parting (east channel)		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 3 (Gloucester Streams–Severn Tidal Tributaries CFMP)		Policy 5 – Take further action to reduce flood risk

Gloucester to Maisemore – Lower Parting to Severn Farm (MAI 6)			
Summary description: agricultural cultural / countryside residential			
Possible Key Policy Drivers – STW, residential, monk meadow industrial, A38, Gloucester to Sharpness canal			
Position of ‘the line’: crest of defence/top of bank			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – high ground and embankments Limited erosion, some flood risk to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	No benefits would result from movement of the line. Consider locally		
No Active Intervention	To be appraised – consider economic drivers		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Lower parting to Rea		Hold the Line
	Rea to Windmill Hill		Hold the Line (locally Do Nothing)
	Windmill Hill to east end of Elmore		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 3 (Gloucester Streams– Severn Tidal Tributaries CFMP)		Policy 5 – Take further action to reduce flood risk

2.13 Gloucester to Sharpness Theme Area (SHAR)

Gloucester to Sharpness –Severn Farm to Wicks Green (SHA 1)			
Summary description: agricultural / countryside residential			
Possible Key Policy Drivers – long term habitat creation, mainly agricultural some residential, tourism (tidal bore)			
Position of ‘the line’: crest of defence			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – high ground and embankments Limited erosion, extensive flood risk should defences fail to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	Long term appraisal		
No Active Intervention	To be appraised – consider economic drivers		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Elmore		Hold the Line
	West end of Elmore to Wicksgreen		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 3 (Gloucester Streams– Severn Tidal Tributaries CFMP)		Policy 5 – Take further action to reduce flood risk
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Gloucester to Sharpness – Wicks Green to Longley Green (SHA 2)			
Summary description: agricultural / countryside residential			
Possible Key Policy Drivers – long term habitat creation mainly agricultural some residential Consider adjacent units i.e. may join with SHA1			
Position of ‘the line’: crest of defence			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – high ground and embankments Limited erosion, extensive flood risk should defences fail to be appraised		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	Long term appraisal		
No Active Intervention	To be appraised – consider economic drivers		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Wicksgreen to Longley Crib		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Gloucester to Sharpness – Longley Green to Overton Lane (SHA 3)			
Summary description: agricultural / countryside residential			
Possible Key Policy Drivers – mainly agricultural some residential settlements (Framilode and Priding)			
Position of ‘the line’: top of bank / crest of defence			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	to be appraised Defences – high ground and embankments Limited erosion, extensive flood risk from failure of defence, leaving Arlingham as a island		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	No benefits, would result from movement of the line		
No Active Intervention	To be appraised – consider economic drivers		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Longley Crib to Priding Wick		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level
	Policy Unit 5 (Frome – Severn Tidal Tributaries)		Policy 4 – Take further action to sustain the current level of risk into the future

Gloucester to Sharpness – Overton Lane to upstream of Hock Cliff (SHA 4)			
Summary description: agricultural / countryside residential			
Possible Key Policy Drivers – Nature Conservation Sites, mainly agricultural some residential settlements			
Position of ‘the line’: top of bank / crest of defence			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	to be appraised Defences – high ground and embankments Limited erosion, extensive flood risk from failure of defence, leaving Arlingham as a island		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	To be appraised – long term habitat creation		
No Active Intervention	To be appraised – consider economic drivers and geological and ecological features		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Pridding Wick court to Longmarsh Pill		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Gloucester to Sharpness – Hock Cliff (SHA 5)			
Summary description: hard geology cliff face			
Possible Key Policy Drivers – Nature Conservation site (Hock Cliff)			
Position of ‘the line’: Toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	high ground Limited erosion and flood risk to be appraised		
Advance the Line	No benefits, potential environmental impacts, would result from movement of the line.		
Managed Realignment	Not appropriate		
No Active Intervention	To be appraised – consider geological features and possible coastal process benefit		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Long Marsh Pill to Hock Ditch		Do Nothing
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Gloucester to Sharpness – downstream of Hock Cliff to Frampton Pill (SHA 6)			
Summary description: mainly agricultural some isolated residential			
Possible Key Policy Drivers – sharpness to Gloucester canal, agricultural some residential			
Position of ‘the line’: crest of defence (defence follows canal)			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - conveyance of water to adjacent Policy Units Flood risk to adjacent Policy Units via the Canal?		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	Not appropriate		
No Active Intervention	To be appraised needs to consider economic drivers and land loss		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Hock Cliff to Frampton Breakwater		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level
	Policy Unit 5 (Frome – Severn Tidal Tributaries)		Policy 4 – Take further action to sustain the current level of risk into the future

Gloucester to Sharpness – Frampton Pill to Royal Drift outfall (SHA 7)			
Summary description:			
Possible Key Policy Drivers – sharpness to Gloucester canal, agricultural some residential			
Position of ‘the line’: crest of defence (earth embankment)			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - Flood risk is low, but could impact on the canal, WWT Slimbridge, environmental designations if the earth embankment fails.		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	To be appraised - This is a potential habitat creation site in the short term, so MR is very possible.		
No Active Intervention	To be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Frampton Breakwater to The Dumbles The Royal Drift		Hold the line or Retreat the Line Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level
	Policy Unit 5 (Frome – Severn Tidal Tributaries)		Policy 4 – Take further action to sustain the current level of risk into the future
	Policy Unit 6 (Little Avon and Cam – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Gloucester to Sharpness – Royal Drift outfall to Sharpness Docks (SHA 8)			
Summary description: hard geology cliff with rock outcrops, predominant tidal process			
Possible Key Policy Drivers – sharpness to Gloucester canal, agricultural some residential, docks and related industry			
Position of ‘the line’: crest of defence/toe of cliff, Nature Conservation sites			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - limited flood risk and erosion		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	Not appropriate		
No Active Intervention	To be appraised		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Tites Point to South Ridge Sand		Hold the Line
	Sharpness (north)		Hold the Line
	Sharpness (west)		Hold the Line (locally)
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

2.14 Sharpness to Severn Crossings Theme Area (SEV)

Sharpness to Severn Crossings –Sharpness docks to Bull Rock (SEV 1)			
Summary description: earth embankments and muddy foreshore			
Possible Key Policy Drivers – STW, some residential and agricultural, Docks and related infrastructure, Nature Conservation sites			
Position of ‘the line’: crest of defence			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - limited flood risk and erosion, flood cell links to adjacent unit (extensive flooding)		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	To be appraised in light of impact on Berkley and Oldbury power station, could create island		
No Active Intervention	To be appraised in light of impact on Berkley and Oldbury power station, could create island		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Sharpness (west)		Hold the Line (locally)
	South of Sharpness Docks to Berkley Pill		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level
	Policy Unit 6 (Little Avon and Cam – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Sharpness to Severn Crossings –Bull Rock to southern boundary of Berkley power station (SEV 2)			
Summary description: higher ground with Berkley Power Station			
Possible Key Policy Drivers - Berkley power station and associated infrastructure, Nature Conservation sites			
Position of ‘the line’: crest of defence			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - limited flood risk and erosion, flood cell links to adjacent unit (extensive flooding)		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	No benefits - detrimental impact on power station		
No Active Intervention	No benefits - detrimental impact on power station		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Berkley Power Station		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level
	Policy Unit 6 (Little Avon and Cam – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Sharpness to Severn Crossings –southern boundary of Berkley power station to Oldbury Power station (SEV 3)			
Summary description: low lying and extensive flood risk			
Possible Key Policy Drivers – agricultural Nature Conservation sites, impact on adjacent cells			
Position of ‘the line’: crest of defence			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - limited erosion and extensive flood risk, flood cell links to adjacent unit (extensive flooding)		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	To be appraised in light of impact on Berkley and Oldbury power station, could create island		
No Active Intervention	To be appraised in light of impact on Berkley and Oldbury power station, could create island		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	South of Berkley Power Station to Chapel House		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level
	Policy Unit 6 (Little Avon and Cam – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Sharpness to Severn Crossings –Oldbury power station (SEV 4)			
Summary description: higher ground with Oldbury Berkley Power Station			
Possible Key Policy Drivers – Oldbury power station, agricultural to hinterland, tidal reservoir, Nature Conservation sites			
Position of ‘the line’: toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - limited flood risk and erosion, flood cell links to adjacent unit (extensive flooding)		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	No benefits - detrimental impact on power station		
No Active Intervention	No benefits - detrimental impact on power station		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Chapel House to Oldbury Power Station		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level
	Policy Unit 6 (Little Avon and Cam – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Sharpness to Severn Crossings – Oldbury power station to Littleton Warth (SEV 5)			
Summary description: muddy foreshore, possibly accreting. Mainly agricultural			
Possible Key Policy Drivers – agricultural, Nature Conservation sites, heritage, industrial, small residential (Oldbury on Severn)			
Position of ‘the line’: crest of defence			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - some flood risk and erosion, flood cell links to adjacent unit (extensive flooding) Earth embankments		
Advance the Line	No benefits, and potential environmental impacts, would result from movement of the line.		
Managed Realignment	To be appraised – consider economic drivers		
No Active Intervention	To be appraised – consider economic drivers and impact on adjacent units		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Oldbury to Littleton		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

Sharpness to Severn Crossings – Littleton Warth to Aust Ferry (SEV 6)			
Summary description: hard geology cliff face, mainly agricultural in hinterland			
Possible Key Policy Drivers – agricultural, Nature Conservation sites, M48 road crossing and services, power line crossing and pier, small residential developments, power substation, Geological SSSI			
Position of ‘the line’: toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised long term? - limited flood risk and erosion		
Advance the Line	No benefits would result from forward movement of the line.		
Managed Realignment	Not appropriate		
No Active Intervention	To be appraised – consider geological features longer term consider economic assets		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Aust Cliff to Old Passage		Do Nothing (locally Hold the Line)
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level

2.15 Bristol and Severnside Theme Area (BRIS)

Bristol and Severnside – Aust Ferry (site of) to New Passage (BRIS 1)			
Summary description: mainly agricultural, some infrastructure			
Possible Key Policy Drivers – power line crossing, M4, M48, Severn tunnels other roads (A403), scattered residential settlements, agricultural land; habitat creation potential; industrial assets Nature Conservation Sites			
Position of ‘the line’: crest of embankments			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - undefended with localised earth embankments		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	To be appraised - earth embankments for potential habitat creation		
No Active Intervention	To be appraised - largely undefended at present limited erosion and flood risk		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Old Passage to new Passage		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level
	Policy Unit 7 (Avonmouth / Severnside – Severn Tidal Tributaries)		Policy 4 – Take further action to sustain the current level of risk into the future

Bristol and Severnside – New Passage to north extent of Severnside Works (BRIS 2)			
Summary description: some agricultural and key infrastructure			
Possible Key Policy Drivers – Severn Beach residential area; Second Severn Crossing; power line crossing, flood risk to M5, M48, M49, Severn tunnels other roads (A403), agricultural land; industrial assets, railway line (defences), heritage maritime importance, waste tips, chemical processing plants, Nature Conservation sites			
Position of ‘the line’: earth embankment			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - significant flood risk to adjacent Policy Units Earth embankments and sea wall		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No benefits would result from landward movement of the line.		
No Active Intervention	Not appropriate		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	New Passage to N of Severnside Works		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 2 (Severn Vale – Severn Tidal Tributaries)		Policy 3 – Continue with existing or alternative actions to manage flood risk at the current level
	Policy Unit 7 (Avonmouth / Severnside – Severn Tidal Tributaries)		Policy 4 – Take further action to sustain the current level of risk into the future

Bristol and Severnside - North extent of Severnside Works to Avonmouth Pier (BRIS 3)			
Summary description: Avonmouth docks and related infrastructure			
Possible Key Policy Drivers – Low lying shoreline, Avonmouth village; power line crossing, flood risk to M5 and M49, industrial assets, railway line (defences), heritage maritime importance, waste tips, chemical processing plants, Nature Conservation Sites			
Position of ‘the line’: crest of existing private defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - significant flood risk to adjacent Policy Units		
Advance the Line	To be appraised - significant private development and ownership issues		
Managed Realignment	Not appropriate – large area of economic importance		
No Active Intervention	Not appropriate – large area of economic importance		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Severnside Works to Mitchell's Salt Rhine		Hold the Line
	Mitchell's Salt Rhine to Avonmouth Pier		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Policy Unit 7 (Avonmouth / Severnside – Severn Tidal Tributaries)		Policy 4 – Take further action to sustain the current level of risk into the future

Bristol and Severnside – M5 Crossing (Avon, Right Bank) to Netham Weir (BRIS 4)			
Summary description: River Avon flowing through Bristol			
Possible Key Policy Drivers – port related industries, power line crossing, residential developments, flood risk to M4 and M49, industrial assets, mixture of defences with limited coastal flooding, heritage maritime importance, regeneration potential;			
Position of ‘the line’: crest of existing defences			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised – significant flood risk to adjacent Policy Units. Some spring tides can overtop the weir. Will need to cross refer to the CFMP policy area.		
Advance the Line	To be appraised – significant private development and ownership issues		
Managed Realignment	Not appropriate – large area of economic importance		
No Active Intervention	To be appraised – very limited risk from tidal flooding or erosion. Review CFMP		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	River Avon (Right Bank)		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Bristol Avon CFMP Sub Area 10 (Markham Brook and Avonmouth)		Policy Option 4 - Already managing the flood risk effectively, but we may need to take further actions to keep pace with climate change.

Bristol and Severnside - Netham Weir to Avon road (Eastern In Gordando) (BRIS 5)			
Summary description: mixed geology (alluvium and glacial), nature interests Devonian and carboniferous agricultural and residential developments			
Possible Key Policy Drivers –Industrial and residential developments (Bristol and Eastern In Gordando), small marina, recreational open ground, infrastructure, Nature Conservation Sites.			
Position of ‘the line’: crest of existing defences/ embankments and quay walls			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - significant flood risk if defences fail Review CFMP Mixture of defences – hard walls and embankments quay walls		
Advance the Line	Not appropriate		
Managed Realignment	Locally to be appraised - Review CFMP		
No Active Intervention	Locally to be appraised - Review CFMP		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Netham Weir to South of Burgh Walls		Hold the Line
	Burgh Walls to Chapel Pill		Do Nothing
	Chapel Pill to Portbury Pier		Hold the Line
CFMP Policy	CFMP Unit		Policy
	Bristol Avon CFMP Sub Area 10 Markham Brook and Avonmouth)		Policy Option 4 - Already managing the flood risk effectively, but we may need to take further actions to keep pace with climate change.

Bristol and Severnside- Avon road (Eastern In Gordando) to Portishead Pier (BRIS 6)			
Summary description: west bank of docks, dock related industry and infrastructure			
Possible Key Policy Drivers – residential, dock related industry and related infrastructure, electricity substation, Nature Conservation sites			
Position of ‘the line’: crest of existing defences/ embankments and quay walls			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - significant flood risk if defences fail		
Advance the Line	No Benefits		
Managed Realignment	Not appropriate – large area of economic importance		
No Active Intervention	Not appropriate – large area of economic importance		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Chapel Pill to Portbury Pier		Hold the Line

2.16 Portishead and Clevedon Theme Area (PORT)

Portishead and Clevedon - Portishead Pier to swimming pool (PORT 1)			
Summary description: Hard geology, cliff face, wave cut platform, residential and industrial			
Possible Key Policy Drivers – Portbury Docks, Nature Conservation sites, lighthouse, small residential developments (woodlands Road), large number of Heritage features			
Position of ‘the line’: toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised – limited erosion and flood risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	To be appraised – limited erosion and flood risk		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Old Pier to Portishead Point		Do Nothing

Portishead and Clevedon - swimming pool to southern extent of esplanade road (PORT 2)			
Summary description: low lying, rocky shoreline with saltmarsh. Boating lake			
Possible Key Policy Drivers – recreational assets, Nature Conservation sites			
Position of ‘the line’: top of wall			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised current defence, masonry wall – limited erosion and small area of flood risk (1 property at risk)		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	To be appraised to landward side of the lake – need to consider additional flood created (esplanade road needs to be appraised)		
No Active Intervention	To be appraised – limited erosion and small area of flood risk		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Woodhill Bay		Hold the Line

Portishead and Clevedon - southern extent of Esplanade Road to Ladye Point (PORT 3)			
Summary description: hard cliff geology with cliff top developments including residential, agricultural and tourism areas			
Possible Key Policy Drivers – Golf Course, residential, agricultural Nature Conservation sites			
Position of ‘the line’: toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - largely undefended with localised coastal protection defences limited erosion and flood risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	To be appraised – limited erosion and small area of flood risk		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Kilkenny Bay to Redcliff Bay		Do Nothing (locally Retreat the Line)
	Redcliff Bay to Ladye Point		Do Nothing

Portishead and Clevedon - Ladye Point to Old Church Road (PORT 4)			
Summary description: wave cut platform, hard cliff geology with cliff top developments mainly residential, with pockets of recreational and tourism areas			
Possible Key Policy Drivers – residential and other infrastructure including petrol storage depot			
Position of ‘the line’: crest of defence/ toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised - defence mainly along beach road limited erosion and flood risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	To be appraised – need to consider residential and depot at risk		
No Active Intervention	To be appraised - limited erosion and flood risk		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Clevedon		Hold the Line (locally Retreat the Line or Do Nothing)

2.17 Kingston Seymour to Sand Bay Theme Area (KIN)

Kingston Seymour to Sand Bay - Old Church Road to St Thomas' Head (KIN 1)			
Summary description: agricultural and saltmarsh, small residential areas			
Possible Key Policy Drivers – M5, Nature Conservation sites, agricultural and residential. Congresbury Yeo is potential future strategic habitat creation site			
Position of 'the line': crest of embankment/defence			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised Defences – earth embankment and hard defences Flood risk – risk of extensive flooding if defences fail (to Western SM) Will protect agricultural / residential assets		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	To be appraised for Congresbury Yeo (potential habitat creation site)		
No Active Intervention	Not feasible – would result in large scale inundation of large area and residential properties		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Wains Hill to St Thomas's Head		Hold the Line
CFMP Policy	CFMP Unit		Policy
	River Yeo (Congresbury Yeo) L/B Policy Unit 8 Weston-Super-Mere		Policy 5 take further action top reduce flood risk
	River Yeo (Congresbury Yeo) R/B Policy Unit 5 Puxton, Kenn and Tickenham		Policy 3 – take actions to maintain flood risk at current level (accepting that flood risk will increase over time)

Kingston Seymour to Sand Bay - St Thomas' Head to Middle Hope car park (Sand point) (KIN 2)			
Summary description: steep cliffs, hard headland			
Possible Key Policy Drivers – Nature Conservation sites, agricultural and open countryside, scattered dwellings			
Position of 'the line': toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	No process benefits – no defences		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	To be appraised – limited erosion and flood risk, could be island depending on adjacent units Nature Conservation importance of maintaining geological features		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	St Thomas's Head to Sand Point		Do Nothing
	Sand Point to Middle Hope Car Park		Do Nothing

Kingston Seymour to Sand Bay - Middle Hope car park to southern extent of Beach Road (KIN 3)			
Summary description: agricultural (inland) and saltmarsh/ Dunes, small residential and tourist areas (inc caravan parks)			
Possible Key Policy Drivers – Nature Conservation sites, agricultural and residential (beach road) commercial and tourism			
Position of 'the line': fore-dune			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised Defences – managed sand dunes Flood risk – risk of extensive flooding if defences fail (to Western S-M)		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	To be Appraised – limited benefit		
No Active Intervention	Not feasible – would result in large scale inundation of large area and residential properties		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Middle Hope Car Park to South Kewstoke		Hold the Line

Kingston Seymour to Sand Bay - southern extent of Beach Road to Birnbeck Island (KIN 4)			
Summary description: Hard rock headland, mainly undeveloped, small residential areas			
Possible Key Policy Drivers – Nature Conservation sites, roads, Lifeboat station and pier future develop opportunity (Birnbeck Island), residential areas			
Position of ‘the line’: toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	To be appraised – limited erosion and flood risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	To be appraised – limited erosion and flood risk, Nature Conservation importance of maintaining geological features		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	South Kewstoke to Birnbeck Island		Do Nothing (locally Hold the Line)

2.18 The Holms Theme Area (HOL)

The Holms – Flat Holm (HOL 1)			
Summary description: Semi natural open countryside Hard geology			
Possible Key Policy Drivers – Nature Conservation sites, Military installations, listed buildings lighthouse and pier			
Position of ‘the line’: toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – none Limited erosion and flood risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	Shoreline develops naturally, no long term flooding issue		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Flat Holm		Do Nothing

The Holms – Step Holm (HOL 2)			
Summary description: Semi natural open countryside Hard geology			
Possible Key Policy Drivers – Nature Conservation sites, Military installations			
Position of ‘the line’: toe of cliff			
Policy	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Hold the Line	Defences – none Limited erosion and flood risk		
Advance the Line	No benefits, and potential environmental impacts, would result from seaward movement of the line.		
Managed Realignment	No process benefits		
No Active Intervention	Shoreline develops naturally, no long term flooding issue		
Current SMP1 Policy	SMP1 Management Unit		Short Term Policy
	Steep Holm		Do Nothing

3. PART B: POLICY ASSESSMENT AGAINST OBJECTIVES

3.1 Aim

This Part shows how well each of the policy options achieves the objectives for each of the features identified around the shoreline as set out in **Appendix E**. It also determines the **Key Policy Drivers** for each Policy Unit. These have been derived from the initial list produced for each Policy Unit in Part A.

Strategic Environmental Assessment (SEA) related objectives are also included in this exercise to ensure that environmental issues have been taken into account in the decision making process. The full SEA assessment of the SMP2 options is presented in **Appendix I**.

3.2 Approach

The recommended approach in the Defra Guidance (Defra, 2006) for development of a sustainable plan is through the assessment of policy options for linked Policy Units, rather than considering locations in isolation. The aim of this stage has therefore been to assess the appropriateness (spatially and temporally) of policy options for each Policy Unit, so that when units are combined to form Policy Scenarios, the interaction of policy options can be seen.

Link with SEA Objectives

Many of the objectives identified in **Appendix E** overlap with or are the same as objectives identified as part of the Strategic Environmental Assessment (SEA), which considers the impacts of policies on specific 'receptors'. There are seven receptor types against which policies must be assessed when undertaking an SEA:

- Population and Human Health;
- Land Use, Geology and Soils, including Geomorphology and Contaminated Land;
- Biodiversity, Flora and Fauna;
- Historic Environment;
- Water;
- Air and Climate;
- Landscape.

For feature objective, the relevant SEA receptor is shown in brackets below. Some SEA objectives do not overlap with feature objectives and these have been added to the appraisal of other objectives for each Policy Unit. By fully integrating the SEA appraisal into the SMP2 objective appraisal, it is clear to see how environmental issues have been assessed and how this has been taken account of in the decision making process.

The following general objectives, associated with the features in the SMP2 area have been identified:

- Reduce the significance of the impact associated with flooding and erosion to people and property.
(Population and Human Health)
- Reduce the significance of the impact associated with flooding and erosion to key community, recreational and amenity facilities.
(Population and Human Health)
- Reduce the significance of the impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)
(Population and Human Health)
- Reduce the significance of the impact associated with policies on marine operations and activities
(Population and Human Health)
- Reduce the significance of the impact associated with flooding and erosion to critical infrastructure
(Population and Human Health)
- Reduce the significance of the impact associated with flooding and erosion on maintaining the visibility of geological exposures throughout geological SSSIs
(Land Use, Geology and Soils, including Geomorphology and Contaminated Land)
- Reduce the significance of the impact associated with flooding and erosion on maintaining the integrity of internationally designated sites and the favourable condition of their features.
(Biodiversity, Flora and Fauna)
- Reduce the significance of the impact associated with flooding and erosion on managing adverse impacts on nationally or locally designated conservation sites.
(Biodiversity, Flora and Fauna)
- Reduce the significance of the impact associated with flooding and erosion on scheduled and locally, regionally and nationally important cultural historic environment sites and their setting.
(Historic Environment)
- Avoid / minimise environmental impacts that may have long term health impacts (including stress and anxiety associated with flood and erosion risk)
(Population and Human Health)
- Avoid / minimise impacts on water resources
(Water)
- Avoid / minimise impacts to water quality
(Water)
- Policy is designed to adapt to or accommodate climate change trends.
(Air and Climate)
- Avoid / minimise impacts to landscape character.
(Landscape)

Assessment

The significance of potential impacts has been evaluated by taking account of the status and level of importance of receptors and the magnitude of any impacts.

Importance is defined in relation to the scale of the impacts:

- International (at a scale greater than the UK)
- National (England or Wales or UK);
- Regional (Local Authority, groups of Local Authorities, Severn Estuary SMP2 study area);
- Local (Individual towns, villages or parishes or smaller).

Magnitude is determined on the basis of vulnerability, sensitivity, spatial and temporal incidence of any impacts and ability of receptors to recover. In determining the significance of an impact experience and professional judgement has been used to derive an assessment of major/minor positive, major/minor negative or neutral impact (where it has been determined that no change from the current situation will occur). The **Project Management Group (PMG)** has been consulted on the determination of impacts and agreed the assessment.

Each policy option has been appraised against the most appropriate **Key Policy Drivers**, Theme Area High Level Objectives, individual feature objectives in each Policy Unit (see Part A and **Appendix E** for identification of features, issues and objectives) and SEA objective. In most instances, consideration of whether an objective is met is based on the predicted position (e.g. the extent of retreat), form (e.g. existence of a beach) of the estuary shoreline or extent of flood risk from tidal inundation.

The assessment has, therefore, been carried out in three parts:

1. The impact of the policy option on the appropriate **Key Policy Drivers** in the Policy Unit. This considers the economic, environmental and social impacts on the selected Key Policy Drivers.
2. The impact of the policy option on the achievement of the objectives for each feature in the Policy Unit. This does not differentiate between objectives of differing importance and is used to appraise and record of the impacts of predicted shoreline evolution and flooding on local objectives.
3. The impact of the policy option on the achievement of the Strategic Environmental Assessment (SEA) objectives. This part of the assessment ensures that the wider environmental impacts are assessed for each objective.

3.3 Assumptions

In developing the SMP2, a number of assumptions have had to be made about what particular phrases (as defined within the Defra Procedural Guidance - see Section 2.3.2) actually mean in the context of this SMP2. These are set out below with the reasons for decisions made and the consequences of those decisions. It should be re-emphasised that this SMP2 is unique in terms of it being totally included within a European conservation designated area, it represents the only totally estuarine SMP, has flooding (not erosion) as the dominant management risk and straddles two countries. For these reasons, the Guidance has needed to be clarified in places to accommodate this.

An example is linked to the definition of “**With Present Management**” or what was considered to be a **Key Policy Driver** (see **Part A** and **Appendix E** for initial assessment).

Property, Land Use & Human Health

The SMP2 considers the impacts on people, human health and land use over a large area and long time. Key Policy Drivers are those areas containing a large number of people. In this SMP2, a large number of people is defined as being **more than 10,000 in one area**. With this criterion in mind, the following settlement areas are defined as **a Key Policy Driver**:

Table 3.1 - Main SMP2 residential areas

- | | | |
|---------------|----------------------------------|------------------------|
| • Penarth | • Caldicot / Port Skewett | • Bristol |
| • Cardiff | • Lydney / Allaston/
Chepstow | • Portishead |
| • St. Mellons | • Gloucester | • Clevedon |
| • Newport | • Quedgely | • Yatton / Congresbury |

Quedgely and Yatton / Congresbury are only partly within the SMP2 area, but as they contain more than 10,000 people, they are included as **Key Policy Driver** towns to the list presented above.

Critical Infrastructure

Critical infrastructure is the transportation, communication and service features that are vitally important for the region and potentially difficult and costly to relocate. They include motorways, railways, large electricity power stations, major electrical substations and large water treatment works. In some more rural areas where there is only one access road into / out of a location, this is also considered to be critical infrastructure, as there is no alternative route available (critical for emergency access and community well being etc). Critical infrastructure **is therefore a Key Policy Driver**.

Agricultural Land

A large area of the SMP2 is agricultural land. Its importance at a local, regional and national level is recognised (see **Section 4.5**). There is no national policy or guidance on how important agricultural land is in making decisions about managing the risk of coastal flooding and erosion. Based on the lack of such guidance or policy, this SMP2 does **not consider it to be a Key Policy Driver**. It has been valued based on agricultural land valuation only (see **Section 5.6**).

Nature Conservation

There are many designated nature conservation sites in the SMP2 area of local, national and international importance (see **Section 5.4**). The SMP2 considers **international conservation sites are Key Policy Drivers**. This includes SACs, SPAs and Ramsar sites.

National and local conservation sites are not considered to be Key Policy Drivers. This includes SSSIs, NNRs, Key Wildlife Sites (KWS) and LNRs.

Landscape Character & Visual Amenity

Designated and non-designated landscape sites **are not considered to be Key Policy Drivers**.

Historic Environment

The historic environment of the Severn Estuary is important. There is no clear guidance on how the historic environment should be prioritised when considering coastal flooding and erosion (see **Section 4.4**). This SMP2 does **not consider it to be a Key Policy Driver**.

Amenity & Recreation

The **All-Wales Coastal Path** and the intention to create a **coastal path in England are Key Policy Drivers**. This is because national government in England and Wales has a clear policy in place in relation to these features. This shows that national government considers these recreational features to be particularly important in the management of the coast. Other recreational features are **not Key Policy Drivers**.

Water Quality and Resources

The Severn River basin district relies on groundwater and rivers for drinking water. The main responsibility for implementing actions that secure sustainable use and availability of water falls on a number of different sectors, including the water industry, agriculture and consumers.

Flooding and coastal erosion are very important issues, and have a separate planning process alongside the new European Floods Directive. Because defences and control structures impact on ecology, the River Basin Management Plan and all actions proposed need to take account of the need for and the impact of flood and coastal erosion risk management. Catchment Flood Management Plans and Shoreline Management Plans will take into account the objectives of the Water Framework Directive.

3.4 Other Assumptions

Cardiff Bay Barrage

The SMP2 assumes that the Cardiff Bay Barrage remains operational throughout the entire SMP2 period (100 years) and operates as it was designed to. It does not consider risks associated with the failure of the barrage or its infrastructure. These assumptions are consistent with those made in the Taff and Ely Catchment Flood Management Plan (CFMP). This means that even under No Active Intervention (NAI), the Cardiff Bay Barrage prevents coastal flooding along its length during all three SMP2 epochs.

3.5 Water Framework Directive (WFD)

A separate assessment of the compliance of the SMP2 policies with the **Water Framework Directive (WFD)** environmental objectives has been undertaken by the Environment Agency and the results of this assessment can be found in **Appendix J**.





3.6 Post-consultation amendments

It should be noted that the policy options assessed in this part are those undertaken to prepare the draft SMP2 prior to the public consultation in 2009. Following the analysis of the consultation results, policy options may be changed, based on the feedback and comments received during the consultation. The policies presented in the final SMP2 document could, therefore, differ from those assessed in this Appendix. Comments received and amendments made as a result of the public consultation are set out in Appendix B – Stakeholder Involvement.

4. Objectives Appraisal and Policy Scenario Development

Key

Table 3.1 – Key to symbols in the assessment tables






	Major positive impact (of significance to the SMP2 area)
	Minor positive impact (of significance to the SMP2 area)
	Minor negative impact (of significance to the SMP2 area)
	Major negative impact (of significance to the SMP2 area)
N/A	Not applicable on grounds of technical feasibility (e.g. man managed realignment of cliff face)
-	No impact, or change to existing situation
	SEA objective

4.1 Penarth Theme Area (PEN)

The 'With Present Management' policy (set by SMP1) for **PEN1 – Lavernock Point to south of Forest Road** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Lavernock Point to Penarth Esplanade	Do nothing (No Active Intervention)	Do Nothing (No Active Intervention)	Do Nothing (No Active Intervention)

The impact on the agreed objectives of continuing with present management policy at the Lavernock Point to south of Forest Road shoreline can be compared with alternative management policies through the following table:

	Policy Unit - South of Forest Road (PEN1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation sites: Severn Estuary Ramsar, SAC and SPA Avoid significant impact on integrity of internationally designated sites and the favourable condition of their features	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-			-	-		N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				Hold the line will result in coastal squeeze impacting international sites			NAI will allow roll back of habitats and maintain habitats and features, however geology/topography will limit this					
Residential: Lower Penarth developments Reduce significance of impact associated with flooding and erosion to people and property	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				No properties at risk of tidal flooding now or in the future			No properties at risk of tidal flooding now or in the future					
Theme Area High Level Objectives												
Recreational Sites: coastal path, Cosmeston Lakes and Country Park Lavernock Point facilities Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				No assets at risk of tidal flooding now or in the future			No assets at risk of tidal flooding now or in the future					
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	-		-	-		N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				Pier potentially at risk			Increased risk of flooding to pier and impacts on seafront and coastal footpath					

Policy Unit - South of Forest Road (PEN1)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
National nature designations: Severn Estuary and Penarth Coast SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. SSSIs (Biodiversity, Flora and Fauna)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	▲	▲	-	-	●	N/A				
		Hold the line will result in coastal squeeze impacting Severn SSSI			Rate of habitat roll back will be limited due to cliffs							
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	●	●	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered				
		Assuming SoP remains the same or is increased, features will be protected			Limited current or future erosion or flood risk; no impact							
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	▲	▲	-	-	●	N/A High ground / hard geology precludes physical retreat of the line, option not considered				
		Intertidal habitats will be lost to coastal squeeze			Rate of habitat roll back restricted by cliffs							
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered				
		Assuming SoP remains the same or is increased flood risk will not change			No assets at risk of tidal flooding now or in the future							
Water resources are protected (Water)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	N/A	N/A	N/A	N/A	N/A	N/A	N/A High ground / hard geology precludes physical retreat of the line, option not considered				
		No assets at risk			No assets at risk							
No detriment to water quality (Water)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	N/A	N/A	N/A	N/A	N/A	N/A	N/A High ground / hard geology precludes physical retreat of the line, option not considered				
		No water bodies at risk			No water bodies at risk							
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	▲	▲	▲	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered				
		Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			N/A				

	Policy Unit - South of Forest Road (PEN1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Avoid detrimental effects to landscape character (Landscape)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				Limited current or future flood risk so raising of defences unlikely to be required; limited change to current landscape/views			Due to geology existing landscape likely to remain; no major change					

Summary

Penarth Cliff line from Lavernock Point to South Forest Road is included in the Severn Estuary international Ramsar, SAC and SPA designations; it is in the interests of the international community to a adapt shoreline management policy scenario to meet the objectives, or have a positive impact, on these Key Policy Drivers. From Lavernock Point to Forest Road there are no defences currently in place, the coastline is in an entirely natural state which is favourable for the maintenance of the international nature conservation designations. A natural shoreline has positive implications for the governmental objective to adapt our shoreline or to accommodate climate change trends.

Erosion rates calculated for this frontage are not deemed to be significant over the 100 yr SMP2 timescale (~10m per 100 years), al though erosion cliff slumps are evident in the area. Over the 50 to 100 year epoch there remains uncertainty in the rate of cliff erosion and further study in cliff stability and shoreline processes is recommended. As a result, the societal assets at Penarth, including Key Policy Drivers of residential properties and the coastal path, are considered only potentially at risk within the 50 to 100 year epoch.


The 'With Present Management' policy (set by SMP1) for **PEN2 – Forest Road to Penarth Head** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Penarth Esplanade	Hold the Line	Hold the Line	Hold the Line
Penarth Head	Hold the Line	Hold the Line or retreat the line (by cliff control)	Hold the Line or retreat the line (by cliff control)

The impact on the agreed objectives of continuing with present management policy at the Forest Road to Penarth Head shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Forest Road to Penarth Head (PEN2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical Infrastructure: Lifeboat Station Reduce significance of impact associated with flooding and erosion to critical infrastructure.	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			●	●	●	-	-	▲	▲		
				Lifeboat station protected			Lifeboat station potentially affected by coastal squeeze			Realignment could affect lifeboat station		
International Nature Conservation sites Severn Estuary Ramsar, SAC and SPA Avoid significant impact on the integrity of internationally designated sites and the favourable condition of their features	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	▲	▲	-	-	●	●		
				Hold the line will result in coastal squeeze impacting international sites			Natural processes operating; roll back of habitats will occur, but in some places rates will be restricted by hard geology and existing development			Realignment will be restricted in some places by hard geology and existing development		
Residential Properties: Penarth Head Developments including Bradford Place Reduce significance of impact associated with flooding and erosion to people and property	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	-	-	-	-	-	▲		
				No properties at current or future risk of tidal flooding			No properties at current or future risk of tidal flooding			No properties at current or future risk of tidal flooding - retreating the line may affect some properties		
Theme Area High Level Objectives												
Recreational Sites: coastal path; pier Esplanade, Gallery and marine recreation Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			●	●	●	-	▲	▲	▲		
				Assuming SoP maintained or increased, features will be protected			Flood risk will increase and some coastal features will be lost			Some coastal recreational features in their current state will be lost e.g. pier		
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural),	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			●	●	●	-	▲	▲	▲		
				Existing economic assets maintained			Some economic assets will be lost; tourism affected			Some economic assets will be lost; tourism affected		

and activities (including tourism) (Population and Human Health)								
Reduce significance of impact associated with policies on marine operations and activities (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	-
		No known activities			No known activities			No known activities
National nature designations: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites SSSIs (Biodiversity, Flora and Fauna)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	▲	▲	-	-	●	●
		Hold the line will result in coastal squeeze impacting Severn SSSI			Natural processes operating; roll back of habitats will occur, but rates will be restricted by hard geology and existing development			Realignment will be restricted in some places by hard geology and existing development
Scheduled Monument: Penarth Churchyard Cross. Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	▲
		No onshore features at current or future risk of tidal flooding			No onshore features at current or future risk of tidal flooding			Some features along coast may be lost
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	▲	▲	-	-	●	●
		Coastal squeeze leading to loss of intertidal habitats			Roll back of habitats will occur and maintain intertidal habitats, but rates will be restricted by hard geology and existing development			Managed realignment will ensure intertidal habitat maintained
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	▲
		No properties at current or future risk of tidal flooding			No properties at current or future risk of tidal flooding			Realignment may adversely affect properties
Water resources are protected (Water)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	-
		No known resources			No known resources			No known resources
No detriment to water quality (Water)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	-
		No known assets at risk			No known assets at risk			No known assets at risk
Policy is designed to adapt to or accommodate climate	N/A Due to high ground / hard geology ATL is not	▲	▲	▲	-	-	-	●

change trends. (Air and Climate)	technically appropriate, option not considered							
		Can not raise the height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Managed realignment will accommodate climate change				
Avoid detrimental effects to landscape character (Landscape)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	
		Limited current or future flood risk so raising of defences unlikely to be required; limited change to current landscape/views	Due to geology existing landscape is likely to remain	Managed realignment will alter the townscape and views				

Summary

Forest Road at Penarth, to and including Penarth Head includes the shoreline Esplanade of Penarth; a residential area and the tourism and recreational hub of the town. The area of low lying land is at erosion and flood risk (0.1% AEP), to hold the existing line is considered to be beneficial for the societal assets located at the Esplanade.

Erosion rates calculated for this frontage (Penarth Head cliffs) are not deemed to be significant over the 100 yr SMP2 (10m in 100 years) timescale, although erosion cliff slumps are evident in the area. Over the 50 to 100 year epoch there remains uncertainty in the rate of cliff erosion and further study in cliff stability and shoreline processes (in connection with Cardiff Barrage impacts) is recommended here. As a result, the societal assets at Penarth, including Key Policy Drivers of residential properties and the coastal path, are considered only potentially at risk within the 50 to 100 year epoch.

4.2 Cardiff Theme Area (CAR)




The 'With Present Management' policy (set by SMP1) for **CAR1 – Cardiff Bay** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Cardiff Bay shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Cardiff Bay (CAR1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features (Biodiversity, Flora and Fauna)				-								
Impact on internationally protected sites				Coastal squeeze will result in loss of intertidal habitats			Barrage and development will restrict rate of roll back of habitats; coastal squeeze likely to result			Managed realignment will allow intertidal habitat to be maintained – would require the removal of the Barrage (not considered a feasible choice)		
Residential: Cardiff Bay residential developments Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	-			-	-	-	-	-	-	-		
No properties at current or future risk of tidal flooding				No properties at current or future risk of tidal flooding			No properties at current or future risk of tidal flooding			Retreating the line will affect residential properties – would require the removal of the Barrage (not considered a feasible choice)		
Industrial, commercial and economic assets: Cardiff Bay developments Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)				-	-		-	-		-		
Small area of dock at risk of erosion; protected under ATL				Docks and other economic assets protected from risk of erosion			Future risk of erosion			Would require the removal of the Barrage (not considered a feasible choice)		
Critical Infrastructure: Cardiff Bay Barrage, local road and path network within Cardiff Bay Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	-			-	-	-	-	-	-	-		
No infrastructure at current or future tidal flood risk				No infrastructure at current or future tidal flood risk			No infrastructure at current or future tidal flood risk			Infrastructure affected – would require the removal of the Barrage (not considered a feasible choice)		
Theme Area High Level Objectives												

	Policy Unit – Cardiff Bay (CAR1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100
Recreational Sites: Coastal path, Cardiff Bay recreational attractions Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	-	-	-	-	-	-	-	-	▲	-	-	-
	No features at risk now or in future from tidal flooding			No features at risk now or in future from tidal flooding			NAI will affect recreational use of bay in longer term			Retreating defences will affect recreational use of bay – would require the removal of the Barrage (not considered a feasible choice)		
Marine Operations: Access to Cardiff Bay and subsequent docks Reduce significance of impact associated with policies on marine operations and activities (Population and Human Health)	▲	-	-	-	-	-	▲	▲	-	-	-	-
	Access to and operation of Cardiff Bay potentially affected			No change			Sea level rise will affect activities in the Bay			Realignment will affect activities in the Bay – would require the removal of the Barrage (not considered a feasible choice)		
National nature designations: Severn Estuary SSSI Reduce significance of impact associated with maintaining the integrity of nationally and locally designated sites and the favourable condition of their features (Biodiversity, Flora and Fauna)	▲	-	▲	▲	-	▲	▲	-	-	-	-	-
	Advance the line will impact on the protected site			Coastal squeeze will impact on the protected site			Habitat roll back not possible due to presence of bay and barrage – coastal squeeze will result			Development will restrict the amount of habitat roll back – would require the removal of the Barrage (not considered a feasible choice)		
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	-	-	-	-	-	-	-	-	-	-	-	-
	No known assets at risk			No known assets at risk			No known assets at risk			Would require the removal of the Barrage (not considered a feasible choice)		
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	▲	-	▲	▲	-	▲	▲	-	-	-	-	-
	Advance the line will reduce extent of intertidal habitats			Coasts squeeze will reduce extent of intertidal habitat			Development and barrage will restrict ability of habitat to roll back; coastal squeeze will occur			Managed realignment could promote intertidal habitat – would require the removal of the Barrage (not considered a feasible choice)		
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	-	-	-	-	-	-	-	-	-	-	-
	No properties at risk of tidal flooding now or in the future			No properties at risk of tidal flooding now or in the future			No properties at risk of tidal flooding now or in the future			Realignment could adversely affect properties – would require the removal of the Barrage (not considered a feasible choice)		

	Policy Unit – Cardiff Bay (CAR1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100
Water resources are protected (Water)	-	-	-	-	-	-	-	-	-	-	-	-
	No assets at risk of tidal flooding now or in the future			No assets at risk of tidal flooding now or in the future			No assets at risk of tidal flooding now or in the future			Would require the removal of the Barrage (not considered a feasible choice)		
No detriment to water quality (Water)	-	-	-	-	-	-	-	-	-	-	-	-
	No known assets at risk of tidal flooding now or in the future			No known assets at risk of tidal flooding now or in the future			No known assets at risk of tidal flooding now or in the future			Would require the removal of the Barrage (not considered a feasible choice)		
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)		-	-	-	-	-	-	-	-	-	-	
	Can not raise the height of the defences indefinitely.			Can not raise the height of the defences indefinitely; however adequate protection currently provided for 100 yrs.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed realignment will accommodate climate change – would require the removal of the Barrage (not considered a feasible choice)		
Avoid detrimental effects to landscape character (Landscape)	-	-	-	-	-	-	-	-	-	-	-	
	Flood risk minimal so limited raising of defences likely to be required. Limited effect on local landscape-			Flood risk minimal so limited raising of defences likely to be required. Limited effect on local landscape			Due to limited flood risk and presence of barrage existing landscape likely to remain unchanged			Managed realignment will alter the townscape and views – would require the removal of the Barrage (not considered a feasible choice)		

Summary

The Bay is afforded protection from flooding and erosion by the Barrage. Behind the barrage is a significant amount of important economic assets including residential properties, commercial and industrial sites and well as civil infrastructure. For the purpose of this assessment it has been assumed that under NAI, the barrage will remain in place for the duration of the SMP2 timeframe. It will begin to deteriorate in the 50 to 100 year epoch but remain operational for the entire 100 year SMP2 period.

The 'With Present Management' policy (set by SMP1) for **CAR2 – Barrage to River Rhymney, Rover Way** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Cardiff Flats	Hold the Line	Hold the Line	Hold the Line
North of Cardiff Flats to Pengam Moor	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Barrage to River Rhymney, Rover Way shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Barrage to River Rhymney, Rover Way (CAR2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100
Key Policy Drivers												
Recreational Sites: Coastal Path Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities.							-					
	Assets protected from erosion			Assets protected from erosion			Assets at risk from erosion			Assets adversely affected by retreat		
International Nature Conservation sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Coastal squeeze will occur			Coastal squeeze will impact on the protected sites			Habitats will roll back			Realignment will allow intertidal habitats to roll back		
Critical Infrastructure: Docks –Queen Alexandra and Roath and access including railway Reduce significance of impact associated with flooding and erosion to critical infrastructure.												
	Docks will remain protected from flooding and erosion			Docks will remain protected from flooding and erosion			Docks at risk primarily from erosion			Realignment may affect dock operation		
Theme Area High Level Objectives												
Residential: Small scale residential developments Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)							-	-				
	Limited number of properties currently at risk and therefore protected under this option			Limited number of properties currently at risk and therefore protected under this option			Limited number of properties currently at risk of future flooding/erosion under this option			Realignment may adversely affect some properties		

<p>Industrial, commercial and economic assets: Dockland industry Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)</p>								
	<p>Limited number of assets currently at risk and therefore protected under this option</p>	<p>Limited number of assets currently at risk and therefore protected under this option</p>			<p>Limited assets at risk of future flooding/erosion under this option</p>			<p>Realignment may adversely affect local industry operation</p>
<p>Marine Operations: Docks – Queen Alexandra Reduce significance of impact associated with policies on marine operations and activities (Population and Human Health)</p>								
	<p>Advancing the line may affect dock access/operation</p>	<p>Dock operations protected from flood and erosion risk</p>			<p>Dock operations at risk from future flooding and erosion</p>			<p>Realignment may adversely affect dock operation</p>
<p>National nature designations: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>		-						
	<p>Advance the line will result in loss of intertidal habitats</p>	<p>Coastal squeeze will impact on the protected site</p>			<p>Roll back of habitats will occur</p>			<p>Realignment will maintain intertidal habitats</p>
<p>Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)</p>	-	-						
	<p>Terrestrial site protected; marine sites potentially adversely affected</p>	<p>Sites protected</p>			<p>Sites at risk from increased flooding/erosion</p>			<p>Sites potentially affected by retreat term</p>
<p>Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans</p>		-						
	<p>Advance the line will result in loss of intertidal habitats</p>	<p>Coastal squeeze will impact on habitats and species</p>			<p>Roll back of habitats will occur</p>			<p>Realignment will maintain intertidal habitats</p>
<p>Avoid/minimise environmental impacts which may have long term health impacts (including stress and</p>					-	-		

anxiety associated with flood and erosion risk) (Population and Human Health)								
	Limited number of properties currently at risk and therefore protected under this option	Limited number of properties currently at risk and therefore protected under this option			Limited number of properties currently at risk of future flooding/erosion under this option			Realignment may adversely affect some properties
Water resources are protected (Water)	-	-	●	●	-	▲	▲	-
	No resources known to be present	No resources known to be present			No resources known to be present			No resources known to be present
No detriment to water quality (Water)	-	-	-		-	-	-	-
	No assets known to be at risk	No assets known to be at risk			No assets known to be at risk			No assets known to be at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Can not raise the height of the defences indefinitely.	Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed realignment will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	-	-	-	-	-	-	-	-
	Flood risk minimal so limited raising of defences likely to be required. Limited effect on local landscape	Flood risk minimal so limited raising of defences likely to be required. Limited effect on local landscape			Some erosion of the coastline may occur, but landscape unlikely to change significantly without additional human intervention			Managed realignment will alter the current industrial landscape and views. Subjective as to whether this is positive or negative impact

Summary

This unit is largely dominated by large areas of heavy industrial processes and Alexandra Dock located directly behind the shoreline.

The Queen Alexandra and Roath Docks are in close proximity to the CAR2 shoreline and subsequent erosion risk. The integrity of the defence preventing degradation of the docks is at risk in the 2nd epoch (20 to 50 years).

The 'With Present Management' policy (set by SMP1) for **CAR3 – River Rhymney to Lamby Way landfill site drain/sewer outfall** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
River Rhymney	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the River Rhymney to Lamby Way landfill site drain/sewer outfall shoreline can be compared with alternative management policies through the following table:

	Policy Unit – River Rhymney to Lamby Way landfill site drain / sewer outfall (CAR3)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	▲	▲	-	●	●	●		
				Coastal squeeze will impact on the protected sites			Habitats will roll back, however space is limited in some areas due to development			Realignment will allow habitats to roll back		
Residential: Residential developments aside River Rhymney Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	▲	▲	▲	▲		
				Limited number of properties at current or future risk from tidal flooding/erosion			Increase in flood risk to properties; limited number at risk from current/future flooding/erosion			Realignment may affect some properties		
Recreational Sites: Coastal path and local open space (Population and Human Health) Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities.	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	●	●	▲	▲	▲	▲		
				Recreational sites will be protected, although limited flood risk			Recreational sites will be at an increased risk of flooding, although limited vulnerable sites.			Impact will depend on the alignment line: however limited space in reach; so likely to be an adverse impact.		

Critical Infrastructure: Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Limited infrastructure at risk	Limited infrastructure at risk	Retreating the line may adversely affect existing infrastructure				
Theme Area High Level Objectives								
National and local nature designations: Severn Estuary, Penyland Quarry, Rhymney River Section and Rumney Quarry SSSIs, and Howardian LNR Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-			-			
		Coastal squeeze will impact on the protected sites	Roll back of habitats may occur, although space is limited in some locations	Retreating the line will allow roll back of habitats				
Industrial, commercial and economic assets: Commercial development aside River Rhymney Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-						
		Limited assets at risk/protected	Limited assets at risk	Limited assets at risk , realignment could affect assets				
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-						
		Limited assets at risk	Limited assets at risk	Retreating the line may affect existing features				
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-						

		Coastal squeeze will impact on the protected habitats and species			Roll back of habitats may occur, although space is limited			Retreating the line will allow roll back of habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	●	●	▲	▲	▲	▲
		Limited number of properties at risk from tidal flooding			Increase in flood risk to properties; limited number at risk			Realignment may affect some properties
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No known resources at risk.			No known resources at risk.			No known resources at risk.
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	▲
		Current and old landfill sites present; however not at current/future erosion or flood risk			Current and old landfill sites present; however not at current/future erosion or flood risk			Retreating line may put these sites at increased flood risk with implications for water quality.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	●
		Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed realignment will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to	-	-	-	-	-	-	-

	greater flooding. It could also trigger erosion, rather than reduce it						
		Flood risk minimal so limited raising of defences likely to be required. Limited effect on local landscape	Landscape unlikely to change significantly without additional human intervention	Managed realignment will alter the current industrial landscape and views. Subjective as to whether this is positive or negative impact			

Summary

The banks of the River Rhymney where there is tidal influence are characterised by industrial and residential developments. A significant feature of the shoreline with the Policy Unit is the Lamby Landfill Site, the flooding and/or erosion of which will have a negative impact on sites of nature conservation and water quality of the estuary.

4.3 Wentlooge Theme Area (WEN)

The 'With Present Management' policy (set by SMP1) for WEN1 – **Lamby Way Landfill site drain / sewer outfall to Sluice House Farm / Tarwick Rhyne** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Rumney Great Wharf	Hold the line	Hold the Line or retreat the line	Hold the Line or retreat the line

The impact on the agreed objectives of continuing with present management policy at the Lamby Way Landfill site drain / sewer outfall to Sluice House Farm / Tarwick Rhyne shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Lamby Way Landfill site drain / sewer outfall to Sluice House Farm / Tarwick Rhyne (WEN1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	ATL will impact on the protected sites			Coastal squeeze will impact on the protected sites			Habitats will roll back, intertidal habitats maintained.				Intertidal habitats will roll back and be maintained.	
Critical infrastructure: Railway Line Electricity substations, Reduce significance of impact associated with flooding and erosion to critical infrastructure.				-			-					
	Infrastructure protected.			Infrastructure protected.			Infrastructure at an increased risk of flooding.				Impact will depend on alignment line. The assets are at least 800m inland so it is likely they will be protected and not adversely impacted.	
Residential: Outskirts of Cardiff, Newton and Llanrhymney Reduce significance of impact associated with flooding and erosion to people and property							-				-	
	Limited no. of properties in Cardiff at risk from tidal flooding. Residential properties will be protected.			Limited no. of properties in Cardiff at risk from tidal flooding. Residential properties will be protected.			Residential properties will be at an increased risk of flooding.				Impact will depend on the alignment line. It is not expected that properties will be adversely affected.	
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Commercial developments of Newton and Llanrhymney , Agricultural landscape, Reduce significance of impact associated with flooding and erosion to industrial, commercial							-					
	Assets protected			Assets protected			Assets at increased risk of flooding				The impact will depend on the alignment line. It is not expected that the developments will be impacted on but there is likely to be an adverse impact on the agricultural land	

and economic assets (including agricultural), and activities (including tourism)							
Recreational Sites: Coastal path and local open space Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	●	●	●	●	-	▲	▲
	Access route along the coast will be protected.	Access route along the coast will be protected.			Access route along the coast will be at risk from increased flooding.		Impact depends on the realignment of the coast. The current access route is likely to be adversely affected but it could be repositioned.
Heritage Landscape: Scheduled Monuments: Relict Seawall on Rumney Great Wharf Listed Buildings and non-designated sites of historic interest Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting	▲	-	●	●	-	▲	▲
National and local nature designations: Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	●	●	●	●	-	▲	▲
	For Land based sites – Gwent Levels Rumney and Peterstone SSSI						
	The Gwent Levels Rumney and Peterstone SSSI site will be protected	The Gwent Levels Rumney and Peterstone SSSI site will be protected			There will be an adverse impact on the site due to erosion		There will be an adverse impact on the site due to the realignment of the coast
	▲	-	▲	▲	-	●	●
	For marine based sites – Severn Estuary SSSI						
	ATL will impact on the protected site	Coastal squeeze will impact on the protected site			Habitats will roll back, intertidal habitats maintained		Intertidal habitats will roll back and be maintained
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	?	?			?		?
	Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.	Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.			Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.		Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk)	●	●	●	●	-	▲	▲
	Residential properties will be protected.	Residential properties will be protected.			Residential properties will be at an increased risk of flooding.		Residential properties potentially affected.

(Population and Human Health)							
No detriment to water quality (Water) Historic landfill sites	- Historic landfill sites are present in the flood risk zone but are not expected to pose a risk to water quality.	- Historic landfill sites are present in the flood risk zone but are not expected to pose a risk to water quality.	-	-	-	-	▲
Water resources are protected (Water)	- No known impact to water resources.	- No known impact to water resources.	-	-	-	-	-
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲ Can not raise the height of the defences indefinitely.	▲ ▲ ▲ Can not raise the height of the defences indefinitely.	-	-	-	-	●
Avoid detrimental effects to landscape character (Landscape)	▲ Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.	▲ ▲ ▲ Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.	-	-	-	-	-

Summary

The shoreline from Lamby Way Landfill site drain / sewer outfall to Sluice House Farm / Tarwick Rhyne are defended by Rumney Great Wharf earth embankments and rock armouring with a residual life of 20 – 50 years.

Flood risk is extensive with a large portion of the area at risk in the first epoch (0 – 20 years); however, many of the critical assets recognised under the Key Policy Drivers are at risk in the final epoch considered by the SMP2 (50 – 100 years).

The 'With Present Management' policy (set by SMP1) for **WEN2 – Sluice House Farm / Tarwick Rhyne to west bank of River Ebbw at Maesglas railway bridge** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Peterstone Great Wharf	Hold the line	Hold the Line	Hold the Line or retreat the line
Peterstone Gout to East of Outfall Lane	Hold the line	Hold the Line	Hold the Line or retreat the line
East of Outfall Lane to New Gout	Hold the line	Hold the Line	Hold the Line or retreat the line

The impact on the agreed objectives of continuing with present management policy at the Sluice House Farm / Tarwick Rhyne to west bank of River Ebbw at Maesglas railway bridge shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Sluice House Farm / Tarwick Rhyne to west bank of River Ebbw at Maesglas railway bridge (WEN2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical infrastructure: Railway Line, Electricity substations Reduce significance of impact associated with flooding and erosion to critical infrastructure.				-			-					
	Infrastructure protected.			Infrastructure protected.			Infrastructure at an increased risk of flooding.					Impact will depend on alignment line. The assets are at least 2km inland so they will be protected and not adversely impacted.
International Nature Conservation sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	ATL will impact on the protected site			Coastal squeeze will impact on the protected site			Habitats will roll back, intertidal habitats maintained.					Intertidal habitats will roll back and be maintained.
Theme Area High Level Objectives												
Residential: Peterstone, Marshfield, St. Brides and isolated properties. Reduce significance of impact associated with flooding and erosion to people and property							-					
Recreational Sites: Local open space and facilities (Population and Human Health) Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities.							-					-
	Access route along the coast will be protected.			Access route along the coast will be protected.			Access route along the coast will be at risk from increased flooding.					Impact depends on the realignment of the coast. The current access route is likely to be adversely affected but it could be repositioned.

Industrial, commercial and economic assets: Agricultural landscape Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)					-			/	
	Assets protected.	Assets protected.	Assets protected.	Assets protected.	Assets at and increased risk of flooding.			The impact will depend on the alignment line. It is not expected that the developments will be impacted on but there is likely to be an adverse impact on the agricultural land.	
National nature designations: Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)		-			-				
	For Land based sites – Gwent Levels – St. Brides SSSI								
	The Gwent Levels – St Brides SSSI site will be protected	The Gwent Levels – St Brides SSSI site will be protected.				There will be an adverse impact on the site resulting from coastal erosion.			There will be an adverse impact on the site due to the realignment of the coast.
		-							
For marine based sites – Severn Estuary SSSI									
	ATL will impact on the protected site	Coastal squeeze will impact on the protected site			Habitats will roll back, intertidal habitats maintained.			Intertidal habitats will roll back and be maintained.	
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	?	?			?			?	
	Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.	Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.			Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.			Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.	
Heritage Sites: Scheduled Monuments: St. Mary’s Churchyard Cross at Marshfield And Listed Buildings Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting	/	-			-				
	Terrestrial structures will be protected. Gwent Levels Historic Landscape may be adversely affected	Features on landward side of the defences and Historic Landscape Area will be protected. Increased height if defences could have local adverse impact				Structures and Historic Landscape Area will be at an increased risk of flooding.			Structures likely to be protected as located over 2.5km inland; Historic landscape area could be adversely affected. .
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)					-				
	Residential properties will be protected.	Residential properties will be protected.			Residential properties will be at an increased risk of flooding.			Isolated residential properties may be adversely impacted by the realignment. There would be loss of agricultural land in the area.	
Water resources are protected (Water)	-	-	-	-	-	-	-	-	
	No resources known to be present.	No resources known to be present.			No resources known to be present.			No resources known to be present.	

No detriment to water quality (Water) 3 Active landfill sites	●	●	●	●	-	▲	▲	▲
	Landfill sites protected from flooding.	Landfill sites protected from flooding.			Landfill sites are at an increased risk of flooding.			Impact depends on the realignment of the coast. One of the sites is on the coast and another within 500m so it is likely that they would be adversely affected.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Can not raise the height of the defences indefinitely.	Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	-	▲	▲	-	-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change in the landscape due to potential changes in vegetation condition and structure.			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change in the landscape due to potential changes in vegetation condition and structure.

Summary

This unit is dominated by agricultural landscape with a large extent of flooding under the NAI policy. Flood risk is extensive when defences fail in the 3rd epoch (50 to 100 years); many of the critical assets recognised under the Key Policy Drivers are at risk.

4.4 Newport and the River Usk Theme Area (NEW)

The 'With Present Management' policy (set by SMP1) for **NEW1 – East bank of River Ebbw at Maesglas railway bridge to west bank Usk at transporter bridge** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Ebbw River (right bank) to the Transporter Bridge	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the East bank of River Ebbw at Maesglas railway bridge to west bank Usk at transporter bridge shoreline can be compared with alternative management policies through the following table:

Policy Unit – East bank of River Ebbw at Maesglas railway bridge to west bank Usk at transporter bridge (NEW 1)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation sites: River Usk SAC Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-	●	●	-		
				Usk designated for river habitats, otter and migratory fish ; no impact on Usk SAC likely			Usk – roll back of habitats might increase river corridor and improve site for otters			Impact will depend on alignment line: however very limited space in reach: potential to increase habitat for otter.		
Critical infrastructure: Docks Electricity substations Reduce significance of impact associated with flooding and erosion to critical infrastructure.	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	▲		
				Assets protected.			Assets will be at an increased risk of flooding.			Impact will depend on the alignment line: however limited space in reach so assets likely to be affected.		
Theme Area High Level Objectives												
Residential Isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water			●	●	●	▲	▲	▲	▲		

Health)	movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Residential properties protected.	Residential properties at an increased risk of flooding.	Impact will depend on alignment line : however limited space in reach so likely to be an adverse impact.				
Industrial, commercial and economic assets: Dock related and supporting industry and commercial developments Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	▲
		Assets protected.	Assets will be at an increased risk of flooding.	Impact will depend on the alignment line: however limited space in reach assets likely to be affected.				
National Nature conservation: Severn Estuary and River Usk, Gwent Levels St. Brides SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	▲	▲	-
		Coastal squeeze could impact on the Severn SSSI. River Usk and Gwent Levels unaffected	Natural processes will dominate; In theory habitats will roll back and intertidal habitats will be maintained. However reach developed so scope for rollback limited. In addition terrestrial habitats will be affected. Gwent Levels unaffected; Usk potential for habitat enhancement	Severn : Impact will depend on alignment line: possibility to maintain intertidal habitats however very limited space in reach: Gwent Levels potentially affected by realignment Usk potential for habitat enhancement				
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	▲-	-▲	▲-
		Loss of intertidal habitat due to coastal squeeze.	Coastal squeeze likely to occur because reach is developed. Also there is a potential loss of terrestrial habitats.	Impact will depend on alignment line: however very limited space in reach: terrestrial habitats likely to be affected.				
Listed buildings and non-designated sites of historic interest including Transporter Bridge	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn	●	●	●	▲	▲	▲	▲

Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Historical assets protected.			Historical assets at risk of increased flooding.			Impact will depend on the alignment line, however very limited space in the reach so asset may be adversely affected.
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	▲
		Assets will be protected.			Assets will be at an increased risk of flooding.			Some local adverse affects within retreated areas. Assets behind protected. Scope for retreat limited by docks.
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water) Docks Way active landfill site and several historic landfill sites.	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	▲
		Assets protected.			Assets at an increased risk of flooding, with implications for water quality.			Assets all border coast so assets are likely to be impacted by the managed realignment with adverse implications for water quality.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially	-	-	▲	-	-	-	●

	leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Limited erosion and flood risk within the unit both at present and in the future so limited raising of defences likely to be required. Limited effect on local landscape.			V. localised increase in frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.			Retreating the defences will alter the appearance and character of the urban area; the nature and design of any changes will determine whether this is a positive or a negative impact.

Summary

The immediate shoreline East bank of River Ebbw at Maesglas railway bridge to west bank Usk at transporter bridge is occupied by the Newport Docks and associated infrastructure.

Flood risk is limited, but the residual life of the defences in place currently is <20 years, the failure of the defence would have implications for the maintained integrity of the docks and continued operation of associated industry surrounding them.

The 'With Present Management' policy (set by SMP1) for **NEW2 – west bank of Usk at transporter bridge to west bank of Usk at M4 crossing** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Transporter Bridge to the M4 (right bank)	Hold the Line	Hold the Line	Hold the Line or retreat the line

The impact on the agreed objectives of continuing with present management policy at the west bank of Usk at transporter bridge to west bank of Usk at M4 crossing shoreline can be compared with alternative management policies through the following table:

Policy Unit – West bank of Usk at transporter bridge to west bank of Usk at M4 crossing (NEW 2)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites: River Usk SAC Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-					
				Usk SAC designated for river habitat, otter and migratory fish; no impacts likely under HTL			Potential to increase river corridor and enhance the site			Potential to increase river corridor and enhance the site		
Industrial, commercial and economic assets: Dock related industry and commercial developments Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
				Assets will be protected			Assets are at an increased risk of flooding			Impact will depend on the alignment line: however limited space in reach of assets likely to be affected		
Critical infrastructure: Roads – Usk road crossings Electricity substations Railway line Reduce significance of impact associated with flooding and erosion to critical infrastructure.	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
				Assets protected			Assets are at an increased risk of flooding.			Impact will depend on the alignment line: however limited space		

Theme Area High Level Objectives								in reach assets likely to be affected		
Residential: Pilgwenly and Baneswell residential developments and isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	▲		
		Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line : however limited space in reach so likely to be an adverse impact.		
Recreational Sites: Local open space and facilities Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	▲		
		Recreational sites will be protected.			Recreational sites will be at an increased risk of flooding.			Impact will depend on the alignment line: however limited space in reach; so likely to be an adverse impact.		
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	▲		
		Usk designated for river habitats, otter and migratory fish ; no impact likely			Natural processes will dominate, however limited undeveloped space to allow expansion of river corridor			Impact will depend on alignment line: however very limited space in reach: potential to increase habitat for		
National Nature conservation designations: Lower River Usk SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	--		
		Usk designated for river habitats, otter and migratory fish ; no impact likely			Natural processes will dominate, however limited undeveloped space to allow expansion of river corridor			Impact will depend on alignment line: however very limited space in reach: potential to increase habitat for		

								otter.
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	●
		Historical assets protected.			Historical assets at risk of increased flooding.			Impact will depend on the alignment line, however very limited space in the reach so asset may be adversely affected.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	▲	▲	▲	▲-
		Loss of intertidal habitat due to sea level rise/coastal squeeze			Loss of intertidal habitat likely to occur because reach is developed.			Impact will depend on alignment line: however very limited space in reach
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	▲
		Limited assets at risk; assets will be protected.			Assets will be at an increased risk of flooding.			Some local adverse affects within retreated areas. Assets behind protected. Scope for retreat limited by development.
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water) STW Outfalls and	N/A Advance the Line is considered to be an	●	●	●	▲	▲	▲	●

treatment works	unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Limited assets present; asset protected			Assets at an increased risk of flooding, potential for pollution,			Asset protected because it is assumed that managed retreat will not impact on the docks or the sewage outfalls.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	●
		Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	-
		Ever increasing the height of the defence may affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Localised increase in frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.			Retreating the defences will alter the appearance and character of the urban area; the nature and design of any changes will determine whether this is a positive or a negative impact.

Summary

This unit is dominated by residential properties with a limited flood extent under the NAI policy, however, with key societal assets in close proximity to the shoreline, the implications of flooding are substantial, with residential, commercial properties and associated infrastructure at risk.

The 'With Present Management' policy (set by SMP1) for **NEW3 – River Usk (both banks) at M4 crossing to Newbridge on Usk** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
The M4 to Caerleon (both banks)	Hold the Line	Hold the Line	Hold the Line or retreat the line

The impact on the agreed objectives of continuing with present management policy at the River Usk (both banks) at M4 crossing to Newbridge on Usk shoreline can be compared with alternative management policies through the following table:

	Policy Unit River Usk (both Banks) at M4 crossing to Newbridge on Usk (NEW 3)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites: Usk SAC Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-	●	●	●		
				Usk SAC designated for river habitat, otter and migratory fish; no impacts likely under HTL			Potential to increase river corridor and enhance the site			Potential to increase river corridor and enhance the site		
Theme Area High Level Objectives												
Residential: Caerleon, Llanhennock, Newbridge on Usk and isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-	-	-	-	-	-
				Residential properties are not at risk of tidal flooding.			Residential properties are not at risk of tidal flooding.			Impact will depend on alignment line however adequate space to select alignment so unlikely to be an adverse impact.		
Historic Environment Scheduled Monuments, Listed Buildings and non-designated sites of historic interest including concentration at Caerleon Reduce	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather			-	-	-	-	-	-	-	-	-

significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting	than reduce it							
		Historic assets protected from tidal flooding.			Historic assets potentially at risk from tidal flooding.			Impact will depend on alignment line however adequate space to select alignment so unlikely to be an adverse impact.
Recreational sites: Local facilities and open space Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Recreational assets not at risk of tidal flooding.			Recreational assets not at risk of tidal flooding.			Impact will depend on alignment line however adequate space to select alignment so unlikely to be an adverse impact.
Industrial, commercial and economic assets: Agriculture and local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲-	▲
		Agricultural land protected from tidal flooding.			Agricultural land at risk of tidal flooding.			Impact will depend on alignment line. Potential loss of agricultural land
Local Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Assets not at risk of tidal flooding.			Assets not at risk of tidal flooding.			Impact will depend on alignment line however adequate space to select alignment so unlikely to be an adverse impact.
National nature conservation:	N/A Advance the Line is	-	-	-	-	-	-	-

<p>Lower River Usk SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>	<p>considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it</p>							
		<p>Usk designated for river habitats, otter and migratory fish ; no impact likely</p>			<p>Natural processes will dominate, however limited undeveloped space to allow expansion of river corridor</p>			<p>Impact will depend on alignment line: however very limited space in reach: potential to increase habitat for otter.</p>
<p>Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)</p>	<p>N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it</p>	?	?	?	?	?	?	
		<p>Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.</p>			<p>Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.</p>			<p>Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.</p>
<p>Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)</p>	<p>N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it</p>	-	-	-	-	-	-	
		<p>Limited properties at risk from tidal flooding.</p>			<p>Limited properties at risk from tidal flooding.</p>			<p>Impact will depend on alignment line; effects unlikely.</p>
<p>Water resources are protected (Water)</p>	<p>N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it</p>	-	-	-	-	-	-	
		<p>No resources known to be at risk.</p>			<p>No resources known to be at risk.</p>			<p>No resources known to be at risk.</p>
<p>No detriment to water quality (Water)</p>	<p>N/A Advance the Line is considered to be an</p>	●	●	●	-	▲	▲	

<p>Ponthir STW, active and historic landfill sites</p>	<p>unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it</p>							
		<p>STW and other features protected</p>			<p>Asset at increased risk from tidal flooding.</p>			<p>Impact will depend on alignment line however adequate space to select alignment so unlikely to be an adverse impact on STW.</p>
<p>Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)</p>	<p>N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it</p>	<p>▲</p>	<p>▲</p>	<p>▲</p>	<p>-</p>	<p>-</p>	<p>-</p>	<p>●</p>
		<p>Can not raise the height of the defences indefinitely.</p>			<p>Natural evolution of the coast will accommodate climate change: possible impact to people and property.</p>			<p>Managed retreat will accommodate climate change.</p>
<p>Avoid detrimental effects to landscape character (Landscape)</p>	<p>N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it</p>	<p>▲</p>	<p>▲</p>	<p>▲</p>	<p>-</p>	<p>-</p>	<p>-</p>	<p>-</p>
		<p>Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.</p>			<p>Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.</p>			<p>Retreating the defences will alter the appearance and character of the urban area; the nature and design of any changes will determine whether this is a positive or a negative impact.</p>

Summary

The shoreline of the River Usk (both banks) at M4 crossing to Newbridge on Usk is primarily used as agricultural land with associated small residential developments and the larger developments of Caerleon, Llanhennock and Newbridge on Usk. Caerleon is recognised by numerous national designations for the historic environment preserved there, many of the recognised sites are on high ground and not at flood risk.

The River Wye is recognised as an SAC, an international nature conservation designation.

The 'With Present Management' policy (set by SMP1) for **NEW4 – east bank of Usk at M4 crossing to Spytty Pill, north of A48 crossing** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
M4 to Spytty Pill (left bank)	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the east bank of Usk at M4 crossing to Spytty Pill, north of A48 crossing shoreline can be compared with alternative management policies through the following table:

Policy Unit – East Bank of Usk at M4 crossing to Spytty Pill, North of A48 crossing (NEW 4)													
		Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
		0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers													
Critical infrastructure: Usk crossings including M4, Railway Electricity substations Gwent Police station Reduce significance of impact associated with flooding and erosion to critical infrastructure.		N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
					Infrastructure protected.			Assets are at an increased risk of flooding.			Impact will depend on the alignment line; however limited space in reach so assets likely to be affected		
International Nature Conservation Sites: Usk SAC Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features		N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-					
					Usk SAC designated for river habitat, otter and migratory fish; no impacts likely under HTL			Potential to increase river corridor and enhance the site			Potential to increase river corridor and enhance the site		
Theme Area High Level Objectives													
Residential: St. Julian's, Barnardtown and Somerton Reduce significance of impact associated with flooding and erosion to people and property		N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
					Residential properties protected.			Residential properties at risk from flooding.			Impact will depend on alignment line; however very limited space in the southern section of the reach so properties likely		

							to be impacted.	
Recreational Sites: Local facilities and open space Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Local recreational sites will be protected.			Recreational sites will be at an increased risk of flooding.			Impact will depend on the alignment line. Space in the reach is limited so there is likely to be an adverse impact.
Industrial, commercial and economic assets: Local commercial developments and industry Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Assets will be protected.			Assets will be at an increased risk of flooding.			Impact will depend on the alignment line. Space in the reach is limited so there is likely to be an adverse impact.
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
National nature conservation: Lower Usk SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	
		Usk designated for river habitats, otter and migratory fish ; no impact likely			Natural processes will dominate, however limited undeveloped space to allow expansion of river corridor			Impact will depend on alignment line: however very limited space in reach: potential to increase habitat for otter.
Listed Buildings and non-designated sites of historic interest Reduce significance of impact to scheduled and	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn							

locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Historical assets protected.			Historical assets at risk of increased flooding.			Impact will depend on the alignment line, however very limited space in the reach so asset may be adversely affected.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	?	?	?	?	?	?	?
		Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.			Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.			Unclear how the mix of terrestrial and marine habitats and species will be affected – possible negative, neutral or positive outcomes. More detailed assessment at lower level required.
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	▲
		Assets protected.			Assets at an increased risk of flooding.			Impact will depend on alignment line however very limited space in reach: assets likely to be affected.
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water) Sewage treatment outfall Historic landfill site	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather	●	●	●	▲	▲	▲	●

	than reduce it							
		Assets protected.			Assets at an increased risk of flooding, potential for pollution,			Asset protected because it is assumed that managed retreat will not impact on the sewage outfall or historic landfill site.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	●
		Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	-
		Increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.			Retreating the defences will alter the appearance and character of the urban area; the nature and design of any changes will determine whether this is a positive or a negative impact.

Summary

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The 'With Present Management' policy (set by SMP1) for **NEW5 – Spytty Pill, north of A48 crossing to Uskmouth Power station** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Spytty Pill to Uskmouth Power Station (left bank)	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Spytty Pill, north of A48 crossing to Uskmouth Power station point shoreline can be compared with alternative management policies through the following table:

Policy Unit – Spytty Pill, north of Uskmouth Power station point (NEW 5)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA, Usk SAC Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	▲	▲	-	-	-	-		
				Severn N3K site outside policy unit – possible impacts resulting from HTL in this unit Usk SAC – some loss of intertidal habitats as a result of sea level rise however this is considered unlikely to affect the SAC			In theory habitats will roll back Intertidal habitats of Severn will be maintained and possible benefits for Usk SAC. However reach developed so scope for rollback limited. .			Impact will depend on alignment line: however very limited space in reach likely to be affected.		
Industrial, commercial and economic assets: Industrial developments Usk power station Surrounding industry Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	●	●	-	▲	▲	▲		
				Industrial assets will be protected.			Industrial assets will be at an increased risk of flooding.			Impact will depend on alignment line: space in the reach is limited therefore there may be an adverse impact.		
Critical infrastructure: Uskmouth Power Station and associated infrastructure Electricity substations Nash STW Reduce significance of impact associated with flooding and erosion to critical infrastructure.	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	●	●	-	▲	▲	▲		

		Assets protected.			Assets at an increased risk of flooding.			Impact will depend on alignment line: space in the reach is limited therefore there may be an adverse impact.
Theme Area High Level Objectives								
Residential: Isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-			
		Residential properties protected.			Residential properties are at an increased risk from flooding.			Impact will depend on alignment line: space in the reach is limited therefore there may be an adverse impact.
Recreational site: Local facilities and open space Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-			
		Recreational sites will be protected.			Recreational sites will be at an increased risk from flooding.			Impact will depend on alignment line: space in the reach is limited therefore there may be an adverse impact.
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-		-	-		
National nature conservation: Lower Usk SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-			-			
		Coastal squeeze will occur.			In theory habitats will roll back and intertidal habitats will be maintained. However reach developed so scope for rollback limited. In addition terrestrial habitats will be			Impact will depend on alignment line: however very limited space in reach: terrestrial habitats likely to be affected.

					affected.		
Listed Buildings and non-designated sites of historic interest including Transporter Bridge Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it						
		Historical assets protected.			Historical assets at risk of increased flooding.		Impact will depend on the alignment line, however very limited space in the reach so asset may be adversely affected.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it						
		Loss of intertidal habitat due to coastal squeeze.			Coastal squeeze likely to occur because reach is developed. Also there is a potential loss of terrestrial habitats.		Impact will depend on alignment line: however very limited space in reach: terrestrial habitats likely to be affected.
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-			-		
		Residential properties are protected.			Residential properties are at risk from flooding.		Impact will depend on the alignment line; however very limited space in reach, so likely to be an adverse impact.
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-
		No resources known to be at risk.			No resources known to be at risk.		No resources known to be at risk.
No detriment to water quality (Water) Nash STW 3 active landfill sites.	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage	-			-		

	and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		STW and landfill sites protected.			STW and landfill sites at an increased risk of flooding, with increased risk of pollution.			Impact will depend on the alignment line; however very limited space in reach, so may be an adverse impact because of proximity of sites.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	●
		Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	-
		Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.			Retreating the defences will alter the appearance and character of the urban area; the nature and design of any changes will determine whether this is a positive or a negative impact.

Summary

Uskmouth Power Station is a Key Policy Driver within the Policy Unit. The base of the Transport Bridge is also located within the Unit, its heritage and landscape value within the city of Newport mean to preserve it from flooding and erosion would be positive.

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

4.5 Caldicot Levels Theme Area (CALD)

The 'With Present Management' policy (set by SMP1) for **CALD1 – Uskmouth Power Station point to Sudbrook Point, north of M4 Severn Crossing** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Uskmouth Power Station to Saltmarsh Farm	Hold the Line (locally retreat)	Hold the Line	Hold the Line or retreat the line
Saltmarsh Farm to Gold Cliff	Hold the Line	Hold the Line (or locally retreat the line)	Hold the Line or retreat the line
Gold Cliff to Cold Harbour Pill	Hold the Line	Hold the Line	Hold the Line or retreat the line
Cold Harbour Pill to West Pill	Hold the Line	Hold the Line	Hold the Line or retreat the line
West Pill to West of Sudbrook Point	Hold the Line	Hold the Line	Hold the Line or retreat the line

The impact on the agreed objectives of continuing with present management policy at the Uskmouth Power Station point to Sudbrook Point, north of M4 Severn Crossing shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Uskmouth Power Station point to Sudbrook Point, north of M4 Severn Crossing (CALD 1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100
Key Policy Drivers												
Industrial, commercial and economic assets: Lanwern Steelworks Reduce significance of impact associated with flooding and erosion to critical infrastructure. Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets and activities				-			-					
	Assets will be protected.			Assets will be protected.			Assets will be at an increased risk of flooding.					Impact will depend on alignment line: space in the reach is not very limited due to land being used for agriculture. There may be an adverse impact.
International Nature Conservation sites Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Coastal squeeze will occur.			Coastal squeeze will occur.			Habitats will roll back, intertidal habitats maintained; however potentially some loss of terrestrial habitats.					Habitats will roll back, intertidal habitats maintained; however potentially some loss of terrestrial habitats.
Residential: Caldicot				-			-					

Reduce significance of impact associated with flooding and erosion to people and property								
	Residential properties protected.	Residential properties protected.			Residential properties at an increased risk from flooding.		Impact will depend on alignment line: however adequate space to select alignment so larger residential settlements are likely to be protected. Isolated properties may be adversely impacted.	
Critical infrastructure: Railway, Electricity transmission network, Sewerage network and M4 Gwent constabulary emergency response centres Reduce significance of impact associated with flooding and erosion to critical infrastructure.		-			-			
	Infrastructure protected.	Infrastructure protected.			Infrastructure at an increased risk of flooding.		Impact will depend on alignment line: however there is adequate space so critical infrastructure is likely to be protected as it is all located at a distance from the coast (with the exception of two electricity substations at Magnor Pill).	
Theme Area High Level Objectives								
Heritage Landscape Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Gwent levels historic landscape 13 SAMS including a cluster around Magnor and Undy Listed buildings in several villages across the area. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting					-			
	Historic landscape and assets protected.	Historic landscape and assets protected. Potentially some local adverse effects from increased height of defences			Historic landscape and assets at an increased risk of flooding.		Impact will depend on the alignment line: not very limited so there may be an adverse impact on the historic landscape.	
Residential: Magor, Undy and Isolated residential properties Reduce significance of impact associated with flooding and erosion to people and		-	-		-	-		

property								
Recreational sites: Local facilities, open space and footpath network Coastal footpath and network of footpaths across Caldicot levels Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	●	●	●	●	-	▲	▲	▲
	Recreational sites including the coastal footpath will be protected.	Recreational sites including the coastal footpath will be protected.	Recreational sites including the coastal footpath will be at an increased risk of flooding.		Impact will depend on alignment line: however adequate space to select alignment so coastal footpath is likely to be adversely impacted.			
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	●	●	●	●	-	▲	▲	▲
	Agriculture is primary land use; land protected	Agricultural land protected	Agricultural land at risk of flooding and erosion		Impact will depend on alignment line; some land likely to be affected.			
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	●	-	-	●	-	-	▲	-
Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	●	●	●	●	-	▲	▲	▲
	For Land based sites – Gwent Levels – Nash and Goldcliff, Whitson, Redwick and Llandevenny and Magor and Undy SSSIs							
	Sites will be protected from coastal flooding.	Sites will be protected from coastal flooding.	Sites will be at an increased risk from coastal flooding.		Impact will depend on alignment line: however adequate space to select alignment so likely to be an adverse impact on Gwent levels SSSIs.			
	▲	-	▲	▲	-	●	●	●
For Marine based sites – Severn Estuary SSSI								
Coastal squeeze will occur	Coastal squeeze will occur.	Habitats will roll back, intertidal habitats maintained;.		Habitats will roll back, intertidal habitats maintained;				
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	● ▲	-	▲	▲	-	● ▲	● ▲	● ▲
	Coastal squeeze	Coastal squeeze will	Loss of terrestrial habitat on the Caldicot levels;		Loss of terrestrial			

	will occur/terrestrial habitat will be gained.	occur.	intertidal habitats maintained.	habitats on the Caldicot levels.
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	●	- ● ●	- ▲ ▲	▲
	Residential properties protected.	Residential properties protected.	Residential properties at an increased risk from flooding.	Impact will depend on alignment line: however adequate space to select alignment so larger residential settlements are likely to be protected. Isolated properties may be adversely impacted.
Water resources are protected (Water)	●	● ● ●	▲ ▲	▲
	Usk Devonian Old Red Sandstone SPZ. No impact	Usk Devonian Old Red Sandstone SPZ. No impact	SPZ is at increased risk of salinisation	SPZ is at increased risk of salinisation.
No detriment to water quality (Water)	●	● ● ●	- ▲ ▲	▲
Source protection zone Uskmouth power station historic landfill site		Assets protected.	Assets at an increased risk of flooding.	SPZ is at increased risk of saline intrusion.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲ ▲ ▲	- - -	●
	Can not raise the height of the defences indefinitely.	Can not raise the height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲ ▲ ▲	- - -	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.	Retreating the defences will alter the appearance and character of the urban area; the nature and design of any changes will determine whether this is a positive or a negative impact.

Summary






This unit is dominated by agricultural landscape and the Llanwern Steelworks with a large extent of flooding under the NAI policy.











The 0 to 20 year flood cell from the shoreline at CALD1 includes sections of source protection zone 3. Saline intrusion from flooding may alter chemical status of groundwater.

The 'With Present Management' policy (set by SMP1) for **CALD2 – Sudbrook Point, north of M4 Severn Crossing to Black Rock at Black Rock Road** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Sudbrook Point to Black Rock	Do nothing (locally hold)	Do Nothing, locally Hold the Line or Retreat the Line	Do Nothing, locally Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Sudbrook Point, north of M4 Severn Crossing to Black Rock at Black Rock Road shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Sudbrook Point, north of M4 Severn Crossing to Black Rock at Black Rock Road (CALD 2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical infrastructure: Electricity transmission network Reduce significance of impact associated with flooding and erosion to critical infrastructure	-			-	-	-	-	-	-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Critical infrastructure not at risk from flooding.			Critical infrastructure not at risk from flooding.			Critical infrastructure not at risk from flooding.					
International Nature Conservation sites Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Coastal squeeze will occur.			Coastal squeeze will occur.			In theory habitats will roll back and intertidal habitats will be maintained. However reach is a high ground and hard geology so scope for roll back limited.					
Residential: Portskewett Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	-			-	-	-	-	-	-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Residential properties are not at risk.			Residential properties are not at risk.			Residential properties are not at risk.					
Theme Area High Level Objectives												
Heritage Landscape Scheduled Monuments, Listed Buildings and non-designated sites of historic interest Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting	-			-	-	-	-	-	-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	No historical assets at risk,			No historical assets at risk,			No historical assets at risk,					
Residential: Isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property	-			-	-	-	-	-	-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Residential properties are not at risk.			Residential properties are not at risk.			Residential properties are not at risk.					

(Population and Human Health)								
Recreational Sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered	
	Recreational sites including the coastal footpath are not at risk.	Recreational sites including the coastal footpath are not at risk.	Recreational sites including the coastal footpath are not at risk.	Recreational sites including the coastal footpath are not at risk.	Recreational sites including the coastal footpath are not at risk.	Recreational sites including the coastal footpath are not at risk.		
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered	
	Assets not at risk.	Assets not at risk.	Assets not at risk.	Assets not at risk.	Assets not at risk.	Assets not at risk.		
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered	
	No assets at risk	No assets at risk	No assets at risk	No assets at risk	No assets at risk	No assets at risk		
Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)		-			-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Coastal squeeze will occur	Coastal squeeze will occur.	Coastal squeeze will occur.	Coastal squeeze will occur.	In theory habitats will roll back and intertidal habitats will be maintained. However reach is a high ground and hard geology so scope for roll back limited.	In theory habitats will roll back and intertidal habitats will be maintained. However reach is a high ground and hard geology so scope for roll back limited.		
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)		-			-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Coastal squeeze will occur.	Coastal squeeze will occur.	Coastal squeeze will occur.	Coastal squeeze will occur.	In theory coastal habitats will roll back and intertidal habitats will be maintained. However reach is a high ground and hard geology so scope for roll back limited.	In theory coastal habitats will roll back and intertidal habitats will be maintained. However reach is a high ground and hard geology so scope for roll back limited.		
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered	
	Recreational sites including the coastal	Recreational sites including the coastal	Recreational sites including the coastal	Recreational sites including the coastal	Recreational sites including the coastal	Recreational sites including the coastal		

	footpath are not at risk.	footpath are not at risk.	footpath are not at risk.				
Water resources are protected (Water)	-	-	-	-	▲	-	▲
	Usk Devonian Old Red Sandstone SPZ. No impact	Usk Devonian Old Red Sandstone SPZ. No impact		SPZ at increased risk of saline intrusion			
No detriment to water quality (Water)	-	-	-	-	▲		▲
	Usk Devonian Old Red Sandstone SPZ. No impact	Usk Devonian Old Red Sandstone SPZ. No impact		SPZ at increased risk of saline intrusion			
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-
	Can not raise the height of the defences indefinitely.	Can not raise the height of the defences indefinitely.		Natural evolution of the coast will accommodate climate change: possible impact to people and property.			
Avoid detrimental effects to landscape character (Landscape)	▲	-o	-	-	-	-	-
	Increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Limited flood and erosion risk in this unit so significant increase in height of defences not required; limited impact.		Unit not at significant flood/erosion risk; landscape unlikely to change			
							N/A High ground / hard geology precludes physical retreat of the line, option not considered
							N/A High ground / hard geology precludes physical retreat of the line, option not considered
							N/A High ground / hard geology precludes physical retreat of the line, option not considered
							N/A High ground / hard geology precludes physical retreat of the line, option not considered

Summary

The majority of this area is high ground and is not impacted by flood or erosion risk; as a result the policies appraised do not significantly impact on the objectives or Key Policy Drivers.

The 'With Present Management' policy (set by SMP1) for **CALD3 – Black Rock at Black Rock Road to west bank of River Wye at Park Redding, Thornwell** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Sudbrook Point to Black Rock	Hold the Line / Do nothing	Hold the Line or Retreat the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Black Rock at Black Rock Road to west bank of River Wye at Park Redding, Thornwell shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Caldicot – Black Rock at Black Rock Road to west bank of River Wye at Park Redding, Thornwell (CALD 3)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment			
	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100	
Key Policy Drivers													
Critical infrastructure: Electricity transmission network, M48, Railway line Reduce significance of impact associated with flooding and erosion to critical infrastructure.							-	-		-			
	Infrastructure protected.			Infrastructure protected.			Infrastructure at risk from flooding.			Impact will depend on alignment line: however adequate space to select alignment so unlikely to be an adverse impact.			
International Nature Conservation sites Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-						
	Coastal squeeze will occur.			Coastal squeeze will occur.			Habitats will roll back, intertidal habitats maintained: however potentially some loss of terrestrial habitats.			Intertidal habitats maintained: however potentially some loss of terrestrial habitats.			
Theme Area High Level Objectives													
Heritage Landscape Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting													
	Historic structures protected from flooding; Historic Landscape potentially affected.			Historic structures protected from tidal flooding; Historic Landscape protected			Historic structures potentially at risk from tidal flooding; Historic Landscape potentially affected			Historic Landscape potentially affected.			
Residential: Thornwell, Mathern and isolated properties Reduce significance of impact associated with flooding and erosion to people and property				-			-			-			
	Residential properties protected.			Residential properties protected.			Residential properties are at risk from flooding.			Impact will depend on alignment line: however adequate space to select alignment, so unlikely to be adverse impact.			

Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)		-			-			
	Recreational sites protected.	Recreational sites protected.			Recreational sites are at an increased risk of flooding.			Impact will depend on alignment line. Footpath network may be adversely impacted.
Industrial, commercial and economic assets: Local commercial assets Agricultural land Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)		-			-			
	Land use predominantly agricultural. Agricultural assets will be protected.	Land use predominantly agricultural. Agricultural assets will be protected.			Agricultural assets will be at an increased risk of flooding.			Impact will depend on alignment line: however adequate space to select alignment, but agricultural land may be adversely impacted.
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	-	-	-		-	-		
	Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	-	-	-	-	-	-	-
	For Land based sites – Bushy Close SSSI, River Wye (Lower Wye) SSSI							
	Sites not at risk of tidal flooding via this unit.	Sites not at risk of tidal flooding via this unit.			Sites unaffected by increased flood risk .			Impact will depend on alignment line: however adequate space to select alignment so unlikely to be an adverse impact on the SSSIs.
		-			-			
	For Marine based sites – Severn Estuary SSSI							
	Coastal squeeze will occur.	Coastal squeeze will occur.			Habitats will roll back, intertidal habitats maintained; however potentially some loss of terrestrial habitats.			Habitats will roll back, intertidal habitats maintained; however potentially some loss of terrestrial habitats.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)		-			-			
	Coastal squeeze will occur, loss of intertidal habitats	Coastal squeeze will occur, loss of intertidal habitats .			Loss of terrestrial habitats on the Caldicot levels; intertidal habitats maintained.			Loss of terrestrial habitats on the Caldicot levels; intertidal habitats maintained. .
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)		-			-			-
	Residential properties protected.	Residential properties protected.			Residential properties are at risk from flooding.			Impact will depend on alignment line: however adequate space to select alignment, so unlikely to be adverse impact.
Water resources are protected (Water)	-	-	-	-	-	-	-	-

	No resources known to be at risk.	No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water)	-	-	-	-	-	-	-	-
	No risk to water quality.	No risk to water quality.			No risk to water quality.			No risk to water quality.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Can not raise the height of the defences indefinitely.	Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			
Avoid detrimental effects to landscape character (Landscape)	▲	-▲	-▲	▲	-	-	-	
	Increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.			Retreating the defences will alter the appearance and character of the urban area; the nature and design of any changes will determine whether this is a positive or a negative impact.

Summary

The 0 to 20 year flood cell from the shoreline at CALD3 includes sections of source protection zone 3. Saline intrusion from flooding may alter chemical status of groundwater

The majority of this area is high ground and is not impacted by flood or erosion risk; as a result the policies appraised do not significantly impact on the objectives or Key Policy Drivers.

4.6 Chepstow and the River Wye Theme Area (WYE)

The 'With Present Management' policy (set by SMP1) for **WYE1 – west bank Wye at Park Redding, Thornwell to west bank River Wye at Alcove Wood, Chepstow** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Chepstow from Thornwell to Alcove Wood	Do nothing (locally hold)	Do Nothing, locally Hold the Line	Do Nothing, locally Hold the Line

The impact on the agreed objectives of continuing with present management policy at the west bank Wye at Park Redding, Thornwell to west bank River Wye at Alcove Wood, Chepstow, shoreline can be compared with alternative management policies through the following table:

		Wye – West bank Wye at Park Redding, Thornwell to west bank River Wye at Alcove Wood, Chepstow (WYE 1)											
		Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
		0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers													
Residential: Chepstow and Bulwark Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-	-	-	▲		
		Residential properties not at risk, from current or future flood or erosion.			Residential properties not at risk from current or future flood or erosion risk.			Impact will depend on alignment line: space in the reach is limited so there is likely to be an adverse impact on some properties.					
Critical infrastructure: Railway, A48 crossing Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-	-	-	-		
		Critical infrastructure is not at risk from flooding.			Critical infrastructure is not at risk from flooding.			Impact will depend on alignment line: however critical infrastructure is not expected to be impacted.					
International Nature Conservation sites: River Wye SAC Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-	-	-	●		
		Features of River Wye SAC not impacted by tidal flooding; site designated			Features of River Wye SAC not impacted by tidal flooding; natural processes			Realignment may offer opportunities to enhance the site					

		for river habitats, otter and migratory fish species no impact to habitats or species for which the site is designated.	will operate; no impact to habitats or species for which the site is designated..					
Theme Area High Level Objectives								
Recreational sites: Local facilities and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	▲
		Recreational sites not impacted by current or future tidal flooding and erosion.	Recreational sites not impacted by current or future tidal flooding and erosion.	Impact will depend on alignment line. There is limited space for realignment so there may be adverse impacts.				
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	▲
		Assets not impacted by current or future tidal flooding and erosion..	Assets not impacted by current or future tidal flooding and erosion.	Impact will depend on alignment line. There is limited space for realignment so there may be adverse impacts.				
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	-	-	▲	▲
National nature conservation: Lower Wye SSSI Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	●
		Site designated for river habitat, otter and migratory fish species. Lower Wye SSSI is not impacted by HTL policy.	Natural processes will operate; NAI unlikely to affect site	Impact will depend on the alignment line. May offer opportunities for enhancement				
Scheduled Monuments, Listed Buildings and non-	N/A Advance the Line is	-	-	-	-	-	-	-

designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Historical assets are not at current or future risk from tidal flooding/erosion.	Historical assets are not at current or future risk from tidal flooding/erosion.	Impact will depend on alignment line. There is limited space for realignment so there may be adverse impacts on St Peters Cave or Bulwarks camp SAMs or listed building in the Chepstow area.				
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	▲
		Habitats not at current or future risk from tidal flooding/erosion	Habitats not at current or future risk from tidal flooding/erosion	Impact will depend on the alignment line. If river channel is widened this is likely to have an adverse impact on the terrestrial or riverine habitats of the area.				
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	▲
		Residential properties not at risk.	Residential properties not at risk.	Impact will depend on alignment line: space in the reach is limited so there is likely to be an adverse impact.				
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Water resources are not at risk.	Water resources are not at risk.	Water resources are not at risk.				
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn	-	-	-	-	-	-	-

	Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Water quality is not at risk.			Water quality is not at risk.			Water quality is not at risk.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	●
		Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	
	.	Limited current or future flood/erosion risk means there is no requirement to increase the height of defences			Limited current or future flood/erosion risk means Landscape is unlikely to change			Retreating the defences will alter the appearance and character of the urban area; the nature and design of any changes will determine whether this is a positive or a negative impact.

Summary

The West bank Wye at Park Redding, Thornwell to west bank River Wye at Alcove Wood, Chepstow includes a high density of residential property and associated assets of commercial property and recreation. The defences protecting the present assets from the minimal flood risk are in good condition with a residual life of 20 – 50 years.

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The 'With Present Management' policy (set by SMP1) for **WYE2 – west bank River Wye at Alcove Wood, Chepstow to Bigsweir Bridge + east bank River Wye at Bigsweir Bridge to Bridge Street bridge, Sedbury**, – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Alcove Wood to Tintern Abbey, Tintern Abbey to Chapel House Wood	Do nothing (locally hold)	Do Nothing, locally Hold the Line	Do Nothing, locally Hold the Line

The impact on the agreed objectives of continuing with present management policy at the west bank River Wye at Alcove Wood, Chepstow to Bigsweir Bridge + east bank River Wye at Bigsweir Bridge to Bridge Street bridge, Sedbury, shoreline can be compared with alternative management policies through the following table:

Policy Unit – Wye – west bank River Wye at Alcove Wood, Chepstow to Bigsweir Bridge + east bank River Wye at Bigsweir Bridge to Bridge Street bridge, Sedbury (WYE 2)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites Lower Wye Valley SAC Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				Features of River Wye SAC not impacted by tidal flooding; site designated for river habitats, otter and migratory fish species no impact to habitats or species for which the site is designated.			Features of River Wye SAC not impacted by tidal flooding; natural processes will operate, no impact to habitats or species for which the site is designated.					
Residential: Chepstow, Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				Residential properties are not at current or future risk of flooding/erosion.			Residential properties are not at current or future risk of flooding/erosion.					
Theme Area High Level Objectives												
Heritage Landscape: Scheduled Monuments: Tintern Abbey Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		

historic environment sites and their setting	also trigger erosion, rather than reduce it							
		Historical assets are not at current or future risk of flooding/erosion.	Historical assets are not at current or future risk of flooding/erosion.					
Residential: Isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Residential properties are not at current or future risk of flooding/erosion.	Residential properties are not at current or future risk of flooding/erosion.					
Infrastructure: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Critical infrastructure is not at current or future risk of flooding/erosion.	Critical infrastructure is not at current or future risk of flooding/erosion.					
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Assets are not at current or future risk of flooding/erosion	Assets are not at current or future risk of flooding/erosion					
Blackcliff-Wyndcliff SSSI Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils - including Geomorphology and Contaminated Land)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		SSSI is not at current or future risk of flooding/erosion	SSSI is not at current or future risk of flooding/erosion					
National and local conservation sites: Lower Wye Valley, Barbadoes Hill Meadows, Cleddon Shoots Woodland and Wye Valley Bat Site SSSIs, plus The	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered

Hudnalls NNR. Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Features of Wye SSSI not impacted by flooding. Other Sites not at current or future risk of flooding/erosion	Features of Wye SSSI not impacted by flooding. Other Sites not at current or future risk of flooding/erosion					
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Habitats and species not at current or future risk of flooding/erosion.	Habitats and species not at current or future risk of flooding/erosion.					
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Residential properties are not at current or future risk of flooding/erosion.	Residential properties are not at current or future risk of flooding/erosion					
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Water resources are not known to be at risk.	Water resources are not known to be at risk.					
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Water quality is not known to be at risk.	Water quality is not known to be at risk.					
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce	▲	▲	▲	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered

	in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Can not raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Limited current or future flood/erosion risk means there is no requirement to increase the height of defences			Limited current or future flood/erosion risk means Landscape is unlikely to change			

Summary

The majority of this area is high ground and is not impacted by flood or erosion risk; as a result the policies appraised do not significantly impact on the objectives or Key Policy Drivers.

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The 'With Present Management' policy (set by SMP1) for **WYE3 – east bank River Wye at Bridge Street bridge, Sedbury to Sedbury STW** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Alcove Wood to Tintern Abbey, Tintern Abbey to Chapel House Wood	Do nothing (locally hold)	Do Nothing, locally Hold the Line	Do Nothing, locally Hold the Line
Chapel House Wood to Sedbury Sewage Works	Do nothing	Do Nothing	Do Nothing

The impact on the agreed objectives of continuing with present management policy at the east bank River Wye at Bridge Street bridge, Sedbury to Sedbury STW shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Wye – east bank River Wye at Bridge Street bridge, Sedbury to Sedbury STW (WYE 3)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites: River Wye SAC Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				Features of SAC not impacted by tidal flooding; site designated for river habitats, otter and migratory fish species no impact to habitats or species for which the site is designated.			Features of SAC not impacted by tidal flooding; natural processes will operate, no impact to habitats or species for which the site is designated.					
Critical infrastructure: Railway, A48, Sewage Treatment Works and crossing Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				Critical infrastructure is not at risk from current or future flooding/erosion .			Critical infrastructure is not at risk from current or future flooding/erosion					
Theme Area High Level Objectives												
Residential: Tutshill and Sedbury Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		

	also trigger erosion, rather than reduce it							
		Residential properties are not at risk from current or future flooding/erosion.			Residential properties are not at risk from current or future flooding/erosion.			
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Recreational sites are not at risk from current or future flooding/erosion			Recreational sites are not at risk from current or future flooding/erosion.			
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Assets are not at risk from current or future flooding/erosion.			Assets are not at risk from current or future flooding/erosion			
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
National Nature conservation: Lower Wye Valley SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		No impact to habitats or species for which the site is designated.			Natural processes will operate, no impact to habitats or species for which the site is designated.			
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered

setting. (Historic Environment)	greater flooding. It could also trigger erosion, rather than reduce it							
		Historical assets are not at risk from current or future flooding/erosion..			Historical assets are not at risk from current or future flooding/erosion..			
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Habitats and species not at risk from current or future flooding/erosion..			Habitats and species not at risk from current or future flooding/erosion..			
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Residential properties are not at risk from current or future flooding/erosion..			Residential properties are not at risk from current or future flooding/erosion..			
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Water resources are not known to be at risk.			Water resources are not known to be at risk.			
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Water quality is not known to be at risk.			Water quality is not known to be at risk.			
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could	▲	▲	▲	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered

	also trigger erosion, rather than reduce it							
		Cannot raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	=	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
		Limited current or future flood/erosion risk means there is no requirement to increase the height of defences			Limited current or future flood/erosion risk means Landscape is unlikely to change			

Summary


Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The majority of this area is high ground and is not impacted by flood or erosion risk; as a result the policies appraised do not significantly impact on the objectives or Key Policy Drivers.


The 'With Present Management' policy (set by SMP1) for **WYE4 – east bank River Wye at Sedbury STW to End of Beachley Road, Beachley Point** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Sedbury Sewage Works to north Beachley	Do nothing	Do Nothing	Do Nothing
Beachley Point	Do nothing	Do Nothing	Do Nothing or retreat the line

The impact on the agreed objectives of continuing with present management policy at the east bank River Wye at Sedbury STW to End of Beachley Road, Beachley Point shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Wye – east bank River Wye at Sedbury STW to End of Beachley Road, Beachley Point (WYE 4)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites River Wye SAC Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
	River Wye SAC will be adversely affected.			Features of SAC not impacted by tidal flooding; site designated for river habitats, otter and migratory fish species no impact to habitats or species for which the site is designated.			Features of SAC not impacted by tidal flooding; natural processes will operate, no impact to habitats or species for which the site is designated.					
Critical infrastructure: M48 Crossing Reduce significance of impact associated with flooding and erosion to critical infrastructure	-			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
	Critical infrastructure is not at risk from current or future flooding/erosion			Critical infrastructure is not at risk from current or future flooding/erosion.			Critical infrastructure is not at risk from current or future flooding/erosion.					
Theme Area High Level Objectives												
Residential developments: Beachley Head Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	-			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
	Residential properties are not at risk from current or future flooding/erosion			Residential properties are not at risk from current or future flooding/erosion.			Residential properties are not at risk from current or future flooding/erosion.					
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	-			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
	Assets are not at risk from current or future flooding/erosion			Assets are not at risk from current or future flooding/erosion			Assets are not at risk from current or future flooding/erosion					
Infrastructure: Local road and path network Reduce significance of	-			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not		

impact associated with flooding and erosion to critical infrastructure (Population and Human Health)								considered
National nature conservation: Pennsylvania Fields and Lower Wye Valley SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)		-	-	-				N/A High ground / hard geology precludes physical retreat of the line, option not considered
	SSSI (Pennsylvania Fields) brackish pasture land requires periodic inundation							
	Flooding to SSSI potentially reduced	Flooding to SSSI potentially reduced			Natural processes predominate, site will evolve and interest features should be protected			
	-	-	-	-	-	-	-	
	Lower Wye Valley SSSI							
		No impact to habitats or species for which the site is designated..			Features of Wye SSSI not impacted by flooding; no impact on habitats or species for which the site is designated			
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	-	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Historical assets are not at risk from current or future flooding/erosion	Historical assets are not at risk from current or future flooding/erosion			Historical assets are not at risk from current or future flooding/erosion			
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)		-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	ATL could adversely affect habitats and species for which the Wye is designated	Habitats and species not at risk from current or future flooding/erosion.			Habitats and species not at risk from current or future flooding/erosion.			
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Residential properties are not at risk from current or future flooding/erosion.	Residential properties are not at risk from current or future flooding/erosion.			Residential properties are not at risk from current or future flooding/erosion.			
Water resources are protected (Water)	-	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Water resources are not known to be at risk.	Water resources are not known to be at risk.			Water resources are not known to be at risk.			
No detriment to water quality (Water) Buttington Farm Historic Landfill site.	-	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Water quality is not known to be at risk. Buttington Farm Historical landfill site is not at risk from current or future flooding/erosion.	Water quality is not known to be at risk. Buttington Farm Historical landfill site is not at risk from current or future flooding/erosion.			Water quality is not known to be at risk. Buttington Farm Historical landfill site is not at risk from current or future flooding/erosion.			
Policy is designed to adapt to or accommodate climate change trends.					-	-	-	N/A High ground / hard geology precludes physical retreat

(Air and Climate)								of the line, option not considered
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			
Avoid detrimental effects to landscape character (Landscape)		-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Ever increasing the height of the defence/land reclamation will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Limited current or future flood/erosion risk means there is no requirement to significantly increase the height of defences			Limited current or future flood/erosion risk means Landscape is unlikely to change			

Summary

The majority of this area is high ground and is not impacted by flood or erosion risk; as a result the policies appraised do not significantly impact on the objectives or Key Policy Drivers.

High ground and no flood risk presently, therefore advance the line will not be a benefit and is technically inappropriate for areas of high ground and because there is no reduction in current flood risk/increased protection.

4.7 Tidenham and Surrounding Villages Theme Area (TID)

The 'With Present Management' policy (set by SMP1) for **TID1 – End of Beachley Road, Beachley Point to Guscar Rocks** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Beachley to Sedbury Cliffs	Do nothing	Do Nothing	Do Nothing or retreat the line
Sedbury Cliffs	Do nothing	Do Nothing	Do Nothing
Sturch Pill to Guscar Rocks	Do nothing / Hold / Retreat	Do Nothing or (provisionally) Hold or Retreat the Line	Do Nothing or (provisionally) Hold or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the end of Beachley Road, Beachley Point to Guscar Rocks shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Tidenham and surrounding villages – End of Beachley Road, Beachley Point to Guscar Rocks (TID 1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Coastal squeeze will occur.			Coastal squeeze will occur.			In theory habitats will roll back and intertidal habitats will be maintained. . Possibly some loss of terrestrial habitats.				Impact will depend on alignment line: adequate space to select alignment so unlikely to be an adverse impact. Terrestrial habitats are likely to be affected.	
Critical infrastructure: Railway Reduce significance of impact associated with flooding and erosion to critical infrastructure				-			-					
	Limited flood risk, within unit. Critical infrastructure will be protected.			Critical infrastructure will be protected.			Critical infrastructure at risk from increased flooding.				Impact will depend on realignment of coast. Assets may be adversely impacted.	
Theme Area High Level Objectives												
Residential: Sedbury, Beachley, Tidenham and isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)				-			-				-	
	Limited/no properties at risk. Residential properties will be protected.			Limited/no properties at risk Residential properties will be protected.			Limited number of residential properties will be at an increased risk from flooding.				Impact will depend on alignment line: however only limited number of properties in this area. Impact unlikely	
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	-			-	-	-	-	-	-		-	
	General access along coast maintained			. General access along coast maintained			Limited flood/erosion risk so existing footpaths unlikely to be significantly affected				Retreating the line could affect existing footpaths	
Industrial, commercial and economic assets: Local commercial				-			-					
	Agriculture is primary land use; will be			Agriculture is primary land use; will be protected from			Land is some limited areas will be at increased risk of flooding				Retreating the defence could result in loss of	

<p>assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)</p>	protected from flooding	flooding						agricultural land	
<p>Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)</p>	●	-	●	●	-	▲	▲	▲	
<p>National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>	▲ Coastal squeeze will occur.	-	▲	▲	-	▲	●	▲ ●	
<p>Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Broad Stone Scheduled Ancient Monument Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)</p>	●	●	●	●	-	▲	▲	-	
	Limited features at risk under current and future tidal flooding/erosion. Historical assets protected.	Limited features at risk under current and future tidal flooding/erosion. Historical asset protected.				Limited features present. Historical asset will be at an increased risk of flooding.	Impact will depend on alignment line: adequate space to select alignment so unlikely to be an adverse impact.		
<p>Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)</p>	▲	-	▲	▲		▲	▲	▲	
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.				Loss of intertidal habitat due to coastal squeeze because coastline will not retreat rapidly enough.	Impact will depend on alignment line: adequate space to select alignment so unlikely to be an adverse impact. Terrestrial habitats are likely to be affected.		
<p>Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with</p>	●	-	●	●	-	▲	▲	▲	

flood and erosion risk) (Population and Human Health)								
	Residential properties will be protected.	Residential properties will be protected.	Residential properties will be protected.	Residential properties will be at an increased risk from flooding.				Impact will depend on alignment line: however space in reach is not very limited so adverse impact will only be localised to some isolated properties.
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.				No water resource known to be at risk.
No detriment to water quality (Water)	-	-	-	-	-	-	-	-
	No known risk to water quality.	No known risk to water quality.	No known risk to water quality.	No known risk to water quality.				No known risk to water quality.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.				Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure				Retreating the defences will alter the appearance and character of the urban area; the nature and design of any changes will determine whether this is a positive or a negative impact.

Summary

The area is predominantly protected from flood risk by high ground, with an embankment at Sturch Pill with a residual life of <20years.

The 'With Present Management' policy (set by SMP1) for **TID2 – Guscar Rocks to Lydney Harbour** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Guscar Rocks to Lydney Harbour Mouth	Hold the Line	Hold the Line	Hold the Line or Retreat the Line (locally)

The impact on the agreed objectives of continuing with present management policy at the Guscar Rocks to Lydney Harbour shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Tidenham and surrounding other villages – Guscar Rocks to Lydney Harbour (TID 2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features												
	Coastal squeeze will occur.	Coastal squeeze will occur. Loss of intertidal habitats from within the Severn European sites and SSSI.			In theory habitats will roll back and intertidal habitats will be maintained. However terrestrial habitats will be affected.			Impact will depend on alignment line: adequate space to select alignment so unlikely to be an adverse impact. Terrestrial habitats are likely to be affected.				
Critical infrastructure: Railway Lydney Harbour Reduce significance of impact associated with flooding and erosion to critical infrastructure												
	Critical infrastructure will be protected.	Critical infrastructure will be protected.			Critical infrastructure at risk from increased flooding.			Impact will depend on realignment of coast. Assets may be adversely impacted.				
Theme Area High Level Objectives												
Residential: Netherend, Aylburton and isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)												
	Residential properties will be protected.	Residential properties will be protected.			Residential properties will be at an increased risk from flooding.			Impact will depend on alignment line: however space in reach is not very limited so adverse impact will only be localised to some isolated properties.				
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key	-				-	-	-	-	-	-		-

community, recreational and amenity facilities. (Population and Human Health)								
	No assets known to be present.	No assets known to be present.			No assets known to be present.			No assets known to be present.
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	●	-	●	●	-	▲	▲	-
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	●	-	●	●	-	▲	▲	-
Nature conservation sites: Severn Estuary SSSI Reduce significance of impact associated with maintaining the integrity of nationally and locally designated sites and the favourable condition of their features (Biodiversity, Flora and Fauna)	▲	-	▲	▲	-	▲	▲	▲
	Coastal squeeze will occur.	Coastal squeeze will occur.			In theory habitats will roll back and intertidal habitats will be maintained. However terrestrial habitats will be affected.			Impact will depend on alignment line: adequate space to select alignment so unlikely to be an adverse impact. Terrestrial habitats are likely to be affected.
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	-	-	-	-	-	-	-	-
	No assets present.	No assets present.			No assets present.			No assets present.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	▲	-	▲	▲		▲	▲	▲
	Coastal squeeze will occur.	Coastal squeeze will occur.			In theory habitats will roll back and intertidal habitats will be maintained. However terrestrial habitats will be affected.			Impact will depend on alignment line: adequate space to select alignment so unlikely to be an adverse impact. Terrestrial habitats are likely to be affected.

<p>Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)</p>	●	-	●	●	-	▲	▲	▲
	Residential properties will be protected.	Residential properties will be protected.	Residential properties will be protected.	Residential properties will be protected.	Residential properties will be at an increased risk from flooding.	Residential properties will be at an increased risk from flooding.	Residential properties will be at an increased risk from flooding.	Impact will depend on alignment line: however space in reach is not very limited so adverse impact will only be localised to some isolated properties.
<p>Water resources are protected (Water)</p>	-	-	-	-	-	-	-	-
	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.
<p>No detriment to water quality (Water) Lydney recreation trust historic landfill site</p>	●	●	●	●	-	▲	▲	-
	Protection from flooding of historic landfill site.	Protection from flooding of historic landfill site.	Protection from flooding of historic landfill site.	Protection from flooding of historic landfill site.	Water quality adverse potential impacts because of increased tidal flood risk.	Water quality adverse potential impacts because of increased tidal flood risk.	Water quality adverse potential impacts because of increased tidal flood risk.	Realignment is not likely to impact on the historic landfill site.
<p>Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)</p>	▲	▲	▲	▲	-	-	-	●
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Managed retreat will accommodate climate change.
<p>Avoid detrimental effects to landscape character (Landscape)</p>	▲	▲	▲	▲	-	-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.

Summary

As the railway line embankment currently forms the defence for this Policy Unit, retreat of the line would leave the railway exposed therefore it has been considered to have a strong negative impact on the feature.

4.8 Lydney Harbour Theme Area (LYD)

The 'With Present Management' policy (set by SMP1) for **LYD1 – Lydney Harbour** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Guscar Rocks to Lydney Harbour Mouth	Hold the Line	Hold the Line	Hold the Line or Retreat the Line (locally)

The impact on the agreed objectives of continuing with present management policy at the Lydney Harbour shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Lydney – Lydney Harbour basin (LYD 1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Coastal squeeze will occur.			Coastal squeeze will occur.			In theory habitats will roll back and intertidal habitats will be maintained. However terrestrial habitats will be affected.			Impact will depend on alignment line: harbour is unlikely to be realigned.		
Critical Infrastructure: Railway Reduce significance of impact associated with flooding and erosion to critical infrastructure				-			-					
	Critical infrastructure will be protected.			Critical infrastructure will be protected.			Critical infrastructure at risk from increased flooding.			Impact will depend on realignment of coast. Assets may be adversely impacted.		
Residential: Lydney Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)				-			-					
	Residential properties will be protected.			Residential properties will be protected.			Residential properties will be at an increased risk from flooding.			Impact will depend on alignment line: however space in reach is limited so adverse impact likely to localised properties.		
Theme Area High Level Objectives												
Recreational site: Lydney Harbour facilities Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)				-			-					
	Asset protected.			Asset protected.			Asset at an increased risk of flooding.			Impact depends on the alignment line. Space in reach is limited. Unlikely to be adverse impact to harbour facilities.		
Industrial, commercial and economic assets: Lydney Harbour industrial estate Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)				-			-					
	Asset protected.			Asset protected.			Asset at an increased risk of flooding.			Impact depends on the alignment line. Space in reach is limited. Unlikely to be adverse impact to harbour facilities.		
Lydney Harbour port operations Reduce significance of impact associated with				-			-					
	Asset protected.			Asset protected.			Asset at an increased risk of flooding.			Impact depends on the alignment line. Space in		

<p>policies on marine operations and activities (Population and Human Health)</p>							reach is limited. Unlikely to be adverse impact to harbour facilities.	
<p>Infrastructure: Local road, path network and Lydney canal Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)</p>	●	-	●	●	-	▲	▲	▲
<p>National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>	▲	-	▲	▲	-	▲	▲	-
<p>Coastal squeeze will occur.</p>	Coastal squeeze will occur.		Coastal squeeze will occur.		In theory habitats will roll back and intertidal habitats will be maintained. However terrestrial habitats will be affected.		Impact will depend on alignment line: harbour is unlikely to be realigned.	
<p>Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Lydney Harbour Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)</p>	●	-	●	●	-	▲	▲	-
	Asset protected	Asset protected		Asset at an increased risk of flooding.		Impact will depend on alignment line: adequate space to select alignment so unlikely to be an adverse impact.		
<p>Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)</p>	▲	-	▲	▲	-	▲	▲	-
	Coastal squeeze will occur.	Coastal squeeze will occur.		In theory habitats will roll back and intertidal habitats will be maintained. However terrestrial habitats will be affected.		Impact will depend on alignment line: harbour is unlikely to be realigned.		
<p>Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)</p>	●	-	●	●	-	▲	▲	▲
	Residential properties will be protected.	Residential properties will be protected.		Residential properties will be at an increased risk from flooding.		Impact will depend on alignment line: however space in reach is limited so adverse impact likely to localised properties.		
<p>Water resources are protected (Water)</p>	-	-	-	-	-	-	-	-
	No water resource known to be at risk.	No water resource known to be at risk.		No water resource known to be at risk.		No water resource known to be at risk.		
<p>No detriment to water quality (Water)</p>	●	●	●	●	-	▲	▲	-

Lydney historic and active landfill sites								
	Protection from flooding of landfill sites.	Protection from flooding of landfill sites.			Water quality adverse potential impacts because of increased tidal flood risk.			Realignment is not likely to impact on the landfill sites.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	-	-	-	-	-	-	●
	Cannot raise the height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	-	-	-	-	-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	HTL will not involve any change to the mudstone cliffs.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.

Summary

The key policy driver for this unit is the harbour itself, including the flood defence (Harbour gates).

Within Lydney Harbour there are residential, industrial and commercial properties within the flood risk zone should the defences be allowed to deteriorate, failing in the 2nd epoch under a No Active Intervention scenario.

4.9 Lydney to Gloucester Theme Area (GLO)

The 'With Present Management' policy (set by SMP1) for **GLO1 – Lydney Harbour to Brims Pill** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Lydney Harbour to Cliff Farm	Do nothing	Do Nothing	Do Nothing
Cliff Farm to Wellhouse Rock	Hold the Line	Hold the Line	Hold the Line
Wellhouse Rock to Poulton Court	Hold the Line	Hold the Line	Hold the Line
Poulton Court to Whitescourt, Awre	Do nothing	Do Nothing	Do Nothing

The impact on the agreed objectives of continuing with present management policy at the Lydney Harbour to Brims Pill shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Lydney to Gloucester – Lydney Harbour to Brims Pill (GLO 1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features												
	Coastal squeeze will occur.			Coastal squeeze will occur.			In theory habitats will roll back and intertidal habitats will be maintained. However: the coast is not likely to erode back fast enough so coastal squeeze may occur. Also terrestrial habitats will be affected.				Impact will depend on alignment line. In theory habitats will roll back and intertidal habitats will be maintained. Also terrestrial habitats may be affected.	
Critical infrastructure: Railway, Electricity transmission network Blakeney Sewage treatment works Reduce significance of impact associated with flooding and erosion to critical infrastructure												
	The railway line near Blakeney is the only infrastructure likely to be flooding. Asset will be protected.			The railway line near Blakeney is the only infrastructure likely to be flooding. Asset will be protected.			The railway line near Blakeney is the only infrastructure likely to be flooding. Asset will be at an increased risk of flooding.				Impact will depend on alignment line. Railway line and sewage treatment works are likely to be adversely impacted by realignment.	
Theme Area High Level Objectives												
Residential: Blakeney and isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	-			-	-	-	-	-	-		-	
	Residential properties not			Residential properties not			Residential properties not				Residential properties not	

	at risk from flooding.			at risk from flooding.			at risk from flooding.			at risk from flooding.		
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	-	-	-	-	-	-	-	-	-	-	-	
	No sites identified to be at risk.	No sites identified to be at risk.	No sites identified to be at risk.	No sites identified to be at risk.	No sites identified to be at risk.	No sites identified to be at risk.	No sites identified to be at risk.	No sites identified to be at risk.	No sites identified to be at risk.	No sites identified to be at risk.	No sites identified to be at risk.	
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)											-	
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)												
Geological SSSI: Lydney Cliff Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils - including Geomorphology and Contaminated Land)											-	
National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with maintaining the integrity of nationally and locally designated sites and the favourable condition of their features (Biodiversity, Flora and Fauna)					-	-						
	Coastal squeeze will occur.	Coastal squeeze will occur.	Coastal squeeze will occur.	Coastal squeeze will occur.	In theory habitats will roll back and intertidal habitats will be maintained. However: the coast is not likely to erode back fast enough so coastal squeeze may occur. Also terrestrial habitats will be affected.	In theory habitats will roll back and intertidal habitats will be maintained. However: the coast is not likely to erode back fast enough so coastal squeeze may occur. Also terrestrial habitats will be affected.	In theory habitats will roll back and intertidal habitats will be maintained. However: the coast is not likely to erode back fast enough so coastal squeeze may occur. Also terrestrial habitats will be affected.	In theory habitats will roll back and intertidal habitats will be maintained. However: the coast is not likely to erode back fast enough so coastal squeeze may occur. Also terrestrial habitats will be affected.	In theory habitats will roll back and intertidal habitats will be maintained. However: the coast is not likely to erode back fast enough so coastal squeeze may occur. Also terrestrial habitats will be affected.	Impact will depend on alignment line. In theory habitats will roll back and intertidal habitats will be maintained. Also terrestrial habitats may be affected.	Impact will depend on alignment line. In theory habitats will roll back and intertidal habitats will be maintained. Also terrestrial habitats may be affected.	
Listed Buildings and	-	-	-	-	-	-	-	-	-	-	-	

non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)								
	Historic assets not at risk from flooding.	Historic assets not at risk from flooding.			Historic assets not at risk from flooding.			Historic assets not at risk from flooding.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	▲		▲	▲		▲	▲	
	Coastal squeeze will occur.	Coastal squeeze will occur.			In theory habitats will roll back and intertidal habitats will be maintained. However: the coast is not likely to erode back fast enough so coastal squeeze may occur. Also terrestrial habitats will be affected.			Impact will depend on alignment line. In theory habitats will roll back and intertidal habitats will be maintained. Also terrestrial habitats may be affected.
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	-	-	-	-	-	-	
	Residential properties not at risk from flooding.	Residential properties not at risk from flooding.			Residential properties not at risk from flooding.			Residential properties not at risk from flooding.
Water resources are protected (Water)	-	-	-	-	-	-	-	
	No water resource known to be at risk.	No water resource known to be at risk.			No water resource known to be at risk.			No water resource known to be at risk.
No detriment to water quality (Water)	●	●	●	●	-	-	▲	
	STW protected.	STW protected.			STW at an increased risk of flooding.			Realignment is not likely to impact on the STW.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	-	-	-	-	-	●	
	Cannot raise the height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	-	-	-	-	-	-	
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	HTL will not involve any change to the mudstone cliffs.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area.

Summary

This unit does not have defences at present due to high ground limiting flood and erosion risk to the features of the shoreline. A NAI policy will allow the continued exposure of Lydney Cliff (SSSI), therefore would have

a beneficial continued impact over the 3 epochs considered by the Severn Estuary SMP2. The railway line runs in close proximity to the shoreline around Wellhouse Bay and Purton, shoreline erosion may threaten this structure over the SMP2 timeframe.

The 'With Present Management' policy (set by SMP1) for **GLO2 – Brims Pill to Northington Farm** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Whitescourt to Hayward	Hold the Line	Hold the Line or Retreat the Line	Retreat the Line
Hayward to Northington Farm	Hold the Line	Hold the Line or Retreat the Line	

The impact on the agreed objectives of continuing with present management policy at the Brims Pill to Northington Farm shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Lydney to Gloucester – Brims Pill to Northington Farm (GLO 2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Internationally Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Coastal squeeze will occur.			Coastal squeeze will occur.			In theory habitats will roll back and intertidal habitats will be maintained. The reach is not limited in terms of space so there is scope to roll back. Also terrestrial habitats will be affected.				Impact will depend on alignment line. In theory habitats will roll back and intertidal habitats will be maintained. Also terrestrial habitats may be affected.	
Critical infrastructure: Reduce significance of impact associated with flooding and erosion to critical infrastructure	-			-	-	-	-	-	-	-	-	-
	No assets identified that will be at an increased risk of flooding.			No assets identified that will be at an increased risk of flooding.			No assets identified that will be at an increased risk of flooding.				No assets identified that will be at an increased risk of flooding.	
Theme Area High Level Objectives												
Residential: Awre and isolated properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)							-					
	Awre not at risk of flooding but isolated properties will be protected.			Awre not at risk of flooding but isolated properties will be protected.			Isolated properties will be at an increased risk of flooding.				Impact will depend on alignment line. Isolated properties could be adversely impacted.	
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	-			-	-	-	-	-	-	-	-	-
	No sites identified to be at risk.			No sites identified to be at risk.			No sites identified to be at risk.				No sites identified to be at risk.	
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	-			-	-	-	-	-	-	-	-	-

<p>Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)</p>	-	-			-			-
<p>National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>		-			-			
<p>Listed Buildings and non-designated sites of historic interest. Priory Cottage listed building Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)</p>	-	-	-	-	-	-	-	-
<p>Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)</p>		-			-			
<p>Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)</p>					-			
<p>Water resources are protected (Water)</p>	-	-	-	-	-	-	-	-
<p>No detriment to water quality (Water)</p>	-	-	-	-	-	-	-	-
<p>Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)</p>					-	-	-	
<p>Avoid detrimental effects to landscape character (Landscape)</p>					-	-	-	-

	impact with defences disrupting views.	impact with defences disrupting views.	townscape due to increased flooding and effect on buildings and use of the area.	townscape due to increased flooding and effect on buildings and use of the area.
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Summary

Flood risk within this Policy Unit does not extend to the residential and commercial properties of Awre over the SMP2 timeframe. Assets at risk of flooding include agricultural land, local footpaths and isolated residential properties. Heritage features within the flood risk area are environmental records which will not be affected by inundation.

The 'With Present Management' policy (set by SMP1) for **GLO3– Northington Farm to Newnham Church** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Northington Farm to Portlands Nab	Do nothing	Do Nothing (generally) or Hold the Line (locally)	Do Nothing (generally) or Hold the Line (locally)
Portlands Nab to the downstream boundary of Newnham	Do nothing	Do Nothing (generally) or Hold/Retreat the Line (locally)	Do Nothing (generally) or Hold/Retreat the Line (locally)

The impact on the agreed objectives of continuing with present management policy at the Northington Farm to Newnham Church shoreline can be compared with alternative management policies through the following table:

Key Policy Drivers	Policy Unit – Lydney to Gloucester – Northington Farm to Newnham Church (GLO 3)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Critical infrastructure: A48, Railway Reduce significance of impact associated with flooding and erosion to critical infrastructure	-			-			-			-		
	Assets not at risk of flooding.			Assets not at risk of flooding.			Assets not at risk of flooding.			Assets not at risk of flooding.		
Theme Area High Level Objectives												
Residential: Isolated residential developments Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	-			-			-			-		
	Residential properties not at risk of flooding.			Residential properties not at risk of flooding.			Residential properties not at risk of flooding.			Residential properties not at risk of flooding.		
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	-			-			-			▲		
	Footpaths will be protected.			Footpaths will be protected.			Local footpaths will be at an increased risk of flooding.			Impact will depend on alignment line; however space in reach is not limited so there is likely to be an adverse impact.		
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	●			● ● ●			-			▲ ▲ ▲		
	Limited flooding likely in this reach but some agricultural assets protected.			Limited flooding likely in this reach but some agricultural assets protected.			Limited flooding likely in this reach but some agricultural assets at an increased risk of flooding.			Impact depends on alignment line: however space.		
Listed Buildings and non-designated sites of historic interest. Priority Cottage listed building Reduce significance of impact to scheduled and locally, regionally and nationally important	-			-			-			-		
	Limited historical assets.			Limited historical assets.			Limited historical assets.			Limited historical assets.		

cultural historic environment sites and their setting. (Historic Environment)					
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	▲	▲	▲	▲	▲
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	-	-	-	-
Water resources are protected (Water)	-	-	-	-	-
No detriment to water quality (Water)	-	-	-	-	-
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	-	●
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	-	-

Summary

High ground and hard geology limit flood and erosion risk to this unit, therefore few assets are at risk. Minimal agricultural land is at risk under a No Active Intervention scenario.

The 'With Present Management' policy (set by SMP1) for **GLO4– Newnham Church to Farm north of Broadoak** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Newnham and Broadoak	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Newnham Church to Farm north of Broadoak shoreline can be compared with alternative management policies through the following table:

Key Policy Drivers	Policy Unit – Lydney to Gloucester – Newnham Church to Farm north of Broadoak (GLO4)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Residential: Newnham Broadoak Reduce significance of impact associated with flooding and erosion to people and property	●			●	●	●	▲	▲	▲	▲		
	Residential properties protected.			Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line; however space in the reach is limited so there is likely to be an adverse impact.		
Critical infrastructure: A48, Railway Reduce significance of impact associated with flooding and erosion to critical infrastructure	●●			-	●●	●●	-	▲	▲	-		
	Critical infrastructure will be protected.			Critical infrastructure will be protected.			Critical infrastructure at risk from increased flooding.			Impact will depend on realignment of coast. Assets unlikely to be adversely impacted.		
Theme Area High Level Objectives												
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	●			●	●	●	▲	▲	▲	-		
	Public car park in Newnham will be protected from flooding/			Public car park in Newnham will be protected from flooding/			Public car park in Newnham will be at an increased risk from flooding/			Impact will depend on realignment of coast. Assets unlikely to be adversely impacted.		
Industrial, commercial and economic assets: Local commercial assets Agricultural land Local businesses Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	●			●	●	●	▲	▲	▲	▲		
	Assets protected from flooding.			Assets protected from flooding.			Assets at an increased risk from flooding.			Impact will depend on realignment of coast. Assets may be adversely impacted.		
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	-			-	-	-	-	-	-	-		
Listed Buildings and non-designated sites of historic interest.	●			●	●	●	▲	▲	▲	▲		
	Historical assets protected from flooding.			Historical assets protected from flooding			Historical assets at an increased risk from			Impact will depend on realignment of the coast.		

Listed buildings in Newnham and Broadoak Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)				flooding.	Historical assets may be adversely impacted.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	▲	▲	▲	▲	▲
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	●	●	●	▲	▲
Water resources are protected (Water)	-	-	-	-	-
No detriment to water quality (Water)	-	-	-	-	-
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	-	●
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	-	-

Summary

High ground and hard geology limit flood and erosion risk to this unit, however, the rate of erosion at the shoreline will accelerate as a result of sea level rise. Newnham is a key residential and centre of heritage assets within the Policy Unit, many properties are located on the immediate cliff line, and therefore at erosion risk in the short term and continuing through the SMP2 timeframe. As the line is currently held, to preserve the landscape character a Hold the Line policy would be beneficial.

The 'With Present Management' policy (set by SMP1) for **GLO5– farm to the north of Broadoak to Hill Farm, Rodley** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Broadoak to the upstream end of Garden Cliff	Hold the Line (do nothing locally)	Hold the Line, locally Do Nothing	Hold the Line, locally Do Nothing
The Dumballs	Hold the Line	Hold the Line	Hold the Line or Retreat the Line
Rodley to Bollow	Do nothing	Do Nothing	Do Nothing

The impact on the agreed objectives of continuing with present management policy at the farm to the north of Broadoak to Hill Farm, Rodley shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Lydney to Gloucester – Farm to north of Broadoak to Hill Farm, Rodley (GLO 5)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Heritage: Westbury House and Gardens Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting												
	Historical assets will be protected.			Historical assets will be protected.			Historical assets will be at an increased risk of flooding.			Impacts will depend on the alignment line; however Westbury House water gardens could be adversely impacted if alignment is required at that point of the reach.		
Residential: Westbury on Severn and Rodley Reduce significance of impact associated with flooding and erosion to people and property												
	Residential properties protected.			Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line; however space in the reach is not very limited so property is not likely to be affected.		
Theme Area High Level Objectives												
Residential: Isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)												
	Residential properties protected.			Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line; however space in the reach is not very limited so property is not likely to be affected.		
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)												
	Coastal path will be protected from flooding.			Coastal path will be protected from flooding.			Coastal path will be at an increased risk from flooding.			Impact will depend on realignment of coast. Coastal footpath is likely to be adversely impacted.		
Industrial, commercial and economic assets: Agricultural land Tourism Local commercial assets Reduce significance of impact associated with												
	Assets protected from flooding.			Assets protected from flooding.			Assets at an increased risk from flooding.			Impact will depend on realignment of coast. Assets may be adversely impacted.		

flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)							
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	●	●	●	●	▲	▲	▲
Garden Cliff SSSI Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils - including Geomorphology and Contaminated Land)	▲	▲	▲	▲	●	●	●
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	●	●	●	●	▲	▲	▲
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	▲	▲	▲	▲	▲	▲	▲
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	●	●	●	●	▲	▲	▲
Water resources are protected (Water)	-	-	-	-	-	-	-
No detriment to water quality (Water)	-	-	-	-	-	-	-
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	●
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-










	impact with defences disrupting views.	impact with defences disrupting views.	potential changes in vegetation structure.	landscape due to potential changes in vegetation structure.
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The 'With Present Management' policy (set by SMP1) for **GLO6– west bank at Hill Farm, Rodley to west bank at Goose Lane farm** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Rodley to Bollow	Do nothing	Do Nothing	Do Nothing

The impact on the agreed objectives of continuing with present management policy at the west bank at Hill Farm, Rodley to west bank at Goose Lane farm shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Lydney to Gloucester – west bank at Hill Farm, Rodley to west bank at Goose Lane farm (GLO 6)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agricultural Assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	●			●	●	●	-	▲	▲	▲		
	Agricultural land protected from flooding.			Agricultural land protected from flooding.			Agricultural land at an increased risk from flooding.			Impact will depend on realignment of coast. Agricultural land may be adversely impacted.		
Residential: Bollow and isolated residential Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	●			●	●	●	-	▲	▲	-		
	Residential properties protected.			Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line; however space in the reach is not very limited so property is not likely to be affected.		
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	-			-	-	-	-	-	-	▲		
	Recreational assets not at risk of flooding.			Recreational assets not at risk of flooding.			Recreational assets not at risk of flooding.			Impact will depend on alignment line; assets may be adversely impacted.		
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	-			-	-	-	-	-	-	-		
	Historical assets not at risk of flooding.			Historical assets not at risk of flooding.			Historical assets not at risk of flooding.			Historical assets not at risk of flooding.		
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	▲			▲	▲	▲	▲	▲	▲	▲		
	Loss of intertidal habitat due to coastal squeeze.			Loss of intertidal habitat due to coastal squeeze.			Intertidal habitats retained/ increased; possible loss of habitats behind existing defences.			Intertidal habitats retained/ increased; possible loss of habitats affected by retreated line.		
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety)	●			●	●	●	-	▲	▲	-		
	Residential properties protected.			Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line; however space in the reach is not		

associated with flood and erosion risk) (Population and Human Health)							very limited so property is not likely to be affected.
Water resources are protected (Water)	-	-	-	-	-	-	-
	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.	No water resource known to be at risk.
No detriment to water quality (Water)	-	-	-	-	-	-	-
	No risk to water quality known.	No risk to water quality known.	No risk to water quality known.	No risk to water quality known.	No risk to water quality known.	No risk to water quality known.	No risk to water quality known.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)					-	-	
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)					-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.

The 'With Present Management' policy (set by SMP1) for **GLO7– west bank at Goose Lane farm to west bank at Ley Road** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Bollow to Hartland's Hill	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the west bank at Goose Lane farm to west bank at Ley Road shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Lydney to Gloucester – west bank at Goose Lane farm to west bank at Ley Road (GLO 7)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites: Walmore Common Ramsar Site Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it						-			-		
				The site will be protected from increased tidal flooding.			The site will experience increased tidal flooding. Although the site is wetland it relies on Winter fluvial flooding to maintain habitat. Increased tidal flooding would have an adverse impact.			It is unlikely that the site will be impacted by managed realignment.		
Theme Area High Level Objectives												
Residential: Isolated residential developments Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it									-		
				Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line; however space in the reach is not very limited so property is not likely to be affected.		
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
				Local footpath network protected from flooding.			Local footpath network at an increased risk of			Impact depends on alignment line: there may		

					flooding.		be an adverse impact.
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it						
			Assets protected from flooding.	Assets at an increased risk of flooding.	Impact depends on alignment line. However there is limited space in the catchment so an adverse impact is likely.		
Critical infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it						
			Assets protected.	Assets at an increased risk of flooding.	Impact depends on alignment line. However there is limited space in the catchment so an adverse impact is likely.		
National nature conservation: Walmore Common SSSI and NNR Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-		
			The site will be protected from increased tidal flooding.	The site will experience increased tidal flooding. Although the site is wetland it relies on Winter fluvial flooding to maintain habitat. Increased tidal flooding would have an adverse impact.	It is unlikely that the site will be impacted by managed realignment.		
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it						
			Wetland habitat protected.	Loss of wetland habitat.	Loss of wetland habitat		
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn						

associated with flood and erosion risk) (Population and Human Health)	Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line; however space in the reach is not very limited so property is not likely to be affected.
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No water resource known to be at risk.			No water resource known to be at risk.			No water resource known to be at risk.
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No risk to water quality known.			No risk to water quality known.			No risk to water quality known.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	●
		Cannot raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	-
		Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception).			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception).

		landscape): also a visual impact with defences disrupting views.	May be a local change to landscape due to potential changes in vegetation structure.	May be a local change to landscape due to potential changes in vegetation structure.
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Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The 'With Present Management' policy (set by SMP1) for **GLO8 – Ley Road to Drain from Long Brook –** is:

SMP1 Management Unit	0-20	20-50	50 - 100
Hartland's Hill to Denny Hill	Hold the Line	Hold the Line	Hold the Line
Denny Hill to Minsterwortham	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Ley Road to Drain from Long Brook shoreline can be compared with alternative management policies through the following table:

Policy Unit – Lydney to Gloucester – Ley Road to Drain from Long Brook (GLO 8)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical infrastructure: Railway, A40 Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
				Assets protected.			Assets at an increased risk of flooding.			Impact depends on alignment line. However, limited space for realignment so adverse effect likely.		
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agricultural assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
				Agricultural land protected from flooding.			Agricultural land at an increased risk from flooding.			Impact will depend on realignment of coast. Agricultural land may be adversely impacted.		
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
				Local footpath network			Local footpath network			Impact depends on		

		including the Gloucestershire way protected from flooding.			including the Gloucestershire way protected from flooding.			alignment line: there may be an adverse impact.
Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Assets protected.			Assets at an increased risk of flooding.			Impact depends on alignment line. However there is limited space in the catchment so an adverse impact is likely.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Wetland and terrestrial habitat protected.			Loss of wetland/ terrestrial habitat.			Loss of wetland/ terrestrial habitat
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							-
		Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line; however space in the reach is not very limited so property is not likely to be affected.
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No water resource known to be at risk.			No water resource known to be at risk.			No water resource known to be at risk.
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn	-	-	-	-	-	-	-

	Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		No risk to water quality known.			No risk to water quality known.			No risk to water quality known.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	●
		Cannot raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	-
		Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

4.10 Gloucester to Haw Bridge Theme Area (MAI)

The 'With Present Management' policy (set by SMP1) for **MAI1 – West bank at Drain from Long Brook to west bank at railway / A40 bridge** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Lower Parting to Maisemore Weir	Hold the Line	Hold the Line	Hold the Line or Locally Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the West bank at Drain from Long Brook to west bank at railway / A40 bridge shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Gloucester to Haw Bridge – west bank at Drain from Long Brook to west bank at railway / A40 bridge (MAI 1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical Infrastructure: Railway, A48, Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-	▲	▲	-		
				Critical infrastructure protected			Railway at risk			Assuming realignment avoids main road and railway		
Residential: Minsterworth Reduce significance of impact associated with flooding and erosion to people and property.	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		
				Some isolated properties in at risk area; will be protected			Some isolated properties at risk; Minsterworth largely unaffected			Overall flood risk will be reduced however some isolated properties may be affected		
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agriculture Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		
				Assets would remain protected			Limited built assets at risk; increased flooding would affect agriculture			Increased protection to majority of assets; some adverse effects to assets		

								within area of realignment
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No identified features at risk			No identified features at risk			No identified features at risk
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	-
		Intertidal habitats lost to coastal squeeze			Intertidal habitats retained /increased; possible loss of habitats behind existing defences			Intertidal habitats retained/increased ; possible loss of habitats behind existing defences
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	●
		Limited properties at risk – continue to be protected			Flood risk will increase			Overall flood risk will be reduced however some isolated properties may be affected
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No features at risk			No features at risk			No features at risk
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-

		No features at risk			No features at risk			No features at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-	-	-	
		Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-	-	-	-
		Ever increasing height of defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The 'With Present Management' policy (set by SMP1) for **MAI2 – West bank from Railway / A40 bridge to west bank at Haw Bridge, including River Leadon** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
No Policy Set	No Policy Set	No Policy Set	No Policy Set

No policy was set in the first round of SMPs because the upstream reaches of the Severn were considered to be primarily fluvial rather than estuarine, and therefore the definition of Strategic Shoreline Management Option for this unit was deemed not required.

The impact on the agreed objectives of all management policy options can be considered through the following table:

	Policy Unit – Gloucester to Haw Bridge – Lower Parting to west bank at Haw Bridge, including River Leadon (MAI 2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
National / Local Nature Conservation Sites – Ashleworth Ham SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	●	-	-	▲	●		
				Ashleworthham SSSIs Site would be protected from inundation from saline water			Increased flooding from saline water could affect habitats – hydraulic pathways unclear			Assuming defence line is not retreated to SSSI		
Critical Infrastructure: A414 / A40, Railway Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	●	●	-	▲	▲	●		
				Limited critical infrastructure present, some power lines; protected from flooding/erosion			Limited critical infrastructure present, some power lines; subject to increased inundation			Some local adverse affects within retreated area, other areas protected		
Residential: Maisemore, Ashleworth Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		
				Some isolated properties in at risk area; will be protected			Some isolated properties at risk			Overall flood risk will be reduced however some isolated properties may be affected		

Theme Area High Level Objectives											
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	●/▲			
		Pubic footpath along the west bank protected	Public footpath and other features at risk of flooding/erosion	Riverside footpath may be adversely affected, other features protected							
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	●	●	-	▲	▲	●			
		Land use predominantly agriculture (grazing with some arable). Protected from flooding and erosion	Agricultural land subject to inundation	Some local adverse affects within retreated area, land behind protected							
Scheduled Monuments, Highnam Court Listing Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	●	●	-	▲	▲	●			
		Limited features present; Highnam court outside flood risk area	Limited features present; Highnam Court outside flood risk area	No major features likely to be affected by retreated defences; features further back protected in long term							
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	-			
		Intertidal habitats lost to coastal squeeze	Intertidal habitats retained /increased; possible loss of habitats behind existing defences	Intertidal habitats retained/increased ; possible loss of terrestrial habitat as defences set back							
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion,	●	●	●	-	▲	▲	●			

	rather than reduce it							
		Limited at risk population protected			Small population at increased risk			Overall flood risk will be reduced however some isolated properties may be affected
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	
		No resources known to be present			No resources known to be present			No resources known to be present
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	
		No resources known to be at risk			No resources known to be at risk			No resources known to be at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	
		Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	
		Ever increasing height of defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure

Flooding in the 50 – 100 year epoch would inundate the freshwater SSSI of Ashleworth Ham. Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The 'With Present Management' policy (set by SMP1) for **MAI3 – East bank at Haw Bridge (B4213) to Upper Parting** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
No Policy Set	No Policy Set	No Policy Set	No Policy Set

No policy was set in the first round of SMPs because the upstream reaches of the Severn were considered to be primarily fluvial rather than estuarine, and therefore the definition of Strategic Shoreline Management Option for this unit was deemed not required.

The impact on the agreed objectives of all management policy options can be considered through the following table:

Policy Unit – Gloucester to Haw Bridge – East bank at Haw Bridge (B4213) to Upper Parting (MAI 3)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical Infrastructure: Electricity Network Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		
				Limited critical infrastructure present, some power lines; protected from flooding/erosion			Limited critical infrastructure present, some power lines; subject to increased inundation			Some local adverse affects within retreated area, land behind protected		
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agriculture Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		
				Land use predominantly agriculture (grazing with some arable). Protected from flooding and erosion			Agricultural land subject to inundation			Some local adverse affects within retreated area, land behind protected		
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	-		
				Severn Valley Way and other recreation assets protected			Severn Valley Way and other assets likely to be			Severn Valley Way possibly affected,		

					adversely affects			other assets protected
Wainlode Cliff SSSI Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils -including Geomorphology and Contaminated Land)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-			-			-
		Site maintained by fluvial erosion – if defences installed potential adverse effects to SSSI	No active intervention will ensure cliff face maintained			Impact likely to depend on alignment line		
National / Local Nature Conservation Sites: Coombe Hill Canal Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Terrestrial environment behind defences protected from flooding; However, there is no predicted flood risk to Coombe Hill Canal SSSI	Freshwater environment would be negatively affected by NAI if saline flooding was extensive in this unit. However, there is no predicted flood risk to Coombe Hill Canal SSSI			Impact would depend on alignment line		
Listed Buildings and sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Limited no of features in this reach	Limited no of features in this reach			Limited no of features in this reach		
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-			-	-	-	-
		Intertidal habitats lost to coastal squeeze	Intertidal habitats retained /increased; possible loss of habitats behind existing defences			Intertidal habitats retained/increased ; possible loss of habitats affected by retreated line		
Avoid/minimise environmental impacts which may have long term health impacts (including stress and	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would				-			

anxiety associated with flood and erosion risk (Population and Human Health)	reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Limited at risk population protected			Small population at increased risk			Overall flood risk will be reduced however some isolated properties may be affected
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No resources known to be present			No resources known to be present			No resources known to be present
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No resources known to be at risk			No resources known to be at risk			No resources known to be at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	●
		Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	-
		Ever increasing height of defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception)

		defences disrupting views	landscape due to potential changes in vegetation condition and structure	May be a local change to landscape due to potential changes in vegetation condition and structure
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Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The 'With Present Management' policy (set by SMP1) for **MAI4 – Upper Parting to Lower Parting (left bank of parting)** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Llanthony Weir to Lower Parting	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Upper Parting to Lower Parting (left bank of parting) shoreline can be compared with alternative management policies through the following table:

Policy Unit – Gloucester to Haw Bridge – Upper Parting to Lower Parting (left bank of parting) (MAI 4)												
Key Policy Drivers	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Critical Infrastructure: A417, A40, Rail inks, several electricity substations. Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it						-					
				Critical infrastructure protected			Critical infrastructure at risk from increased flooding			Impact will depend on alignment line; however very limited space in the reach, so likely to be adverse		
Residential: Gloucester City Centre and northern suburbs Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it						-					
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agriculture Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it						-					
				Economic assets including businesses within flood risk area of Gloucester protected			Increased flood risk over time			Impact will depend on alignment line; however very limited space in the reach, so		

								likely to be adverse
Heritage: Scheduled Monument and Listed building concentration at Gloucester Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	▲
		Few features within flood risk area; protected form flooding			Features at risk of flooding			Retreat of defences likely to affect
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	●
		Limited residential properties at risk			Limited residential properties at risk			Overall flood risk will be reduced however some isolated properties may be affected
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No resources known to be present			No resources known to be present			No resources known to be present
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No resources known to be at risk			No resources known to be at risk			No resources known to be at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to	-	▲	▲	-	-	-	●

	greater flooding. It could also trigger erosion, rather than reduce it							
		Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	-
		Increasing height of defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception)

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The 'With Present Management' policy (set by SMP1) for **MAI5 – Alney Island** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Lower Parting to Maisemore Weir (west channel)	Hold the Line	Hold the Line	Hold the Line
Llathony Weir to the Lower Parting (east channel)	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Alney Island shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Gloucester to Haw Bridge – Alney Island (MAI 5)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical Infrastructure: railway, A40 and A417 Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agriculture Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
				Limited asset present; assets protected			Limited asset present Assets at increase risk of flooding			Potentially some local adverse effects within retreated area, assets behind protected		
Residential: Isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
				Limited residential properties at risk			Limited residential properties at risk			Some local adverse affects within retreated area, properties behind protected		
Recreational sites: Local facilities, open space and footpath	N/A Advance the Line is considered to be an						-					

network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Severn Valley Way and other recreation assets protected			Severn Valley Way and other assets likely to be adversely affects			Severn Valley Way possibly affected, other assets protected
Nature Conservation: Alney Island LNR (Mainly neutral wet grassland and flood meadows with associated broadleaf trees) Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	▲	▲	▲
		No impact if current hydrological regime maintained			Increased saline intrusion could affect habitat composition of site			Retreat the line would result in loss of habitat
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No impact on freshwater habitats if current hydrological regime maintained. Loss of intertidal habitats to coastal squeeze			Loss of freshwater/terrestrial habitats; intertidal habitats maintained			Loss of freshwater/terrestrial habitats; intertidal habitats maintained
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	●
		Limited residential properties at risk/protected			Limited residential properties at risk/protected			
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No known assets at risk			No known assets at risk			No known assets at risk

No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No known features at risk			No known features at risk			No known features at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	●
		Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	-
		Ever increasing height of defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The 'With Present Management' policy (set by SMP1) for **MAI6 – Lower Parting to Severn Farm** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Lower parting to Rea	Hold the Line	Hold the Line	Hold the Line
Rea to Windmill Hill	Hold the Line, locally Do Nothing	Hold the Line, locally Do Nothing	Hold the Line, locally Do Nothing
Windmill Hill to east end of Elmore	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Lower Parting to Severn Farm shoreline can be compared with alternative management policies through the following table:

		Policy Unit – Gloucester to Haw Bridge – Lower Parting to Severn Farm (MAI 6)											
		Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
		0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers													
Residential: South Gloucester suburbs and Quedgeley Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-	-	-	-	-	-
Critical Infrastructure: transport network, Netheridge STW, A38 etc Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-								
		Significant infrastructure protected			Significant infrastructure at increased risk			Depends on alignment line – much of at risk infrastructure adjacent to river					
Theme Area High Level Objectives													
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health) Severn Valley Way, Gloucester & Sharpness Canal	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-								
		Assuming standard of protection			Flood risk will increase			Realignment will affect					

		maintained or increased positive impact as assets inc. Severn Valley Way and G&S canal will be protected						riverside recreation
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), activities and tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●		▲	▲	●
		Land use predominantly agricultural ; protected from flooding			Land use predominantly agricultural; flood risk will increase			Potentially some local adverse effects within retreated area, assets behind protected
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Limited features of interest			Limited features of interest			Limited features of interest
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	-
		No impact on freshwater habitats if current hydrological regime maintained. Loss of intertidal habitats to coastal squeeze			Loss of freshwater/terrestrial habitats; intertidal habitats maintained			Loss of freshwater/terrestrial habitats; intertidal habitats maintained
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	●
		Limited number of properties at risk/protected			Limited number of properties at risk			Limited number of properties affected by realignment; wider FRM benefits
	N/A	●	●	●	-	▲	▲	-

Water resources are protected (Water)	Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Gloucester Canal SW abstraction for Purton (Bristol Water). Not affected		Gloucester Canal SW abstraction for Purton (Bristol Water). Could be affected by increased flooding/erosion			Depends on alignment line ; impacts considered unlikely	
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	▲
		Active landfill site protected from flooding		Active landfill site at risk from flooding			Realignment in this reach could affect landfill	
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	●	●	●
		Can not raise height of defences indefinitely		Natural evolution of coast will accommodate climate change;			Managed retreat will accommodate climate change	
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	-
		Ever increasing height of defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views		Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure	

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

4.11 Gloucester to Sharpness Theme Area (SHAR)

The 'With Present Management' policy (set by SMP1) for **SHAR1 – Severn Farm to Wicks Green** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Elmore	Hold the Line	Hold the Line	Hold the Line or Retreat the Line
West end of Elmore to Wicksgreen	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Severn Farm to Wicks Green shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Gloucester to Sharpness –Severn Farm to Wicks Green (SHAR 1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0 - 20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agriculture / Countryside Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	●	●	-	▲	▲	●		
				Land use predominantly agriculture; continued protection from flooding ,			Agricultural land subject to inundation			Some local adverse affects within retreated area, land behind protected		
Residential: Elmore, Elmore Back, Farley's End and isolated properties Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		
				Isolated properties protected			Isolated properties at risk			Overall flood risk will be reduced however some isolated properties may be affected		
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	●	●	-	▲	▲	●		
				Severn Valley Way and other recreation assets protected			Severn Valley Way and other assets likely to be adversely affects			Severn Valley Way possibly affected, other assets protected		
Critical Infrastructure: Reduce significance of impact associated with	N/A Advance the Line is considered to be an			●	●	●	▲	▲	▲	●		

flooding and erosion to critical infrastructure (Population and Human Health)	unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Limited infrastructure at risk/protected – power lines only			Limited infrastructure at risk – power lines only			Some local adverse affects within retreated area, land behind protected
Sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	●	●	-	▲	▲	-
		Limited features within flood risk area some listed structures would be protected			Limited features within flood risk area some listed structures would be affected			Some local adverse affects within retreated area, features behind protected
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	▲
		Intertidal habitat lost to coastal squeeze			Intertidal habitat maintained; possibly some loss of terrestrial habitats			Intertidal habitat maintained; possibly some loss of terrestrial habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	●
		Isolated properties protected			Isolated properties at risk			Overall flood risk will be reduced however some isolated properties may be affected
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	-
		Gloucester Canal SW abstraction for Purton (Bristol Water). Not affected			Gloucester Canal SW abstraction for Purton (Bristol Water). Could be affected by increased			Depends on alignment line ; impacts considered unlikely

					flooding/erosion			
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No known features at risk			No known features at risk			No known features at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	●
		Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	-
		Ever increasing height of defences will affect local landscapes in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

The 'With Present Management' policy (set by SMP1) for **SHAR2 – Wicks Green to Longley Green** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Wicksgreen to Longley Crib	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Wicks Green to Longley Green shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Gloucester to Sharpness – Wicks Green to Longley Green (SHA 2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agricultural / Countryside Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	●	●	-	▲	▲	●		
				Primary land use is agriculture; land protected from flooding			Agricultural land at risk from increased flooding			Some local adverse affects within retreated area, land behind protected		
Residential: Waterend and Longney Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		
				Population in these area at risk; also isolated properties. Flood risk maintained or reduced			Population in these area at risk; also isolated properties. Flood risk will increase			Impacts will depend on alignment. Some adverse impacts in realignment area; wider population protected		
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. Severn Valley Way & G&S Canal (Population and Human Health)	/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		

		Severn Valley Way and other recreation assets protected			Severn Valley Way and other assets likely to be adversely affects			Severn Valley Way possibly affected, other assets protected
Critical Infrastructure: Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	●
		Limited critical infrastructure; some pylon lines; protected			Limited critical infrastructure; some pylon lines at risk			Impact depends on retreat line. Some local adverse affects within retreated area, land behind protected
Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No designated sites in this reach			No designated sites in this reach			No designated sites in this reach
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest at Waterend and Longney Reduce significance of impact to Scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	●
		Features protected from increased flooding			Features at increased risk from flooding			Some features within retreated area affected; those behind will have increased level of protection
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans Habitat Creation Opportunity in this reach	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	●	●	●
		Intertidal habitats lost to coastal squeeze			Opportunity for creation of intertidal habitats; possible loss of terrestrial habitats behind existing defences			Opportunity for creation of Intertidal habitats retained/increased ; possible loss of

								habitats behind existing defences
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-			
		Limited at risk population protected			Small population at increased risk		Overall flood risk will be reduced however some isolated properties may be affected	
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-			-
		Gloucester Canal SW abstraction for Purton (Bristol Water). Not affected			Gloucester Canal SW abstraction for Purton (Bristol Water). Could be affected by increased flooding/erosion		Depends on alignment line ; impacts considered unlikely	
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No known features at risk			No known features at risk		No known features at risk	
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-	-	-	
		Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property		Managed retreat will accommodate climate change	
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as				-	-	-	-

	it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Ever increasing height of defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views	Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure		

Summary

Advance the line has not been assessed due to the adverse impact on fluvial flood risk from restricting channel flow capacity.

Habitat creation opportunities are hampered only by holding the present shoreline. Whilst defences remain in place there is no impact on the habitat creation opportunity, where defences fail reinstallation or further maintenance of the defence becomes a hindrance to habitat creation. Policies No Active Intervention and Managed Realignment allow and create more potential over time for habitat creation.

The 'With Present Management' policy (set by SMP1) for **SHAR3 –Longley Green to Overton Lane** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Longney Crib to Priding Wick Court (left bank).	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Longley Green to Overton Lane shoreline can be compared with alternative management policies through the following table:

Policy Unit – Gloucester to Sharpness – Longley Green to Overton Lane (SHA 3)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical Infrastructure: Access Road to Overton Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agricultural / Countryside Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		
				Land use predominantly agriculture. Protected from flooding and erosion			Agricultural land subject to inundation			Some local adverse affects within retreated area, land behind protected		
Residential: Framilode, Priding, plus isolated properties Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			●	●	●	-	▲	▲	●		
				Assuming SoP is maintained or increased			Flood risk increases			Overall flood risk will be reduced however some isolated properties may be affected		
Recreational sites: Local facilities, open space and footpath network	N/A Advance the Line is considered to be an unsuitable policy for the			●	●	●	-	▲	▲	●		

Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Severn Valley Way Gloucester and Sharpness canal and other recreation assets protected			Severn Valley Way Gloucester and Sharpness canal and other assets likely to be adversely affects			Severn Valley Way Gloucester and Sharpness canal possibly affected, other assets protected
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	●
	Limited no of features in this reach	Limited no. of features in this reach. Listed structures in Saul			Limited no of features in this reach			Limited no of features in this reach
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	-
		Loss of intertidal habitat			Intertidal habitat maintained/increased; loss of terrestrial habitats			Intertidal habitats retained/increased ; possible loss of habitats affected by retreated line
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	●
		Assuming SoP is maintained or increased			Flood risk increases			Overall flood risk will be reduced however some isolated populations may be affected
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger	●	●	●	-	▲	▲	-

	erosion, rather than reduce it-							
		No known features at risk			No known features at risk			No known features at risk
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No known features at risk			No known features at risk			No known features at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	●	●	●
		Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	-
		Ever increasing height of defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure due to potential changes in vegetation condition and structure			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure

The 'With Present Management' policy (set by SMP1) **for SHAR4 – Overton Lane to upstream of Hock Cliff** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Pridding Wick court to Longmarsh Pill	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Overton Lane to upstream of Hock Cliff shoreline can be compared with alternative management policies through the following table:

Policy Unit – Gloucester to Sharpness – Overton Lane to upstream of Hock Cliff (SHA 4)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical Infrastructure: Electricity Transmission Network Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	●	●	-	▲	▲	-		
				Limited critical infrastructure present; some pylons and lines; protected from flooding			Limited critical infrastructure present; some pylons and lines			Depends on alignment position		
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agricultural / Countryside Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	●	●	-	▲	▲	▲		
Residential: Arlingham and isolated properties Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	●	●	-	▲	▲	●		
				Assuming SoP is maintained or increase			Flood risk increases			Overall flood risk will be reduced however some isolated		

								properties may be affected
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	●	●	-	▲	▲	●
	Severn Way and other recreational assets protected	Severn Way and other recreational assets protected			Severn Way and other features subject to increased flooding			Severn Valley Way possibly affected, other assets protected
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲	▲	●
		Land use predominantly agriculture. Protected from flooding and erosion			Agricultural land subject to inundation			Some local adverse affects within retreated area, land behind protected
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	●	●	-	▲	▲	●
		Listed structures in Alringham protected			Listed structures in Alringham at risk			Depends on alignment; few features within immediate river corridor
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	▲	▲	-	-	-	-
		No impact on freshwater habitats if			Loss of freshwater/terrestrial			Loss of

		current hydrological regime maintained. Loss of intertidal habitats to coastal squeeze			habitats; intertidal habitats maintained			freshwater/terrestrial habitats; intertidal habitats maintained
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) Parts of Arlingham and individual properties at risk (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	●	●	-	▲	▲	●
		At risk population remains protected			Increased flood risk			Limited number of properties affected by realignment; wider FRM benefits
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No known features			No known features			No known features
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No known features			No known features			No known features
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	●	●	●
		Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change;			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character	N/A Advance the Line is considered to be an	▲	▲	▲	-	-	-	-

(Landscape)	unsuitable policy for the upper Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Ever increasing height of defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views	Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure	Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure				

The 'With Present Management' policy (set by SMP1) for **SHAR5 – Hock Cliff** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Longmarsh Pill to Hock Ditch (left bank).	Do nothing	Do Nothing	Do Nothing

The impact on the agreed objectives of continuing with present management policy at the Hock Cliff shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Gloucester to Sharpness – Hock Cliff (SHA 5)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Theme Area High Level Objectives												
National Geological Nature Conservation Hock Cliff To allow natural processes and to maintain the visibility of geological exposure throughout the SSSI	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			▲	▲	▲	●	●	●	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
Residential: Fretherne Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				No at risk population			No at risk population					
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				None present			None present					
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		
				None present			None present					
Critical Infrastructure: Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered		

Health)							
		None present			None present		
Listed Buildings and non-designated sites of historic interest at Fretherne Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-
		None present			None present		
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	▲	▲	-	▲	▲
		Intertidal habitat lost to coastal squeeze			High ground will prevent roll back of habitats – intertidal habitat lost to coastal squeeze		
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-
		No at risk population			No at risk population		
Water resources are protected (Water)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-
		No features at risk			No features at risk		
No detriment to water quality (Water)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-
		No features at risk			No features at risk		
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	▲	▲	▲	-	-	-
		Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property		
Avoid detrimental effects to landscape character (Landscape)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-
		High resistant feature, landscape unlikely to change significantly			High resistant feature, landscape unlikely to change significantly		

Summary

Hock Cliff is the primary feature of this Policy Unit, dominating future landscape character. The shoreline is currently not defended and is stable. Additional features of the Policy Unit - residential developments, commercial property or historic sites - are not affected by the management of the shoreline.

The 'With Present Management' policy (set by SMP1) for **SHAR6 – downstream of Hock Cliff to Frampton Pill** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Hock Cliff to Frampton Breakwater	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the downstream of Hock Cliff to Frampton Pill shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Gloucester to Sharpness – downstream of Hock Cliff to Frampton Pill (SHA6)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Designations: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact on internationally designated sites and the favourable condition of their features	▲				▲		▲			▲		
	Loss of intertidal habitat			Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss		
Theme Area High Level Objectives												
Residential: Frampton on Severn Reduce significance of impact associated with flooding and erosion to people and property	●			-	-	●	-	-		▲		
Recreational sites: Open space and footpath network including the Severn Way and G&S canal. Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	●			●	●	●	-	▲	▲	▲		
	Features protected from flooding			Features protected from flooding			Features at risk			Depends on alignment, but features likely to be affected		
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including	●			●	●	●	-	▲	▲	●		

tourism) (Population and Human Health)								
	Primary land use is agriculture. Assets protected	Assets protected			Assets at risk			Some local adverse affects within retreated area, land behind protected
Local Infrastructure: Reduce significance of impact associated with flooding and erosion to critical infrastructure Frampton STW and power lines, Gloucester to Sharpness Canal (Population and Human Health)	●	●	●	●	-	▲	▲	●
	Infrastructure protected	Infrastructure protected			Infrastructure at risk			Depends on alignment. Some local adverse effects within retreated area, features behind protected
National nature conservation: Severn Estuary SSSI. Frampton Pools unaffected Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	▲		▲	▲	-	-	-	
	Intertidal habitat loss	Intertidal habitat loss to coastal squeeze			Roll back of habitats permitted so status quo maintained			Depends on alignment; likely to be neutral or positive
Historic Park and Garden: Frampton Court Listed Buildings and sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	●	●	●	●	-	▲	▲	-
	Density of listed buildings around Frampton; protected form flooding	Density of listed buildings around Frampton; protected form flooding			Density of listed buildings around Frampton; at risk from flooding Frampton Court not in flood risk area			Depends on alignment
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	-	-	▲	▲	-	-	-	-
	Intertidal habitat lost; terrestrial habitat gained	Intertidal habitat lost to coastal squeeze			Intertidal habitat maintained; possibly some loss of terrestrial habitats			Intertidal habitat maintained; possibly some loss of terrestrial habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk). Frampton and Saul at risk (Population and Human Health)	●	●	●	●	-	▲	▲	▲

	Flood risk maintained or reduced	Flood risk maintained or reduced			Flood risk will increase over time			Depends on alignment, but limited space so likely to be negative
Water resources are protected (Water)	●	●	●	●	-	▲	▲	▲
	Gloucester Canal Severn Water abstraction for Purton (Bristol Water). Not affected	Gloucester Canal Severn Water abstraction for Purton (Bristol Water). Not affected			Gloucester Canal Severn Water abstraction for Purton (Bristol Water). Could be affected by increased flooding/erosion			Depends on alignment line ; but limited space so likely to be negative
No detriment to water quality (Water)	-	-	-	-	-	-	-	-
	No known features at risk	No known features at risk			No known features at risk			No known features at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Can not raise height of defences indefinitely	Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)		▲	▲	▲	-	-	-	-
		Ever increasing height of defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structures			Increased frequency of flooding may alter the local landscape (whether positive or negative depends on perception) May be a local change to landscape due to potential changes in vegetation condition and structure

Summary

The shoreline defence fails in the 20 to 50 year epoch, although residential properties become at risk from flooding between 50 and 100 years.

The intertidal zone downstream from Hock Cliff, to Frampton Pill, is currently in an unfavourable condition according to it's inclusion in international and national conservation designations as a result of coastal squeeze. Holding the Line as a policy for this unit has been considered to have a negative impact on meeting the objective to "Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features" as sea level rise will exacerbate the situation over time.

The 'With Present Management' policy (set by SMP1) for **SHAR7 – Frampton Pill to Royal Drift Outfall** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Frampton Breakwater to The Dumbles	Hold the Line	Hold the Line or Retreat the Line	Hold the Line or Retreat the Line
The Royal Drift	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Frampton Pill to Tites Point shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Gloucester to Sharpness – Frampton Pill to Tites Point (SHA 7)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Designations: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Loss of intertidal habitat			Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss		
Critical Infrastructure: Electricity Network, Sewerage Treatment Works Reduce significance of impact associated with flooding and erosion to critical infrastructure												
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agriculture Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)							-					
	Agriculture is main land use; land protected from flooding and erosion			Agriculture is main land use; land protected from flooding and erosion			Agriculture is main land use; flood risk will increase			Some local adverse affects within retreated area, land elsewhere protected		

<p>Recreation: inc. Sharpness to Gloucester Canal and Severn Valley Way , Slimbridge wetland centre. Reduce significance of impact associated with flooding and erosion to critical infrastructure</p>	●	●	●	●	-	▲	▲	-
	Features protected from flooding	Features protected from flooding			Features at risk			Depends on alignment, but features likely to be affected
<p>Residential: Slimbridge and Isolated residential developments Reduce significance of impact associated with flooding and erosion to people and property Small communities and isolated properties</p>	●	●	●	●	-	▲	▲	-
	Property protected from flooding	Property protected from flooding			Flood risk will increase			Some local adverse affects within retreated area, property elsewhere protected
<p>Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)</p>	●	●	●	●	-	▲	▲	
<p>Infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)</p>	●	●	●	●	-	▲	▲	-
<p>Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. Severn SSSI (Biodiversity, Flora and Fauna)</p>	▲	-	▲	▲	-	-	-	-
	Intertidal habitat loss	Intertidal habitat loss to coastal squeeze			Roll back of habitats permitted so status quo maintained			Depends on alignment; likely to be neutral or positive
<p>Scheduled Monuments, Listed</p>	-	●	●	●	-	▲	▲	-

Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)								
	No features of major significance; onshore features protected	No features of major significance; features protected			No features of major significance; feature sat risk or increased flooding			No features of major significance
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans. Potential habitat creation site	-	-	▲	▲	-	-	-	-
	Intertidal habitat lost; terrestrial habitat gained	Intertidal habitat lost to coastal squeeze			Intertidal habitat maintained; possibly some loss of terrestrial habitats			Intertidal habitat maintained; possibly some loss of terrestrial habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	●	●	●	-	▲	▲	-
Water resources are protected (Water)	●	●	●	●	-	▲	▲	▲
	Gloucester Canal Severn Water abstraction for Purton (Bristol Water). Not affected	Gloucester Canal Severn Water abstraction for Purton (Bristol Water). Not affected			Gloucester Canal Severn Water abstraction for Purton (Bristol Water). Could be affected by increased flooding/erosion			Depends on alignment line ; but limited space so likely to be negative
No detriment to water quality (Water)	-	●	●	●	-	▲	▲	-
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Can not raise height of defences indefinitely	Can not raise height of defences indefinitely			Natural evolution of coast will accommodate climate change; possible impact to people and property			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on

	landscape): also a visual impact with defences disrupting views.		changes in vegetation structure.	perception). May be a local change to landscape due to potential changes in vegetation structure.
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Summary

As low lying areas with residential, commercial/industrial and key community facilities are at flood risk, to hold the line or advance the line would be beneficial for the assets and meet the set objectives.

The 'With Present Management' policy (set by SMP1) for **SHAR8 – Royal Drift Outfall to Sharpness Docks** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Tites Point to South Ridge Sand	Hold the Line	Hold the Line	Hold the Line
Sharpness (north)	Hold the Line	Hold the Line	Hold the Line
Sharpness (west)	Hold (locally) / Do nothing (locally)	Hold the Line (locally), Do Nothing (locally)	Hold the Line (locally), Do Nothing (locally)

The impact on the agreed objectives of continuing with present management policy at the Royal Drift Outfall to Sharpness Docks shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Gloucester to Sharpness – Royal Drift outfall to Sharpness Docks (SHA 8)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment			
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	
Key Policy Drivers													
International Nature Conservation Designations: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-					-				
	Loss of intertidal habitat			Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			
Critical infrastructure: Docks, Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	-			-	-	-	-	-	-				
	Critical infrastructure not at risk from flooding.			Critical infrastructure not at risk from flooding.			Critical infrastructure not at risk from flooding.			Impact will depend on alignment line. However there is limited space in the reach so adverse impacts are likely.			
Theme Area High Level Objectives													
Industrial, commercial and economic assets: Agriculture, Docks and related Industry Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	-			-	-	-	-	-	-				
	Assets not at risk from flooding.			Assets not at risk from flooding.			Assets not at risk from flooding.			Impact will depend on alignment line. However there is limited space in the reach so adverse impacts are likely.			

<p>Recreational sites: Local facilities, open space and footpath network including the Severn Way and Gloucester to Sharpness canal Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)</p>	-	-	-	-	-	-	-	▲
	Assets not at risk from flooding.	Assets not at risk from flooding.			Assets not at risk from flooding.			Impact will depend on alignment line. However there is limited space in the reach so adverse impacts are likely.
<p>Residential: Isolated residential developments Reduce significance of impact associated with flooding and erosion to people and property</p>	-	-	-	-	-	-	-	▲
	Residential properties not at risk of flooding.	Residential properties not at risk of flooding.			Residential properties not at risk of flooding.			Impact will depend on alignment line. However there is limited space in the reach so adverse impacts are likely.
<p>Local infrastructure: Gloucester and Sharpness Canal Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)</p>	-	-	-	-	-	-	-	▲
	Infrastructure not at risk from flooding.	Infrastructure not at risk from flooding.			Infrastructure not at risk from flooding.			Impact will depend on alignment line. However there is limited space in the reach so adverse impacts are likely.
<p>Purton Passage SSSI Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils - including Geomorphology and Contaminated Land)</p>	▲	▲	▲	▲	●	●	●	-
	Cliff face will no longer be exposed to natural processes				Cliff face will continue to erode			Impact will depend on alignment line. Cliff face is unlikely to be excavated and the coastline moved backwards.
<p>National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>	▲	-	▲	▲	-	▲	▲	▲

	Loss of intertidal habitat	Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	-	-	-	-	-	-	-	▲
	Historical assets not at risk of flooding.	Historical assets not at risk of flooding.			Historical assets not at risk of flooding.			Impact will depend on alignment line. However there is limited space so could be adverse impacts to listed buildings at Sharpness or the milepost between Sharpness and Purton.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans. Potential habitat creation site	-	-	▲	▲	-	-	-	-
	Intertidal habitat lost; terrestrial habitat gained	Intertidal habitat lost to coastal squeeze			Intertidal habitat maintained; possibly some loss of terrestrial habitats			Intertidal habitat maintained; possibly some loss of terrestrial habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	-	-	-	-	-	-	▲
	Residential properties not at risk of flooding.	Residential properties not at risk of flooding.			Residential properties not at risk of flooding.			Impact will depend on alignment line. However there is limited space in the reach so adverse impacts are likely.
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No sources at risk of flooding.	No sources at risk of flooding.			No sources at risk of flooding.			No sources at risk.
No detriment to water quality (Water)	-	-	-	-	-	-	-	-
	Water quality not at risk.	Water quality not at risk.			Water quality not at risk.			Water quality not at risk.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to

	impact with defences disrupting views.	defences disrupting views.	potential changes in vegetation structure.	landscape due to potential changes in vegetation structure.
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4.12 Sharpness to Severn Crossings Theme Area (SEV)

The 'With Present Management' policy (set by SMP1) for **SEV1 – South of Sharpness Docks to Bull Rock** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Sharpness (west)	Hold (locally) / Do nothing (locally)	Hold the Line (locally), Do Nothing (locally)	Hold the Line (locally), Do Nothing (locally)
South of Sharpness Docks to Berkley Pill	Hold the Line	Hold the Line	Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the South of Sharpness Docks to Bull Rock shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Sharpness to Severn Crossings – South of Sharpness docks to Bull Rock (SEV 1)													
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment				
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100		
Key Policy Drivers														
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-					-					
	Loss of intertidal habitat			Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss				
Critical Infrastructure: Sharpness Sewerage Treatment Works Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)				-					-					
	Asset protected.			Asset protected.			Asset at an increased risk of flooding.			Impact will depend on alignment line. However adequate space to select alignment so impact on STW is not likely.				
Theme Area High Level Objectives														
Residential: Isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)				-										
	Residential properties protected.			Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line. Adverse impacts likely to isolated properties.				
Recreational sites:				-										

<p>Local facilities, open space and footpath network including the Severn Way Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)</p>								
	Assets protected.	Assets protected.			Assets at an increased risk of flooding.			Impact will depend on alignment line. Adverse impacts likely because Severn Way runs along coast.
<p>Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)</p>	●	-	●	●	-	▲	▲	▲
	Assets protected.	Assets protected.			Assets at an increased risk of flooding.			Impact will depend on alignment line. Adverse impacts likely because Severn Way runs along coast.
<p>National nature conservation sites: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>	▲	-	▲	▲	-	▲	▲	▲
	Loss of intertidal habitat	Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss
<p>Listed Buildings and non-designated sites of historic interest. Listed buildings Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)</p>	●	●	●	●	-	▲	▲	-
	Limited historic assets – assets protected.	Limited historic assets – assets protected.			Limited historic assets – assets at an increased risk of flooding.			Limited historical assets. Impact will depend on realignment but there is unlikely to be an adverse impact.
<p>Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans. Potential habitat creation site</p>	-	-	▲	▲	-	-	-	-
	Intertidal habitat lost; terrestrial habitat gained	Intertidal habitat lost to coastal squeeze			Intertidal habitat maintained; possibly some loss of terrestrial habitats			Intertidal habitat maintained; possibly some loss of terrestrial habitats

Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	●	-	●	●	▲	▲	▲	▲
	Residential properties protected.	Residential properties protected.	Residential properties protected.	Residential properties protected.	Residential properties at an increased risk of flooding.	Residential properties at an increased risk of flooding.	Residential properties at an increased risk of flooding.	Residential properties at an increased risk of flooding.
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.
No detriment to water quality (Water) Sharpness STW	●	-	●	●	▲	▲	▲	-
	Asset protected so no risk to water quality.	Asset protected so no risk to water quality.	Asset protected so no risk to water quality.	Asset protected so no risk to water quality.	Asset at increased risk of flooding so there could be water quality issues associated with the flooding of the STW.	Asset at increased risk of flooding so there could be water quality issues associated with the flooding of the STW.	Asset at increased risk of flooding so there could be water quality issues associated with the flooding of the STW.	Asset at increased risk of flooding so there could be water quality issues associated with the flooding of the STW.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.

Summary

As low lying areas with residential, commercial/industrial and key community facilities are at flood risk, to hold the line or advance the line would be beneficial for the assets and meet the set objectives.

The 'With Present Management' policy (set by SMP1) for **SEV2 – Bull Rock to southern boundary of Berkeley Power Station** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Berkley Power Station	Hold the Line	Hold the Line	Hold the Line / Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Bull Rock to southern boundary of Berkeley Power Station shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Sharpness to Severn Crossings –Bull Rock to southern boundary of Berkley power station (SEV 2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Industrial, commercial and economic assets: Berkeley Power Station and Associated Infrastructure Reduce significance of impact associated with flooding and erosion to critical infrastructure							-					
	Assets protected.			Assets protected.			Assets at risk of some (limited) flooding.			Impact will depend on alignment line. However there is very limited space in this reach so adverse impacts are likely.		
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Loss of intertidal habitat			Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss		
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)							-					
	Assets protected.			Assets protected.			Assets at risk of some (limited) flooding.			Impact will depend on alignment line. However there is very limited space in this reach so adverse impacts are likely.		

<p>National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>		-			-			
	Loss of intertidal habitat	Coastal squeeze; intertidal habitat loss	Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss		
<p>Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Listed buildings south of Berkley Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)</p>					-			-
	Limited historic assets – assets protected.	Limited historic assets – assets protected.	Limited historic assets – assets at an increased risk of flooding.			Limited historical assets. Impact will depend on realignment but there is unlikely to be an adverse impact.		
<p>Residential: residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)</p>		-						
	Residential properties protected.	Residential properties protected.	Residential properties at an increased risk of flooding.			Impact will depend on alignment line. Adverse impacts likely to isolated properties.		
<p>Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans. Potential habitat creation site</p>	-	-			-	-	-	-
	Intertidal habitat lost; terrestrial habitat gained	Intertidal habitat lost to coastal squeeze	Intertidal habitat maintained; possibly some loss of terrestrial habitats			Intertidal habitat maintained; possibly some loss of terrestrial habitats		
<p>Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)</p>								
	Residential properties and power station protected.	Residential properties and power station protected.	Residential properties and power station at an increased risk of flooding.			Impact will depend on alignment line. Adverse impacts likely to power station and isolated properties.		
<p>Water resources are protected (Water)</p>	-	-	-	-	-	-	-	-
	No resources known to be	No resources known to be	No resources known to be at			No resources known to		

	at risk.	at risk.	risk.	be at risk.
No detriment to water quality (Water) Berkley nuclear Power Station				-
	Asset protected so no risk to water quality.	Asset protected so no risk to water quality.	Asset at increased risk of flooding so there could be water quality issues associated with the flooding of the STW.	Impact will depend on alignment line. However adequate space to select alignment so adverse impact on Berkley Power station is likely. This could potentially cause water quality issues.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)			- - -	
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)			- - -	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.

Summary

The defences fronting Berkeley Power Station have a residual life of 20 – 50 years. Current Policy is to Hold the Line. In order to continue to meet the objective to protect the power station from flooding and erosion Hold the Line is the preferred policy. The power station is protected from flooding and erosion by the current defences over the first epoch (0 – 20 years).

Stress and anxiety of the local population and the preservation of water quality are linked directly to the protection of the power station.

The 'With Present Management' policy (set by SMP1) for **SEV3 – southern boundary of Berkley power station to Oldbury Power station** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
South of Berkley Power Station to Chapel House	Hold the Line	Hold the Line	Hold the Line / Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the southern boundary of Berkley power station to Oldbury Power station shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Sharpness to Severn Crossings –southern boundary of Berkley power station to Oldbury Power station (SEV 3)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Industrial, commercial and economic assets: Assets of adjacent PUs (Power Stations), and Agriculture Reduce significance of impact associated with flooding and erosion to critical infrastructure	●			●	●	●	-		▲	▲		▲
	Agricultural land protected.			Agricultural land protected.			Agricultural land at risk of flooding.			Impact will depend on alignment line. However; adequate space to select alignment so likely adverse impact on agricultural land.		
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	▲			-	▲	▲	-	▲	▲			▲
	Loss of intertidal habitat			Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss		
Theme Area High Level Objectives												
Residential: Isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	●			●	●	●	▲	▲	▲			▲
	Residential properties protected.			Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line. Adverse impacts likely to isolated properties.		
Recreational sites: Local facilities, open space and footpath network including the Severn Way Reduce significance of	●			●	●	●	▲	▲	▲			▲

impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)								
	Assets protected.	Assets protected.			Assets at an increased risk of flooding.			Impact will depend on alignment line. Adverse impacts likely because Severn Way runs along coast.
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	●	●	●	●	-	▲	▲	▲
Critical infrastructure: Local road and path network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	●	●	●	●	-	▲	▲	-
	Assets protected.	Assets protected.			Assets at an increased risk of flooding.			Impact will depend on alignment line. May be an adverse impact.
National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	▲	-	▲	▲	-	▲	▲	▲
	Loss of intertidal habitat	Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss
Listed Buildings and non-designated sites of historic interest. Listed buildings. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	●	●	●	●	-	▲	▲	▲
	Listed buildings protected.	Listed buildings protected.			Listed buildings at risk of increased flooding.			Impact will depend on alignment line. May be an adverse impact on listed buildings adjacent to the coast.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans. Potential habitat creation site	-	-	▲	▲	-	-	-	-

	Intertidal habitat lost; terrestrial habitat gained	Intertidal habitat lost to coastal squeeze			Intertidal habitat maintained; possibly some loss of terrestrial habitats			Intertidal habitat maintained; possibly some loss of terrestrial habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	●	●	●	●	▲	▲	▲	▲
	Residential properties protected.	Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line. Adverse impacts likely to isolated properties.
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water)	-	-	-	-	-	-	-	-
	No known water quality risks.	No known water quality risks.			No known water quality risks.			No known water quality risks.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.

Summary

Agriculture is the dominant economic activity at the shoreline from the southern boundary of Berkley Power Station to the northern boundary of Oldbury Power Station. To advance the line is theoretically a positive step for the industry over the SMP2 timeframe as the total area of agricultural land could be increased.

The protection from flooding and erosion of nationally significant power stations at either end of this Policy Unit are key drivers for the setting of policy at the shoreline. Both power stations are within the flood cells of this Policy Unit.

For historic environment assets to advance the line would have a negative impact. Some assets are marine based, and the physical advancement of the line is likely to disturb or destroy the sites. To hold the line will have a positive impact post 2050 as defences under no active intervention will have failed if the line is not held, leaving the sites vulnerable to flooding and erosion.

The 'With Present Management' policy (set by SMP1) for **SEV4 – Oldbury Power Station** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Chapel House to Oldbury Power Station	Hold the Line	Hold the Line	Hold the Line of Retreat the Line

The impact on the agreed objectives of continuing with present management policy at Oldbury Power Station shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Sharpness to Severn Crossings –Oldbury power station (SEV 4)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Industrial, commercial and economic assets: Oldbury Power Station, Agriculture, set back behind power station Reduce significance of impact associated with flooding and erosion to critical infrastructure	●			●	●	●	-		▲	▲	▲	
	Power station and agricultural land protected.			Power station and agricultural land protected.			Agricultural land at risk of flooding. Power station on higher ground so not at risk from flooding.			Impact will depend on alignment line. However; adequate space to select alignment so likely adverse impact on agricultural land.		
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features (Biodiversity, Flora and Fauna)	▲			-	▲	▲	-	▲	▲	▲		
	Loss of intertidal habitat			Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss		
Critical infrastructure: Tidal Reservoir fronting Power Station Reduce significance of impact associated with flooding and erosion to critical infrastructure	▲			●	●	●	-	●	●			
	This would impact on the refill of the tidal reservoir.			Tidal reservoir not impeded from refilling. Power station is not at risk of flooding.			Tidal reservoir not impeded from refilling. Power station is not at risk of flooding.			N/A		
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets	●			●	●	●	-	▲	▲			

(including agricultural), and activities (including tourism) (Population and Human Health)								
National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	▲	-	▲	▲	-	▲	▲	▲
	Loss of intertidal habitat	Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss
Listed Buildings and non-designated sites of historic interest. Listed buildings. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	●	●	●	●	-	▲	▲	-
	Historical assets protected from flooding.	Historical assets protected from flooding.			Historical at risk from increased flooding.			Impacts depend on alignment line. Assets are set back from the coast so are unlikely to be adversely impacted.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans. Potential habitat creation site	-	-	▲	▲	-	-	-	-
	Intertidal habitat lost; terrestrial habitat gained	Intertidal habitat lost to coastal squeeze			Intertidal habitat maintained; possibly some loss of terrestrial habitats			Intertidal habitat maintained; possibly some loss of terrestrial habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	●	●	●	●	-	▲	▲	▲
	Assets protected.	Assets protected.			Assets at an increased risk of flooding.			Impacts depend on alignment line. Retreat is likely to be perceived negatively.
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water) Historic Landfill sites adjacent to Oldbury Power Station.	●	●	●	●	-	▲	▲	▲
	Landfill site protected so no risk to water quality.	Landfill site protected so no risk to water quality.			Landfill site at risk of increased flooding so there could be water quality issues associated with the			Impact will depend on alignment line. However adequate space to select alignment so adverse

					flooding of the STW.		impact on the historic landfill site is likely. This could potentially cause water quality issues.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	●
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.		Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.		Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.

Summary

The protection from flooding and erosion of nationally significant power station at Oldbury is a key driver for the setting of policy at the shoreline. Although the majority of this unit benefits from high ground, the impact of flooding or erosion on the power station would have a major impact.

The 'With Present Management' policy (set by SMP1) for **SEV5 – Oldbury power station to Littleton Warth** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Oldbury to Littleton	Hold the Line	Hold the Line	Hold the Line of Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Oldbury power station to Littleton Warth shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Sharpness to Severn Crossings – Oldbury power station to Littleton Warth (SEV 5)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	▲			-	▲		▲		▲		▲	
	Loss of intertidal habitat			Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss		
Theme Area High Level Objectives												
Residential: Oldbury on Severn Isolated properties Reduce significance of impact associated with flooding and erosion to people and property	●			-	●		▲		▲		▲	
	Residential properties protected.			Residential properties protected.			Residential properties at an increased risk of flooding.			Impact will depend on alignment line. However space in the reach is not very limited so adverse impacts on large residential areas is unlikely. Isolated properties may be impacted.		
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	●			-	●		▲		▲		▲	
	Agricultural land protected.			Agricultural land protected.			Agricultural land at risk of flooding.			Impact will depend on alignment line. However; adequate space to select alignment so likely adverse impact on agricultural land.		

<p>Recreational sites: Local facilities, open space and footpath network including the Severn Way Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)</p>	●	-	●	●	▲	▲	▲	▲
	Assets protected.	Assets protected.	Assets protected.		Assets at an increased risk of flooding.		Impact will depend on alignment line. Adverse impacts likely because Severn Way runs along coast.	
<p>Local infrastructure: Local road and paths network Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)</p>	-	-	-	-	-	-	-	-
	No assets at risk.	No assets at risk.	No assets at risk.		No assets at risk.		No assets at risk.	
<p>National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>	▲	-	▲	▲	-	▲	▲	▲
	Loss of intertidal habitat	Coastal squeeze; intertidal habitat loss	Habitat roll back; intertidal habitats retained; terrestrial habitat loss		Habitat roll back; intertidal habitats retained; terrestrial habitat loss		Habitat roll back; intertidal habitats retained; terrestrial habitat loss	
<p>Scheduled Monuments: At Oldbury on Severn Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)</p>	●	-	●	●	-	▲	▲	-
	Historical assets protected.	Historical assets protected.	Historical assets are at an increased risk of flooding.		Impacts will depend on realignment but it is likely that historical assets will be protected as they are set back from the coast.			
<p>Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans. Potential habitat creation site</p>	-	-	▲	▲	-	-	-	-
	Intertidal habitat lost; terrestrial habitat gained	Intertidal habitat lost to coastal squeeze	Intertidal habitat maintained; possibly some loss of terrestrial habitats		Intertidal habitat maintained; possibly some loss of terrestrial habitats			
<p>Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with</p>	●	-	●	●	-	▲	▲	▲

flood and erosion risk) (Population and Human Health)								
	Residential properties protected.	Residential properties protected.	Residential properties at an increased risk of flooding.	Impact will depend on alignment line. However space in the reach is not very limited so adverse impacts on large residential areas is unlikely. Isolated properties may be impacted.				
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.				
No detriment to water quality (Water)	-	-	-	-	-	-	-	-
	No water quality risks identified.	No water quality risks identified.	No water quality risks identified.	No water quality risks identified.				
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change: possible impact to people and property.	Managed retreat will accommodate climate change.				
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.				

Summary

Agriculture is the dominant economic activity at the shoreline from the southern boundary of Berkley Power Station to the northern boundary of Oldbury Power Station. To advance the line is theoretically a positive step for the industry over the SMP2 timeframe as the total area of agricultural land could be increased.










The protection from flooding and erosion of nationally significant power stations at either end of this Policy Unit are key drivers for the setting of policy at the shoreline. Both power stations are within the flood cells of this Policy Unit.

For historic environment assets to advance the line would have a negative impact. Some assets are marine based, and the physical advancement of the line is likely to disturb or destroy the sites. To hold the line will have a positive impact post 2050 as defences under no active intervention will have failed if the line is not held, leaving the sites vulnerable to flooding and erosion.

The 'With Present Management' policy (set by SMP1) for **SEV6 – Littleton Warth to Aust Ferry** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Aust Cliff to Old Passage	Do nothing (locally hold)	Do Nothing, locally Hold the Line	Do Nothing, locally Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Littleton Warth to Aust Ferry shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Sharpness to Severn Crossings – Littleton Warth to Aust Ferry (SEV 6)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical Infrastructure: M48 Road Crossing and Services, Power Line Crossing and Substation Reduce significance of impact associated with flooding and erosion to critical infrastructure	-			-	-	-	-	-	-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Very little at risk from tidal flooding via this frontage; no impact			Very little at risk from tidal flooding via this frontage; no impact			Very little at risk from tidal flooding via this frontage; no impact					
International Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Loss of intertidal habitat			Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss					
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	-			-	-	-	-	-	-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Agriculture is main land use; not at risk from tidal flooding via this frontage; no impact			Agriculture is main land use; not at risk from tidal flooding via this frontage; no impact			Agriculture is main land use; not at risk from tidal flooding via this frontage; no impact					
Aust Cliff SSSI Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils - including Geomorphology and				--	-	-						N/A High ground / hard geology precludes physical retreat of the line, option not considered

Contaminated Land)							
	Advancing the line would mean exposure was no longer subject to natural erosion processes	Assuming the defences did not adversely affect the cliff and were located behind it natural processes would be maintained.			Natural processes would be maintain		
Residential: Aust and isolated residential properties Reduce significance of impact associated with flooding and erosion to people and property	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Residential properties not at risk of tidal flooding via this frontage; no impact	Residential properties not at risk of tidal flooding via this frontage; no impact			Residential properties not at risk of tidal flooding via this frontage; no impact		
Recreational sites: Local facilities, open space and footpath network including the Severn Way Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	-	-	-	-	-	-	N/A
	Open space and footpath network are not at risk of tidal flooding via this frontage; no impact	Open space and footpath network are not at risk of tidal flooding via this frontage; no impact			Open space and footpath network are not at risk of tidal flooding via this frontage; no impact		
National nature conservation sites: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	▲	-	▲	▲	-	▲	▲
	Loss of intertidal habitat	Coastal squeeze; intertidal habitat loss			Habitat roll back; intertidal habitats retained; terrestrial habitat loss		
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	-	-	-	-	-	-	N/A
	No historical assets identified.	No historical assets identified.			No historical assets identified.		
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans. Potential habitat creation site	-	-	▲	▲	-	-	-
	Intertidal habitat lost; terrestrial habitat gained	Intertidal habitat lost to coastal squeeze			Intertidal habitat maintained; possibly some loss of terrestrial habitats		
Avoid/minimise environmental impacts which may have long term health impacts (including stress and	-	-	-	-	-	-	N/A

anxiety associated with flood and erosion risk) (Population and Human Health)								
	No risk of flooding from this frontage.	No risk of flooding from this frontage.			No risk of flooding from this frontage.			
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water)	-	-	-	-	-	-	-	-
	No water quality risks identified.	No water quality risks identified.			No water quality risks identified.			No water quality risks identified.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Cannot raise the height of the defences indefinitely.	Cannot raise the height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change: possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	-
	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing the height of the defence will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation structure.

Summary

The negative impact on heritage features of advancing the line is entirely based on the impact on the Aust Ferry Site; all other heritage sites would undergo no impact to the advancement of the shoreline.

4.13 Severnside to Bristol and Avon Theme Area (BRIS)

The 'With Present Management' policy (set by SMP1) for BRIS1 – Aust Ferry (site of) to New Passage – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Old Passage to new Passage	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Aust Ferry (site of) to New Passage shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Bristol and Severnside Aust Ferry (site of) to New Passage (BRIS 1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical infrastructure: Power Line Crossing, M4 and M48, Severn Tunnels, Bedwick STW To manage the risk of flooding and erosion to critical infrastructure.							-					
	Infrastructure protected.			Infrastructure protected.			Infrastructure at risk from flooding.			Impact will depend on alignment line: however adequate space to select alignment so unlikely to be an adverse impact.		
International Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA Avoid significant impact on the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Coastal squeeze will occur			Coastal squeeze will occur			Habitats will roll back, intertidal habitats maintained; however potentially some loss of terrestrial habitats.			Habitats will roll back, intertidal habitats maintained; however potentially some loss of terrestrial habitats.		
Theme Area High Level Objectives												
Industrial, commercial and economic assets: Agriculture Reduce significance of impact associated with flooding and erosion to industrial, commercial and				-			-					

economic assets (including agricultural), and activities (including tourism)								
	Land use predominantly agricultural. Agricultural assets will be protected.	Agricultural assets will be protected.			Agricultural assets will be at an increased risk of flooding.			Impact will depend on alignment line: space in the reach is not very limited due to land being used for agriculture. There may be an adverse impact
Residential: Isolated residential developments at Northwick and Redwick Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)					-			-
	Residential properties protected.	Residential properties protected.			Residential properties are at risk from flooding.			Impact will depend on alignment line: however adequate space to select alignment so unlikely to be adverse impact.
Recreational sites: Local facilities, open space and footpath network including the Severn Way Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)					-			-
	Recreational sites including the Severn Way will be protected.	Recreational sites including the Severn Way will be protected.			Recreational sites including the Severn Way will be at an increased risk of flooding.			Impact will depend on alignment line: however adequate space to select alignment so unlikely to be adverse impact.
National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)		-			-			
	Coastal squeeze will occur	Coastal squeeze will occur			Habitats will roll back, intertidal habitats maintained; however potentially some loss of terrestrial habitats.			Habitats will roll back, intertidal habitats maintained; however potentially some loss of terrestrial habitats.

Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	●	● - ●	●	-	▲	▲	-
	Limited no of features of note; historical assets will be protected.	Historical assets will be protected.		Historical assets will be at am increased risk of flooding.		Impact will depend on alignment line: however adequate space to select alignment so unlikely to be adverse impact.	
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	▲	-	▲	▲	-	-	-
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.		Intertidal habitats retained /increased; possible loss of habitats behind existing defences		Intertidal habitats retained/increased ; possible loss of habitats affected by retreated line	
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	●	-	●	●	-	▲	▲
	Limited number of residential properties; residential properties protected.	Residential properties protected.		Residential properties are at risk from flooding.		Impact will depend on alignment line: however adequate space to select alignment so unlikely to be adverse impact	
Water resources are protected (Water)	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.		No resources known to be at risk.		No resources known to be at risk.	
No detriment to water quality (Water) Bedwick Sewage treatment works	●	●	●	●	-	▲	▲
	STW protected.	STW protected.		STW at risk of flooding; potential for pollution .		Asset protected as it is assumed managed retreat will not impact on either the sewage treatment works or the chemical works.	
Policy is designed to adapt to or	▲	▲	▲	▲	-	-	●

accommodate climate change trends. (Air and Climate)								
	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.			Natural evolution of the coast will accommodate climate change; possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	-
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.

Summary

Agriculture is the dominant economic activity at the shoreline from the southern boundary of Berkley Power Station to the northern boundary of Oldbury Power Station. To advance the line is theoretically a positive step for the industry over the SMP2 timeframe as the total area of agricultural land could be increased.

The protection from flooding and erosion of nationally significant power stations at either end of this Policy Unit are key drivers for the setting of policy at the shoreline. Both power stations are within the flood cells of this Policy Unit.

For historic environment assets to advance the line would have a negative impact. Some assets are marine based, and the physical advancement of the line is likely to disturb or destroy the sites. To hold the line will have a positive impact post 2050 as defences under no active intervention will have failed if the line is not held, leaving the sites vulnerable to flooding and erosion.

The 'With Present Management' policy (set by SMP1) for BRIS2 – New Passage to north extent of Severnside Works – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Old Passage to new Passage	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the New Passage to north extent of Severnside Works shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Bristol and Severnside -New Passage to north extent of Severnside Works (BRIS 2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical infrastructure: M4 and M5, Second Severn Crossing, Power Line Crossing, Severn Tunnels, Railway (defences), Seabank Power Station To manage the risk of flooding and erosion to critical infrastructure.				-			-					
	Infrastructure protected.			Infrastructure protected.			Infrastructure at risk from flooding.			Impact will depend on alignment line: however very limited space in the reach so likely to be an adverse impact.		
Industrial, commercial and economic assets: Chemical Processing Plants, Chitting Wharf Trading Estate Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)				-			-					
	Assets will be protected.			Assets will be protected.			Assets will at an increased risk of flooding.			Impact will depend on alignment line: however very limited space in the reach so likely to be an adverse impact.		
International Nature Conservation Sites Severn Estuary: Ramsar, SAC and SPA Avoid significant impact on the integrity of internationally designated sites and				-			-					

the favourable condition of their features.								
	Coastal squeeze will occur	Coastal squeeze will occur			In theory habitats will roll back and intertidal habitats will be maintained; however reach developed so scope for roll back limited in some areas; also terrestrial habitats may be affected			In theory habitats will roll back and intertidal habitats will be maintained; however reach developed so scope for roll back limited in some areas; also terrestrial habitats may be affected
Theme Area High Level Objectives								
Residential: Severn Beach Reduce significance of impact associated with flooding and erosion to people and property		-			-			
	Residential properties protected.	Residential properties protected.			Residential properties are at risk from flooding.			Impact will depend on alignment line; however very limited space in the reach so likely to be an adverse impact.
Recreational sites: Severn Way Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)		-			-			
	Footpaths and caravan and camping site will be protected.	Local footpaths and caravan and camping site will be protected.			Local footpaths and caravan and camping site will be at an increased risk of flooding.			Impact will depend on alignment line; however very limited space in the reach so likely to be an adverse impact.
National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)		-			-			
	Coastal squeeze will occur	Coastal squeeze will occur			In theory habitats will roll back and intertidal habitats will be maintained. However reach developed so scope for rollback limited. In addition terrestrial habitats will be affected			Impact will depend on alignment line; however very limited space in the reach; terrestrial habitats likely to be affected
Scheduled Monuments: Heavy anti-aircraft battery; Listed Buildings and non-designated		-			-			

sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)								
	Historical assets protected.	Historical assets protected.			Historical assets will be at an increased risk of flooding.			Impact will depend on alignment line: however very limited space in the reach so likely to be an adverse impact.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans					-	-	-	-
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.			Intertidal habitats maintained however potential loss of terrestrial habitats; also space limited due to development			Set back of line will maintain intertidal habitats; however potential loss of terrestrial habitats; also space limited due to development
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)		-			-			
	Properties protected.	Properties protected.			Residential properties and industry are at risk from flooding.			Impact will depend on alignment line; however very limited space in the reach so likely to be an adverse impact.
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water) Sewage Treatment Works at Bedwick Chemical Treatment works; Active landfill sites		-			-			
	Assets protected.	Assets protected.			Assets at risk from increased flooding, with associated implications for water quality.			Asset protected as it is assumed managed retreat will not impact on either the sewage treatment works or the chemical works. However limited space to achieve realignment
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)		-			-	-	-	
	Can not raise the height	Can not raise the height of			Natural evolution of the coast will			Managed retreat will

	of defences indefinitely.	defences indefinitely.			accommodate climate change; possible impact to people and property.			accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	-	▲	▲	-	-	-	-
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.

Summary

Significant assets indicate a Hold the Line Policy to be appropriate. Very large flood cells spanning large areas of the shoreline mean the impact of not defending this shoreline from flooding are far reaching. There are, however, significant environmental impacts to Holding the Line at BRIS 2 and adjacent segments due to lost habitat as a result of coastal squeeze.

The chemical processing plant is considered a Key Policy Driver due to the economic benefit and the potential detrimental impact on water quality and the environment in the event of flooding or erosion of the site.

The 'With Present Management' policy (set by SMP1) for **BRIS3 – North extent of Severnside Works to Avonmouth Pier** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Severnside Works to Mitchell's Salt Rhine	Hold the Line	Hold the Line	Hold the Line or Retreat the Line
Mitchell's Salt Rhine to Avonmouth Pier	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the New North extent of Severnside Works to Avonmouth Pier shoreline can be compared with alternative management policies through the following table:

	Policy Unit – North extent of Severnside Works to Avonmouth Pier (BRIS 3)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical Infrastructure: M5 and M49, Railway Line, Lighthouse Electricity substations Avonmouth sewage treatment works Avonmouth Docks Manage the risk of flooding and erosion to critical infrastructure.							-					
	Critical infrastructure protected			Critical infrastructure protected			Critical infrastructure at increased risk of flooding			Insufficient space to significantly realign without affecting infrastructure		
Industrial, commercial and economic assets: Avonmouth industry including chemical processing plant Avonmouth port Fuel depots Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)												
	Assets will be protected.			Assets will be protected.			Assets will be at an increased risk of flooding.			Assets will be adversely affected by the realignment.		
International Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA Avoid significant impact on the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Coastal squeeze will occur			Coastal squeeze will occur			In theory habitats will roll back and intertidal habitats will be maintained. However reach developed so scope for rollback limited. In addition terrestrial habitats will be affected			Impact will depend on alignment line: however very limited space in the reach; terrestrial habitats likely to be affected		

Theme Area High Level Objectives									
Residential: Settlement of Avonmouth Reduce significance of impact associated with flooding and erosion to people and property	●		●	●	●	-	▲	▲	●
	Residential properties will be protected.		Residential properties will be protected.			Residential properties will be at an increased risk of flooding.			Some local adverse affects within retreated area, land behind protected; however scope to retreat defences in this reach currently limited by development.
Recreational sites: Local facilities and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	-		-	-	-	-	-	-	-
	No assets known to be present.		No assets known to be present.			No assets known to be present.			No assets known to be present.
National nature conservation designations: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	▲		▲	▲	▲	-	▲	▲	▲
	Coastal squeeze will occur		Coastal squeeze will occur			In theory habitats will roll back and intertidal habitats will be maintained. However reach developed so scope for rollback limited. In addition terrestrial habitats will be affected			Impact will depend on alignment line: however very limited space in the reach; terrestrial habitats likely to be affected
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	●		●	●	●	-	▲	▲	●
	Historical assets protected		Historical assets protected			Historical assets at risk of increased flooding.			Historical assets protected
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	▲		▲	▲	▲	-	●	●	●
	Loss of intertidal habitat due to coastal squeeze.		Loss of intertidal habitat due to coastal squeeze.			In theory habitats will roll back, intertidal habitats maintained			Set back of line will maintain intertidal habitats
Avoid/minimise environmental impacts	●		●	●	●	-	▲	▲	●

which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)								
	Limited residential properties present assets will be protected.	Assets will be protected.			Assets will be at an increased risk of flooding.			Some local adverse affects within retreated area, assets behind protected. Scope for retreat limited by industrial development
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water) Avonmouth STWs Active landfill sites					-			
	Assets protected.	Assets protected.			Assets at an increased risk of flooding, with implications for water quality.			Majority or assets protected; potential for some to be affected by the realignment.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)					-	-	-	
	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.			Natural evolution of the coast will accommodate climate change; possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)					-	-	-	-
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.

Summary

Significant assets indicate a Hold the Line Policy to be appropriate. Very large flood cells spanning large areas of the shoreline mean the impact of not defending this shoreline from flooding are far reaching. There are, however, significant environmental impacts to Holding the Line at BRIS 3 and adjacent segments due to lost habitat as a result of coastal squeeze.

The 'With Present Management' policy (set by SMP1) for BRIS4 – Avonmouth Pier to Netham Weir – is:

SMP1 Management Unit	0-20	20-50	50 - 100
River Avon (Right Bank)	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Avonmouth Pier to Netham Weir shoreline can be compared with alternative management policies through the following table:

		Policy Unit – Bristol and Severnside - Avonmouth Pier to Netham Weir (BRIS 4)											
		Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
		0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers													
Residential Developments Bristol city Sned Park Sea Mills Shirehampton Avonmouth Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-			-								
		Residential properties are not at risk of flooding with the exception of properties in Avonmouth. Properties in Avonmouth will be protected.			Residential properties are not at risk of flooding with the exception of properties in Avonmouth. Properties in Avonmouth will be at an increased risk of flooding.			Retreating the line would affect significant amount of development					
Critical infrastructure: M5 Avonmouth electricity substations Avonmouth Fire and Police stations Bristol electricity substations Bristol hospitals To manage the risk of flooding and erosion to critical infrastructure.	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-								
		Critical infrastructure in the centre of Bristol is not at risk from flooding. The M5 and M4 and Avonmouth area will be protected from flooding.			Critical infrastructure in the centre of Bristol is not at risk from flooding. The M4 and M5 and Avonmouth area will be at an increased risk of flooding.			Retreating the line would affect critical infrastructure					
International Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA, Avon Gorge Woodlands SAC Avoid significant impact on the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-			-								
		Avon Gorge Woodlands unaffected by tidal flooding. Severn Estuary affected. Coastal squeeze will occur			In theory habitats will roll back and intertidal habitats will be maintained. However reach developed so scope for rollback			Impact will depend on alignment line: however very limited space in the reach; terrestrial habitats likely to be affected					

					limited. In addition terrestrial habitats will be affected		
Industrial, commercial and economic assets: Industrial Assets, Regeneration Potential Avonmouth Docks Avonmouth Industry Bristol commercial centre Bristol Docks Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	-	▲ ▲	
		The centre of Bristol is not at risk from flooding. The Avonmouth assets will be protected from flooding under this option.			The centre of Bristol is not at risk of flooding. The Avonmouth assets will be at an increased risk of flooding under this option.		Significant realignment not feasibly due to presence of assets that would be adversely affected
Theme Area High Level Objectives							
Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	●	●	-	▲ ▲	●
		Residential properties are not at risk of flooding with the exception of properties in Avonmouth. Properties in Avonmouth will be protected.			Residential properties are not at risk of flooding with the exception of properties in Avonmouth. Properties in Avonmouth will be at an increased risk of flooding.		If sufficient space available realignment towards the mouth of the Avon could offer some local protection
Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-
		Limited recreational assets present. Recreational amenities are not at risk of flooding.			Recreational amenities are not at risk of flooding.		Limited recreational assets to be affected h
Reduce significance of impact associated with policies on marine operations and activities (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater	-	-	-	-	-	-

	flooding. It could also trigger erosion, rather than reduce it							
		Marine operations are not likely to be impacted.			Marine operations are not likely to be impacted.			
National Nature Conservation Designations (Severn Estuary, Avon Gorge and Horseshoe Bend SSSIs). Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-			
		All SSSI apart from Severn Estuary unaffected by tidal flooding, both now and in future Option will protect terrestrial parts of site, however intertidal areas will experience coastal squeeze.			Intertidal habitats will be protected for as long as habitat can roll back. However space limited, loss of terrestrial habitats will occur			Retreating the line will allow habits to roll back, however space limited; terrestrial habitats that exist will be lost
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Historic Parks and Gardens: King Weston House Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	
		Scheduled Monuments and Listed Buildings are not at risk of tidal flooding.			Scheduled Monuments and Listed Buildings are not at risk of flooding.			Features may be adversely affected if line retreated
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-			-			-
		Coastal squeeze will result in loss of intertidal habitats			In theory habitats will roll back retaining intertidal habitats, however space limited due to development so some loss of habitats is likely to occur			Set back of line will maintain intertidal habitats however may affect terrestrial habitats, also space limited due to development
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater	-			-	-		

	flooding. It could also trigger erosion, rather than reduce it							
		Residential properties are not at risk of flooding with the exception of properties in Avonmouth. Properties in Avonmouth will be protected.			Residential properties are not at risk of flooding with the exception of properties in Avonmouth. Properties in Avonmouth will be at an increased risk of flooding,			Some local adverse effects within retreated area; more widely properties will be protected
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-			-			-
		No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	●
		Can not raise the height of defences indefinitely.			Natural evolution of the coast will accommodate climate change; possible impact to people and property.			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	
		Ever increasing height of the defences will affect local landscape in terms of			Increasing the frequency of flooding may alter the local landscape (whether			Retreating the defences will alter the appearance and character of the

		character (increasing presence in the landscape): also a visual impact with defences disrupting views.	positive or negative depends on perception). May be a local change to townscape due to increased flooding and effect on buildings and use of the area. .	urban area; the nature and design of any changes will determine whether this is a positive or negative impact
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Summary


Significant assets indicate a Hold the Line Policy to be appropriate, despite limited likely impact as a result of high ground. Current defence anticipated lifespan into the 2nd epoch of the SMP2 limit the impact of a potential change in policy.








The 'With Present Management' policy (set by SMP1) for **BRIS5– Netham Weir to Avon road (Easton-in-Gordano)** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Netham Weir to South of Burgh Walls	Hold the Line	Hold the Line	Hold the Line
Burgh Walls to Chapel Pill	Do nothing	Do Nothing	Do Nothing
Chapel Pill to Portbury Pier	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at Netham Weir to Avon road (Eastern In Gordano) shoreline can be compared with alternative management policies through the following table:

Policy Unit – Bristol and Severnside - Netham Weir to Avon road (Eastern In Gordano) (BRIS 5)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Residential: Bristol city Easton in Gordano Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-	-	-	-	-	
				Residential properties are not at risk of flooding.			Residential properties are not at risk of flooding. A small number of properties in Easton in Gordano will be at an increased level of flooding.			Residential properties are not at risk of flooding; plus limited space to retreat defences		
International Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA and Avon Gorge Woodlands SAC Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-	-	-	-	-	-	▲		
				Avon Gorge Woodlands is currently unaffected by tidal flooding and is not predicted to be at future risk. Severn site is remote from this reach			Avon Gorge Woodlands is currently unaffected by tidal flooding and is not predicted to be at future risk. Severn site is remote from this reach			Avon Gorge Woodlands is currently unaffected by tidal flooding and is not predicted to be at future risk. Retreat the line could adversely affect the site. Severn site is remote from this reach		
Critical infrastructure: Bristol electricity substations Bristol hospitals within reach Reduce significance of impact associated with flooding and erosion to critical infrastructure	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to			-	-	-	-	-	-	-		

	greater flooding. It could also trigger erosion, rather than reduce it							
		No critical infrastructure at risk of tidal flooding.			No critical infrastructure at risk of tidal flooding.			No critical infrastructure at risk of tidal flooding
Theme Area High Level Objectives								
Industrial, commercial and economic assets: Agriculture, Industrial Development Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Assets not at risk of flooding.			Assets not at risk of flooding.			Assets not at risk of flooding.
Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Assets not at risk of tidal flooding.			Assets not at risk of tidal flooding.			Assets not at risk of tidal flooding; limited space for realignment.
Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Recreational amenities are not at risk of tidal flooding.			Recreational amenities are not at risk of tidal flooding.			Recreational amenities are not at risk of tidal flooding; limited space for realignment
Reduce significance of impact associated with policies on marine operations and activities (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Marine operations are not likely to be impacted.			Marine operations are not likely to be impacted.			Marine operations are not likely to be impacted; limited space for realignment.
Reduce significance of impact associated with managing adverse impacts on nationally or locally designated	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn	-	-	-	-	-	-	

conservation sites (Ashton Court, Ham Green SSSIs, Leigh Woods NNR). (Biodiversity, Flora and Fauna)	Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		All sites currently unaffected by tidal flooding; no impacts anticipated with HTL			All sites currently unaffected by tidal flooding; no impacts associated with this option			All sites currently unaffected by tidal flooding; retreat the line would adversely affect sites
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Historic Parks and Gardens: Leigh Court, Arnos Vale Cemetery Bristol University Botanic Gardens Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	
		Scheduled Monuments and Listed Buildings are not at risk of tidal flooding.			Scheduled Monuments and Listed Buildings are not at risk of tidal flooding.			Scheduled Monuments and Listed Buildings are not at risk of tidal flooding. Retreating the line could adversely affect the sites
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it				-			
		Coastal squeeze may result in loss of intertidal habitats			Potential for habitat roll back in some areas ; however terrestrial sites may be at risk			Retreat the line would adversely affect designated terrestrial sites
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		Residential properties are not at risk of tidal flooding so no impact.			Residential properties are not at risk of tidal flooding so no impact.			Residential properties are not at risk of tidal flooding so no impact.
Water resources are protected (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement,	-	-	-	-	-	-	-

	potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	●
		Can not raise the height of defences indefinitely.			Natural evolution of the coast will accommodate climate change; possible impact to people and property.			Managed retreat will accommodate climate change
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	-
		Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Defences will fall into disrepair however risk from tidal flooding will not increase. Potentially some minor changes to local landscape			Retreating the defences will alter the appearance and character of the area; the nature and design of any changes will determine whether this is a positive or negative impact

Summary

Significant assets indicate a Hold the Line Policy to be appropriate, despite limited likely impact as a result of high ground. Current defence anticipated lifespan into the 2nd epoch of the SMP2 limit the impact of a potential change in poli

The 'With Present Management' policy (set by SMP1) for **BRIS6– Avon road (Easton-in-Gordano) to Portishead Pier** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Chapel Pill to Portbury Pier	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the Avon road (Eastern In Gordano) to Portishead Pier shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Bristol and Severnside- Avon road (Eastern In Gordano) to Portishead Pier (BRIS 6)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Designations Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it			-			-					
				Coastal squeeze will occur			Habitats will roll back , intertidal habitats maintained; however terrestrial habitats lost			Intertidal habitats will roll back , however terrestrial habitats lost		
Industrial, commercial and economic assets: Dock Related Industry and Infrastructure – asset from adjacent Policy Unit within flood risk To manage the risk of flooding and erosion to critical infrastructure.	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
	Assets will be protected.			Assets will be protected.			Assets at an increased risk of flooding.			Majority or assets will be protected from the risk of flooding but some may be affected adversely by the realignment.		
Critical infrastructure: Docks and marinas Lighthouse M5 Avonmouth road and rail Bridge Electricity substations Portbury Wharf STW To manage the risk of flooding and erosion to critical infrastructure.	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it											
				Infrastructure protected			Infrastructure at risk			Impact depends on alignment; in theory some local adverse impacts with wider positive benefits		

Theme Area High Level Objectives										
Residential: Portbury Wharf, including new developments, and Sheepway Reduce significance of impact associated with flooding and erosion to people and property	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	-		
		Residential assets protected.			Residential assets at risk from increased flooding.			Residential assets protected but some may be adversely affected by realignment.		
Recreational sites: Local facilities, open space and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	▲		
		Sustrans route, leisure centre and some footpath networks. Assets protected.			Sustrans route, leisure centre and some footpath networks. Assets at an increased risk of flooding.			Sustrans route, leisure centre and some footpath networks. Overall assets protected potentially some local adverse effects due to realignment.		
Dock and marina operations Reduce significance of impact associated with policies on marine operations and activities (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it-	●	●	●	▲	▲	▲	▲		
		Dock operations protected			Dock operations at risk			Retreating the line likely to affect dock operations		
National nature conservation designations: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲		●	●	●		
		Coastal squeeze will occur			Habitats will roll back , intertidal habitats maintained; some space for roll back of terrestrial habitats			Habitats will roll back , intertidal habitats maintained; some space for roll back of terrestrial habitats		
Maintain and enhance Biodiversity Action Plan	N/A Advance the Line is	▲	▲	▲	-	●	●	●		

habitats and species in line with existing targets/plans	considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.			Habitats will roll back , intertidal habitats maintained			Set back of line will maintain intertidal habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	-
	Residential assets protected.	Residential assets protected.			Residential assets at risk from increased flooding.			Residential assets protected but some may be adversely affected by realignment.
Water resources are protected (Water)	-N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	-	-	-	-	-	-	-
		No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water) Portbury Wharf STW	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	●	●	●	▲	▲	▲	-
		Asset protected.			Asset at risk of coastal flooding with pollution potentially resulting. The 0 to 20 year flood cell from the shoreline at PORT1 includes sections of source protection zone 1. Saline intrusion from flooding may alter chemical status of groundwater.			Realignment in this reach is likely to affect the STW.
Policy is designed to adapt to or accommodate climate change trends.	N/A Advance the Line is considered to be an unsuitable policy for	▲	▲	▲	-	-	-	●

(Air and Climate)	tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it							
		Can not raise the height of defences indefinitely.			Natural evolution of the coast will accommodate climate change; possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	N/A Advance the Line is considered to be an unsuitable policy for tributaries to the Severn Estuary, as it would reduce in-channel flood storage and water movement, potentially leading to greater flooding. It could also trigger erosion, rather than reduce it	▲	▲	▲	-	-	-	-
		Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.

Summary

Significant assets indicate a Hold the Line Policy to be appropriate, despite limited likely impact as a result of high ground. Current defence anticipated lifespan into the 2nd epoch of the SMP2 limit the impact of a potential change in policy.
















4.14 Portishead and Clevedon Theme Area (PORT)

The 'With Present Management' policy (set by SMP1) for **PORT1– Portishead Pier to swimming pool** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Old Pier to Portishead Point	Do nothing	Do Nothing	Do Nothing, locally Retreat the Line (provisional option)

The impact on the agreed objectives of continuing with present management policy at the Portishead Pier to swimming pool shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Portishead and Clevedon – Portishead Pier to swimming pool (PORT 1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Coastal squeeze will occur			Coastal squeeze will occur			Habitats will roll back , intertidal habitats maintained			Habitats will roll back , intertidal habitats maintained		
Critical infrastructure: Lighthouse Electricity substations Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	-			-	-	-	-	-	-			
	Lighthouse and electricity substations are not at risk of flooding.			Lighthouse and electricity substations are not at risk of flooding.			Lighthouse and electricity substations are not at risk of flooding.			Lighthouse and electricity substations are not at risk of flooding.		
Theme Area High Level Objectives												
Residential: Reduce significance of impact associated with flooding and erosion to people and property												
	Woodlands Road residential properties not at risk; properties in outskirts of Portishead affected Some residential properties at risk of flooding. Properties protected			Some residential properties at risk of flooding. Properties protected			Some residential properties at risk of flooding; flood risk will increase over time.			Local adverse effects, wider benefits		
Recreational Sites: Local facilities and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity	-			-	-	-	-	-	-			

facilities. (Population and Human Health)							
	Limited recreational assets including footpaths. They are not at risk of flooding.	Limited recreational assets including footpaths. They are not at risk of flooding.	Limited recreational assets including footpaths. They are not at risk of flooding.	Limited recreational assets including footpaths. They are not at risk of flooding.	Limited recreational assets including footpaths. They are not at risk of flooding but may be adversely affected due to realignment.		
Portishead Pier to Black Nore SSSI Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils - including Geomorphology and Contaminated Land)		-	-	-			
	Advancing the line means exposure will no longer be subject to coastal processes	Defences may damage exposure; however processes will continue to operate	Natural processes will maintain the exposure	Will depend on alignment; however likely that retreating the line will leave the exposure subject to natural processes			
National nature conservation designations: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)							
	Coastal squeeze will occur	Coastal squeeze will occur	Habitats will roll back , intertidal habitats maintained	Habitats will roll back , intertidal habitats maintained			
Heritage Features: Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	-	-	-	-	-	-	-
	High number of non-designated archaeological features along this reach of coastline. Assets along coast are not at risk of tidal flooding.	Assets along coast are not at risk of tidal flooding.	Local historical assets along coast are not at risk of tidal flooding.	Impact will depend on alignment. Historical assets along coast are not at risk of tidal flooding.			
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans		-			-	-	-
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.	Habitats will roll back, intertidal habitats maintained. LNR behind defences potentially affected	Set back of line will maintain intertidal habitats; however terrestrial habitats inc LNR may be affected			
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with	-	-	-	-	-	-	

flood and erosion risk) (Population and Human Health)								
	Residential properties along coast are not at risk of tidal flooding.	Residential properties along coast are not at risk of tidal flooding	Residential properties along coast are not at risk of tidal flooding	Residential properties along coast are not at risk of tidal flooding	Residential properties along coast are not at risk of tidal flooding	Residential properties along coast are not at risk of tidal flooding	Residential properties are not at risk of flooding; realignment would therefore cause additional stress.	
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.
No detriment to water quality (Water)	-	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.	Natural evolution of the coast will accommodate climate change; possible impact to people and property.	Natural evolution of the coast will accommodate climate change; possible impact to people and property.	Managed retreat will accommodate climate change.	
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	-
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.	

Summary

The residential properties along the shoreline within this Policy Unit are on high ground but at erosion risk over the long term due to their close proximity to the coast.














Leisure centre set back out of flood cell or erosion risk line, therefore no impact of any policy approach.










The 'With Present Management' policy (set by SMP1) for **PORT2 – swimming pool to southern extent of Esplanade Road** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Woodhill Bay	Hold the Line	Hold the Line	Hold the Line

The impact on the agreed objectives of continuing with present management policy at the swimming pool to southern extent of esplanade road shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Portishead and Clevedon - swimming pool to southern extent of Esplanade Road (PORT 2)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Coastal squeeze will occur			Coastal squeeze will occur			Habitats will roll back , intertidal habitats maintained			Habitats will roll back , intertidal habitats maintained		
Theme Area High Level Objectives												
Recreational Sites: Woodhill Bay Swimming Pool and Marine Lake Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities	-			-	-	-	-	-	-			
	Recreational assets are not at risk of flooding.			Recreational assets are not at risk of flooding.			Recreational assets are not at risk of flooding.			Recreational assets along the sea front (including the pool and lake) will be adversely affected due to realignment.		
Residential: Woodhill Bay residential properties Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	-			-	-	-	-	-	-			
	Residential properties along coast are not at risk of tidal flooding.			Residential properties along coast are not at risk of tidal flooding.			Residential properties along coast are not at risk of tidal flooding.			Residential properties are not at risk of flooding; realignment will therefore have an adverse effect on coastal properties.		
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to	-			-	-	-	-	-	-	-		

industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)							
	Local commercial assets are not at risk of flooding.	Local commercial assets are not at risk of flooding.	Local commercial assets are not at risk of flooding.	Local commercial assets are not at risk of flooding.	Local commercial assets are not at risk of flooding.	Local commercial assets are not at risk of flooding.	No assets to be protected/affected by retreated line
Critical Infrastructure: Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	-	-	-	-	-	-	-
	None present	None present	None present	None present	None present	None present	None present
Portishead Pier to Black Nore SSSI Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils - including Geomorphology and Contaminated Land)		-	-	-			
	Advancing the line means exposure will no longer be subject to coastal processes	Defences may damage exposure; however processes will continue to operate			Natural processes will maintain the exposure		Will depend on alignment; however likely that retreating the line will leave the exposure subject to natural processes
National nature conservation designations: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)		-					
	Coastal squeeze will occur	Coastal squeeze will occur			Habitats will roll back , intertidal habitats maintained		Habitats will roll back , intertidal habitats maintained
Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	-	-	-	-	-	-	-
	High number of non-designated archaeological features along this reach of coastline. Assets along coast are not at risk of tidal flooding.	Assets along coast are not at risk of tidal flooding.			Local historical assets along coast are not at risk of tidal flooding.		Impact will depend on alignment. Historical assets along coast are not at risk of tidal flooding.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans		-			-	-	-
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.			Habitats will roll back, intertidal habitats maintained. Terrestrial		Set back of line will maintain intertidal habitats; however terrestrial be

					habitats possible affected	affected	
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	-	-	-	-	-	 -
	Residential properties along coast are not at risk of tidal flooding.	Residential properties along coast are not at risk of tidal flooding.	Residential properties along coast are not at risk of tidal flooding.	Residential properties along coast are not at risk of tidal flooding.	Residential properties along coast are not at risk of tidal flooding.	Residential properties along coast are not at risk of tidal flooding.	Residential properties are not at risk of flooding; realignment in this location will therefore have an adverse effect.
No detriment to water resources (Water)	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.
No detriment to water quality (Water)	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)		-			-	-	
	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.	Natural evolution of the coast will accommodate climate change; possible impact to people and property.	Natural evolution of the coast will accommodate climate change; possible impact to people and property.	Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)					-	-	-
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.

Summary













The landscape character at the shoreline is dominated by the presence of the primarily recreational marine lake. The marine lake is located directly on the shoreline, at risk from even minimal erosion rates of change over the long term. Under a scenario of no active intervention the marine lake will lose its integrity over time and gradually be taken by the sea, thus the current character of the landscape will be lost.

The 'With Present Management' policy (set by SMP1) for **PORT3 – southern extent of Esplanade Road to Ladye Point** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Kilkenny Bay to Redcliff Bay	Do nothing	Do Nothing, locally Retreat the Line (provisional option)	Do Nothing, locally Retreat the Line (provisional option)
Redcliff Bay to Ladye Point	Do nothing	Do Nothing	Do Nothing

The impact on the agreed objectives of continuing with present management policy at the southern extent of Esplanade Road to Ladye Point shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Portishead and Clevedon - southern extent of Esplanade Road to Ladye Point (PORT 3)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-								
	Coastal squeeze will occur			Coastal squeeze will occur			Coastal squeeze will occur because the coastline will not erode fast enough for habitats to roll back.			Habitats will roll back , intertidal habitats maintained		
Theme Area High Level Objectives												
Recreational sites: Golf Course Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities	-			-			-					
	Recreational assets along coast are not at risk of tidal flooding.			Recreational assets along coast are not at risk of tidal flooding.			Recreational assets along coast are not at risk of tidal flooding			Recreational assets along the sea front (including the golf course) will be adversely affected due to realignment.		
Residential: Redcliff Bay residential developments, West Hill, Walton in Gordano Reduce significance of impact associated with flooding and erosion to people and property	-			-			-					
	Residential properties along the coast are not at risk of tidal flooding.			Residential properties along the coast are not at risk of tidal flooding.			Residential properties along the coast are not at risk of tidal flooding.			Residential properties along the coast are not at risk of tidal flooding.; realignment will therefore have an adverse impact		
Infrastructure: IRB, Petrol Storage Site Reduce significance of impact associated with flooding and erosion to critical infrastructure	-			-			-					

	Infrastructure is not at risk of tidal flooding.; realignment will therefore have an adverse impact	Infrastructure is not at risk of tidal flooding.; realignment will therefore have an adverse impact	Infrastructure is not at risk of tidal flooding.; realignment will therefore have an adverse impact	Infrastructure is not at risk of tidal flooding.; realignment will therefore have an adverse impact	Infrastructure is not at risk of tidal flooding.; realignment will therefore have an adverse impact
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	-	-	-	-	-
	Local commercial assets and land are not at risk of flooding.	Local commercial assets and land are not at risk of flooding.	Local commercial assets and land are not at risk of flooding.	Local commercial assets and land are not at risk of flooding.	Impact will depend on alignment line. It is assumed that the alignment will not move far inland. Local commercial assets are not at risk of flooding.
Portishead Pier to Black Nore SSSI Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils - including Geomorphology and Contaminated Land)		-	-	  	
	Advancing the line means exposure will no longer be subject to coastal processes	Defences may damage exposure; however processes will continue to operate	Natural processes will maintain the exposure	Will depend on alignment; however likely that retreating the line will leave the exposure subject to natural processes	
National nature conservation designations: Severn Estuary, Holly Lane, Walton Common and Gordano Valley SSSIs Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)		-	 	-	  
Walton Common and Holly Lane SSSIs unaffected by tidal flooding now and in future.	Coastal squeeze will affect Severn Estuary SSSI. Gordano Valley unaffected	Coastal squeeze will affect Severn Estuary SSSI. Gordano Valley unaffected	Intertidal habitats of Severn SSSI will roll back	Habitats will roll back , intertidal habitats maintained. Assume Gordano Valley far enough inland to be unaffected	
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	-	-	-	-	
	Local historical assets are	Local historical assets are	Local historical assets are	Impact will depend on	

	not at risk of flooding.	not at risk of flooding.	not at risk of flooding.	alignment line. Historical assets may be affected.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	▲	▲ ▲	▲ ▲	●
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.	The coastline will not erode back fast enough for intertidal habitats to roll back.	Set back of line will maintain intertidal habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	-	-	▲
	Residential properties along coast are not at risk of tidal flooding.	Residential properties along coast are not at risk of tidal flooding	Residential properties along coast are not at risk of tidal flooding	Residential properties along coast are not at risk of tidal flooding. realignment would therefore cause increased stress to communities along coast
Source Protection Zone 1 Water resources are protected (Water)	-	-	-	-
	Source protection zone 1 is not at risk of being flooded.	Source protection zone 1 is not at risk of being flooded.	Source protection zone 1 is not at risk of being flooded.	Source protection zone 1 is not at risk of being flooded.
No detriment to water quality (Water)	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.	No resources known to be at risk.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲ ▲ ▲	-	●
	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.	Natural evolution of the coast will accommodate climate change; possible impact to people and property.	Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲ ▲ ▲	-	-
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.	Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.

Summary

Although there is no flooding and minimal erosion at the shoreline, many features are in close proximity of the shore and subject to erosion.

The petrol storage site is a Key Policy Driver for this unit – it is within the erosion risk zone over the long term and has the potential to have a significant negative impact on the environment and water quality if affected.

















The 0 to 20 year flood cell from the shoreline at PORT1 includes sections of source protection zone 1. Saline intrusion from flooding may alter chemical status of groundwater. To hold the line following a breach of the defences under a No Active Intervention Scenario will be significantly positive for the

The 'With Present Management' policy (set by SMP1) for **PORT4 – Ladye Point to Old Church Road** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Clevedon	Hold the Line (do nothing locally)	Hold the Line, locally Retreat the Line or Do Nothing	Hold the Line, locally Do Nothing

The impact on the agreed objectives of continuing with present management policy at the Ladye Point to Old Church Road shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Portishead and Clevedon - Ladye Point to Old Church Road (PORT 4)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Residential: Clevedon Reduce significance of impact associated with flooding and erosion to people and property	●			●	●	●	-	▲	▲	●		
	Residential properties in Clevedon will be protected.			Residential properties in Clevedon will be protected.			Residential properties in Clevedon will be at an increased risk of flooding.			Residential properties in Clevedon will be protected		
Critical Infrastructure: Clevedon Hospital Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	●			-	●	●	-	▲	▲	●		
	Hospital potentially at risk under NAI. Asset will be protected			Asset will be protected.			Asset will be at an increased risk of flooding.			Asset will be protected.		
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	▲			-	▲	▲	-	▲	▲	▲		
	Coastal squeeze will occur			Coastal squeeze will occur			Limited potential for roll back of habitats due to development; intertidal habitats will be lost			Limited potential for realignment due to development; intertidal habitats will be lost		
Theme Area High Level Objectives												
Recreational sites: Local facilities, footpath network and seafront esplanade Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	●			-	●	●	-	▲	▲	▲		
	Only western section of unit affected by flooding under NAI. Recreational assets will be protected.			Recreational assets will be protected.			Recreational assets will be adversely affected.					
Industrial, commercial and economic assets:	-			-	-	-	-	-	-	▲		

<p>Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)</p>								
	Land use is predominantly residential. Limited economic assets at risk from tidal flooding.	Land use is predominantly residential. Limited economic assets at risk from tidal flooding .			Land use is predominantly residential. Limited economic assets at risk from tidal flooding			Realignment may adversely affect some tourism assets along the seafront e.g. pier.
<p>Clevedon Shore SSSI Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils - including Geomorphology and Contaminated Land)</p>		-	-	-	-			
	Advancing the line means exposure will no longer be subject to coastal processes	Defences may damage exposure; however processes will continue to operate			Natural processes will maintain the exposure			Will depend on alignment; however likely that retreating the line will leave the exposure subject to natural processes
<p>National nature conservation designations: Severn Estuary and SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>		-			-			
	Coastal squeeze will occur	Coastal squeeze will occur			Coastal squeeze will occur because the coastline will not erode fast enough for habitats to roll back.			Habitats will roll back , intertidal habitats maintained
<p>Listed Buildings and non-designated sites of historic interest. Historic Park and Garden: Clevedon Court Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)</p>	-	-	-	-	-	-	-	-
	Local historical assets are not at risk of flooding or erosion	Local historical assets are not at risk of flooding.			Local historical assets are not at risk of flooding			Impact will depend on alignment line. It is assumed that the alignment will not move far inland. Historical assets are not at risk of flooding.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing		-			-			

targets/plans							
Church and Wains Hills LNR	Loss of intertidal habitat due to coastal squeeze	Loss of intertidal habitat due to coastal squeeze.			The coastline will not erode back fast enough for intertidal habitats to roll back		Set back of line will maintain intertidal habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	●	-	●	●	-	▲	▲
	Residential properties in Clevedon will be protected.	Residential properties in Clevedon will be protected.			Residential properties in Clevedon will be at an increased risk of flooding.		Residential properties in Clevedon will be protected.
Water resources are protected (Water)	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.			No resources known to be at risk.		No resources known to be at risk.
No detriment to water quality (Water)	-	-	-	-	-	-	-
	No resources known to be at risk	No resources known to be at risk			No resources known to be at risk		No resources known to be at risk
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	●
	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.			Natural evolution of the coast will accommodate climate change; possible impact to people and property.		Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.		Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure

4.15 Kingston Seymour to Sand Bay Theme Area (KIN)

The 'With Present Management' policy (set by SMP1) for KIN1 – Old Church Road to St Thomas' Head – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Wains Hill to St Thomas's Head	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Old Church Road to St Thomas' Head shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Kingston Seymour to Sand Bay - Old Church Road to St Thomas' Head (KIN 1)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
Critical Infrastructure: M5 Kingston Seymour STW Electricity substations Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)							-					
	Critical infrastructure protected from flooding.			Critical infrastructure protected from flooding.			Critical infrastructure at an increased risk of flooding.			Impact will depend on alignment line. There may be impacts on the Kingston and Seymour STW (600m from the coast).		
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Coastal squeeze will occur			Coastal squeeze will occur			Habitats will roll back , intertidal habitats maintained			Habitats will roll back , intertidal habitats maintained		
Residential: Clevedon Wick St. Lawrence, Kingston Seymour and isolated properties Reduce significance of impact associated with flooding and erosion to people and property				-			-					

	Residential properties in south Clevedon and the villages including Wick St Lawrence and Kingston Seymour are at risk. Policy will protect them.	Residential properties in south Clevedon and the villages including Wick St Lawrence and Kingston Seymour are at risk. Policy will protect them.	Residential properties in south Clevedon and the villages including Wick St Lawrence and Kingston Seymour are at risk. Policy will not protect them.	Impact will depend on alignment line. Some adverse local impacts for wider community benefit .
Theme Area High Level Objectives				
Industrial, commercial and economic assets: Agriculture Agricultural land, caravan and camping parks south of Clevedon. Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)		-	-	
	Agriculture main land use; assets protected.	Assets protected.	Assets at an increased risk of flooding.	Impacts will depend on new line; some local impacts offset by wider benefits due to large area at risk.
Recreational sites: Local facilities, footpath network and open space Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)		-	-	
	Golf course south of Clevedon and network of footpaths across area will be protected.	Golf course south of Clevedon and network of footpaths across area will be protected.	Golf course south of Clevedon and network of footpaths across area will be adversely affected.	Impact will depend on alignment line. Some local adverse impacts for wider community benefit
National nature conservation designations: Severn Estuary Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)		-	-	
	Coastal squeeze will occur.	Coastal squeeze will occur.	Habitats will roll back intertidal habitats maintained.	Habitats will roll back, intertidal habitats maintained.
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest.		-	-	

4 SAMs including Woodspring Priory and many listed buildings in villages. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)								
	Historical assets protected from flooding.	Historical assets protected from flooding.			Historical assets at risk of increased flooding.			Impact will depend on alignment line. It is assumed that the alignment will not move far inland. Historical assets protected from flooding.
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	▲	-	▲	▲	-	●	●	●
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.			Space for terrestrial and intertidal habitats to roll back			Set back of line will maintain intertidal habitats; plus sufficient space for terrestrial habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	●	-	●	●	-	▲	▲	●
	Populations in south Clevedon and the villages including Wick St Lawrence and Kingston Seymour are at risk. Policy will reduce concern.	Populations in south Clevedon and the villages including Wick St Lawrence and Kingston Seymour are at risk. Policy will reduce concern.			Populations in south Clevedon and the villages including Wick St Lawrence and Kingston Seymour are at risk. Policy will not reduce concern.			Impact will depend on alignment line. Some local impacts for wider community benefit
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No resources known to be at risk.	No resources known to be at risk.			No resources known to be at risk.			No resources known to be at risk.
No detriment to water quality (Water) Clevedon Source Protection Zone Kingston Seymour STW	●	●	●	●	-	▲	▲	●
	Protection of Clevedon source protection zone and of Kingston Seymour STW.	Protection of Clevedon source protection zone and of Kingston Seymour STW.			Clevedon source protection zone and Kingston Seymour STW at risk of tidal flooding and being adversely affected by saline intrusion.			Protection of Clevedon source protection zone and of Kingston Seymour STW.
Policy is designed to adapt to or accommodate climate change	▲	▲	▲	▲	-	-	-	●











trends. (Air and Climate)								
	Can not raise the height of defences indefinitely.	Can not raise the height of defences indefinitely.			Natural evolution of the coast will accommodate climate change; possible impact to people and property.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.

The 'With Present Management' policy (set by SMP1) for **KIN2 – St Thomas' Head to Middle Hope car park (Sand Point)** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
St Thomas's Head to Sand Point	Do nothing	Do Nothing	Do Nothing
Sand Point to Middle Hope Car Park	Do nothing	Do Nothing	Do Nothing

The impact on the agreed objectives of continuing with present management policy at the St Thomas' Head to Middle Hope car park (Sand Point) shoreline can be compared with alternative management policies through the following table:

Policy Unit – Kingston Seymour to Sand Bay - St Thomas' Head to Middle Hope car park (Sand Point) (KIN 2)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			▲	▲	▲	-	●	●	N/A. MR not feasible due to topography; unit is located on steep headland		
				Coastal squeeze will occur			Habitats will roll back , intertidal habitats maintained					
Theme Area High Level Objectives												
National nature conservation designations: Severn Estuary & Middle Hope SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			▲	▲	▲	-	●/▲	●/▲	N/A. MR not feasible due to topography; unit is located on steep headland		
				Severn : Coastal squeeze will occur. Middle Hope – calcareous grassland interest on top of cliff so no impact			Habitats will roll back, albeit very slowly due to geology/topography so intertidal habitats maintained. Possible impact to calcareous grassland as cliff retreats					
Industrial, commercial and economic assets: Agriculture Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered			-	-	-	-	-	-	N/A. MR not feasible due to topography; unit is located on steep headland		

		No assets at risk			No assets at risk			
Isolated Residential properties of Middle Hope Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	N/A. MR not feasible due to topography; unit is located on steep headland
		No properties at risk from tidal flooding via this unit			No properties at risk from tidal flooding via this unit			
Recreational sites: footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	N/A. MR not feasible due to topography; unit is located on steep headland
		Footpaths on the Middle Hope headland and LNR not affected by flooding via this unit; access severed due to flooding to the rear of the unit (see PU?)			Footpaths on the Middle Hope headland and LNR not affected by flooding via this unit; access severed due to flooding to the rear of the unit (see PU?)			
Middle Hope SSSI Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils -including Geomorphology and Contaminated Land)		-			-			
	Advancing the line means exposure will no longer be subject to coastal processes	Defences may damage exposure; however processes will continue to operate			Natural processes will maintain the exposure			Will depend on alignment; however likely that retreating the line will leave the exposure subject to natural processes
Critical Infrastructure: Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	N/A. MR not feasible due to topography; unit is located on steep headland
		No critical infrastructure present.			No critical infrastructure present.			
Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	N/A. MR not feasible due to topography; unit is located on steep headland
		No historic environment assets will be impacted.			No historic environment assets will be impacted.			
Maintain and enhance Biodiversity Action Plan habitats and	N/A Due to high ground / hard geology ATL is not	-			-			N/A. MR not feasible due to topography; unit is located on steep headland

species in line with existing targets/plans	technically appropriate, option not considered							
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.			Topography will limit degree of rollback			Set back of line will maintain intertidal habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	N/A. MR not feasible due to topography; unit is located on steep headland
		No residential properties at risk from tidal flooding via this frontage			No residential properties at risk from tidal flooding via this frontage			
Water resources are protected (Water)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	N/A. MR not feasible due to topography; unit is located on steep headland
		No water resource assets at risk of being affected.			No water resource assets at risk of being affected.			
No detriment to water quality (Water)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	-	-	-	-	-	-	N/A. MR not feasible due to topography; unit is located on steep headland
		No known features at risk.			No known features at risk.			
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	▲	▲	▲	●	●	●	N/A. MR not feasible due to topography; unit is located on steep headland
		Can not raise height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change.			
Avoid detrimental effects to landscape character (Landscape)	N/A Due to high ground / hard geology ATL is not technically appropriate, option not considered	▲	▲	▲	-	-	-	N/A. MR not feasible due to topography; unit is located on steep headland
		Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Unit not affected by tidal flooding; limited erosion. No impact			

The 'With Present Management' policy (set by SMP1) for **KIN3 – Middle Hope car park to southern extent of Beach Road** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Middle Hope Car Park to South Kewstoke	Hold the Line	Hold the Line	Hold the Line or Retreat the Line

The impact on the agreed objectives of continuing with present management policy at the Middle Hope car park to southern extent of Beach Road shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Kingston Seymour to Sand Bay - Middle Hope car park to southern extent of Beach Road (KIN 3)											
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment		
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100
Key Policy Drivers												
International Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-			-					
	Loss of intertidal habitat			Coastal squeeze will occur.			Habitats will roll back, intertidal habitats maintained. Some restrictions due to development along the coast			Set back of line will maintain intertidal habitats; Some restrictions due to development along the coast		
Theme Area High Level Objectives												
Residential: Sand Bay. Kewstoke Holiday Camp Reduce significance of impact associated with flooding and erosion to people and property							-					
	Protected from flooding			Protected from flooding			Residential areas at increased risk form flooding			Large numbers of residential properties concentrated along coast potentially affected by retreating line		
Recreational sites: Local facilities, footpath network and seafront esplanade Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)							-					
	Existing assets protected			Assuming standard of protection maintained or increased recreation assets including the beach front will be protected			Flood risk will increase			Beach road and the public car parks along it may be affected.		

<p>Industrial, commercial and economic assets: Agriculture, Tourism/Commercial holiday and caravan parks Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)</p>	●	●	●	●	-	▲	▲	●
	Existing assets will be protected	Local commercial assets are present such as holiday park and caravan parks will be protected.			Increased flood risk over time.			Negative impact on caravan parks, holiday park and potential loss of agricultural land. Wider benefit to areas behind line
<p>Critical infrastructure: M5 Two electricity substations Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)</p>	●	●	●	●	-	▲	▲	●
	Reduced risk of flooding for beach road. Path network could be developed.	Infrastructure will be protected.			Increased flood risk over time. This will not protect the electricity substations which are present in Sand Bay.			Beach road will be affected and electricity substations could be put at more risk.
<p>National nature conservation designations: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)</p>	▲	-	▲	▲	-	●	●	●
	Loss of intertidal habitat	Coastal squeeze will occur			Habitats will roll back , intertidal habitats maintained			Set back of line will maintain intertidal habitats.
<p>Scheduled Monuments, Listed Buildings and non-designated sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)</p>	-	●	●	●	-	-	-	-
	No historic environment assets that will be impacted on.	Historic environment assets protected. .			Flood risk will increase Limited historic environment assets that will be impacted .			Impact depends on alignment; potentially some local impacts but greater number of assets protected
<p>Maintain and enhance Biodiversity Action Plan habitats and</p>	▲	-	▲	▲	-	●	●	●

species in line with existing targets/plans								
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.			Habitats will roll back , intertidal habitats maintained			Set back of line will maintain intertidal habitats
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	●	●	●	●	-	▲	▲	●
	Limited residential properties at risk/protected	Limited residential properties at risk/protected			Limited residential properties at risk increased flood risk			Overall flood risk will be reduced however some properties and caravan parks may be affected.
Water resources are protected (Water)	-	-	-	-	-	-	-	-
	No water resource assets at risk of being affected.	No water resource assets at risk of being affected.			No water resource assets at risk of being affected.			No water resource assets at risk of being affected.
No detriment to water quality (Water)								
	No known features at risk.	No known features at risk.			No known features at risk.			No known features at risk.
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	●
	Can not raise the height of the defences indefinitely.	Can not raise height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change.			Managed retreat will accommodate climate change.
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	-
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape); also a visual impact with defences disrupting views.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.			Increasing the frequency of flooding may alter the local landscape (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.










The 'With Present Management' policy (set by SMP1) for **KIN4 – southern extent of Beach Road to Birnbeck Island** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
South Kewstoke to Birnbeck Island	Do nothing (locally hold)	Do Nothing (locally Hold the Line)	Do Nothing (locally Hold the Line or Do Nothing)

The impact on the agreed objectives of continuing with present management policy at the southern extent of Beach Road to Birnbeck Island shoreline can be compared with alternative management policies through the following table:

	Policy Unit – Kingston Seymour to Sand Bay - southern extent of Beach Road to Birnbeck Island (KIN 4)													
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment				
	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100	0-20	20-50	50-100		
Key Policy Drivers														
International Nature Conservation Sites Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features				-					-					- N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit due to elevated topography.
	Intertidal habitat loss of internationally designated sites			Coastal squeeze will occur			Habitats will roll back, all be it slowly due to elevated topography							
Critical Infrastructure: Lifeboat Station To manage the risk of flooding and erosion to critical infrastructure.				-					-					N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit due to elevated topography
	Advancing the line may have adverse effects on the lifeboat station.			Asset protected.			Lifeboat station will not be protected and will be at an increased risk of flooding.							
Theme Area High Level Objectives														
Future Development Opportunity – Birnbeck Island Reduce significance of impact associated with flooding and erosion to				-					-					N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit. due to elevated topography

industrial, commercial and economic assets (including agricultural), and activities (including tourism)								
Residential: Weston Reduce significance of impact associated with flooding and erosion to people and property	-	-	-	-	-	-	-	N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit. due to elevated topography
Recreational sites: Local facilities and footpath network Reduce significance of impact associated with flooding and erosion to key community, recreational and amenity facilities. (Population and Human Health)	-	-	-	-	-	-	-	N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit due to elevated topography
	Features not at flood risk now or under future scenarios. Unaffected by advance the line	Features not at flood risk now or under future scenarios.		Features not at flood risk now or under future scenarios.				
Industrial, commercial and economic assets: Local commercial assets Reduce significance of impact associated with flooding and erosion to industrial, commercial and economic assets (including agricultural), and activities (including tourism) (Population and Human Health)	-	-	-	-	-	-	-	- N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit due to elevated topography
	There are limited industrial, commercial and economic present within this reach ; no assets at risk	There are limited industrial, commercial and economic present within this reach ; no assets at risk from tidal flooding; no impact		There are limited industrial, commercial and economic present within this reach ; no assets at risk from tidal flooding; no impact				

	from tidal flooding ; no impact .							
Infrastructure: Local road and paths networks Reduce significance of impact associated with flooding and erosion to critical infrastructure (Population and Human Health)	-	-	-	-	-	-	-	N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit. due to elevated topography
	No risk of tidal flooding via the frontage within this unit; no impact from ATL	No risk of tidal flooding via the frontage within this unit; no impact			No risk of tidal flooding via the frontage within this unit; no impact			
Spring Cove Cliffs SSSIs Reduce significance of impact associated with maintaining the visibility of geological exposures throughout geological SSSIs (Land Use, Geology and Soils -including Geomorphology and Contaminated Land)		-	-	-				N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit. due to elevated topography
	Cliffs no longer exposed to natural erosive processes; exposure will become buried	Defences may damage exposure; otherwise impact will depend on whether defences are in front or behind the cliffs. However defences unlikely as no flood risk here.			Cliffs will remain exposed to natural erosive processes			
National nature conservation designations: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally and locally designated conservation sites. (Biodiversity, Flora and Fauna)		-			-			N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit. due to elevated topography
	Coastal squeeze will occur	Coastal squeeze will occur			habitats will roll back all be it slowly due to elevated land behind			
Scheduled Monuments, Listed Buildings and non-designated	-	-	-	-	-	-	-	N/A Managed realignment is considered to be an unsuitable policy for

sites of historic interest. Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting. (Historic Environment)									this Policy Unit. due to elevated topography
	No risk of tidal flooding via the frontage within this unit; no impact from ATL .	No risk of tidal flooding via the frontage within this unit; no impact			No risk of tidal flooding via the frontage within this unit; no impact				
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans	▲	-	▲	▲	-	●	●		N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit. due to elevated topography
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.			Habitats will roll back all be it slowly due to elevated topography				
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	-	-	-	-	-	-		- N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit. due to elevated topography
	Limited residential properties at risk/protected	Limited residential properties at risk/protected			Limited residential properties at risk/protected				
Water resources are protected (Water)	-	-	-	-	-	-	-		N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit due to elevated topography
	No water resource assets at risk of being affected.	No water resource assets at risk of being affected.			No water resource assets at risk of being affected.				
No detriment to water quality (Water)	-	-	-	-	-	-	-		N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit due to elevated topography
	No known features at risk.	No known features at risk.			No known features at risk.				
Policy is	▲	▲	▲	▲	-	-	-		N/A

designed to adapt to or accommodate climate change trends. (Air and Climate)								Managed realignment is considered to be an unsuitable policy for this Policy Unit due to elevated topography
	Can not raise the height of the defences indefinitely.	Can not raise height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change.			
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	N/A Managed realignment is considered to be an unsuitable policy for this Policy Unit due to elevated topography
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			The local landscape may erode faster (whether positive or negative depends on perception). May be a local change to landscape due to potential changes in vegetation condition and structure.			















4.16 The Holms Theme Area (HOL)

The 'With Present Management' policy (set by SMP1) for **HOL1 – Flat Holm** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Flat Holm		Do Nothing	Do Nothing

The impact on the agreed objectives of continuing with present management policy at the Flat Holm shoreline can be compared with alternative management policies through the following table:

	Policy Unit – The Holms – Flat Holm (HOL 1)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment			
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	
Key Policy Drivers													
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features										-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Loss of intertidal habitats			Currently no defences in place Coastal squeeze will occur. Loss of intertidal habitat			Currently no defences in place Coastal squeeze will occur. Loss of intertidal and ultimately terrestrial habitat						
Heritage: Scheduled Monuments: Palmerstonian Gun Batteries and WWII anti aircraft batteries Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting	-			-			-			-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Historical sites not at risk of flooding/erosion.			Historical sites not at risk of flooding/erosion.			Historical sites not at risk of flooding/erosion.						
Critical infrastructure: Lighthouse, Landing Pier To manage the risk of flooding and erosion to critical infrastructure.				-			-			-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Advancing the line would make assets redundant /inaccessible			Infrastructure not at risk of flooding.			Infrastructure not at risk of flooding.						
Theme Area High Level Objectives													
Residential: Lighthouse provides isolated residency Reduce significance of impact associated with flooding and erosion to people and property (Population and Human Health)	-			-			-			-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Limited residential properties at risk /			Limited residential properties at risk /			Limited residential properties at risk /						

	protected. Lighthouse not at risk of flooding.	protected. Lighthouse not at risk of flooding.	protected. Lighthouse not at risk of flooding.	
National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)		-  	- - -	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Loss of intertidal habitats but gain of terrestrial	Currently no defences in place Coastal squeeze will occur. Loss of intertidal habitat	Currently no defences in place Coastal squeeze will occur. Loss of intertidal and ultimately terrestrial habitat	
Maintain and enhance Biodiversity Action Plan habitats and species in line with existing targets/plans		-  	- - -	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal habitat due to coastal squeeze.	Loss of intertidal and ultimately terrestrial habitat due to coastal squeeze.	
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	- - -	- - -	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	No residential properties at risk / protected.	No residential properties at risk / protected.	No residential properties at risk / protected.	
Water resources are protected (Water)		- - -	- - -	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	No water resource assets at risk of being affected.	No water resource assets at risk of being affected.	No water resource assets at risk of being affected.	
No detriment to water quality (Water)		- - -	- - -	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	No known features at risk.	No known features at risk.	No known features at risk.	
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)		  	- - -	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Can not raise the height of the defences indefinitely.	Can not raise height of the defences indefinitely.	Natural evolution of the coast will accommodate climate change.	
Avoid detrimental effects to landscape character (Landscape)		  	- - -	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Limited change anticipated .	

Summary

The shoreline of Flat Holm is included in the internationally recognised nature conservation designations of the Severn Estuary, advancement of the current shoreline out into the estuary will have a negative impact on the sites. To physically hold the line will also have a negative impact on the environment and nature conservation – engineering works will prevent natural interactions at the shoreline that generate the present habitats.

Due to the hard rock geology of Flat Holm, and subsequent stable shoreline, the failure to hold the line will not have a positive or negative impact on landscapes adaptation /accommodation of climate change. The hard rock geology and negligible movement of the shoreline over the next century ensures there is no impact from flooding or erosion on the nationally recognised heritage features on Flat Holm.

The 'With Present Management' policy (set by SMP1) for **HOL2 – Steep Holm** – is:

SMP1 Management Unit	0-20	20-50	50 - 100
Flat Holm		Do Nothing	Do Nothing

The impact on the agreed objectives of continuing with present management policy at the Steep Holm shoreline can be compared with alternative management policies through the following table:

	Policy Unit – The Holms – Steep Holm (HOL 2)												
	Advance the Line			Hold the Line			No Active Intervention			Managed Realignment			
	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	0-20	20-50	50 - 100	
Key Policy Drivers													
International Nature Conservation Sites: Severn Estuary Ramsar, SAC and SPA Reduce significance of impact associated with maintaining the integrity of internationally designated sites and the favourable condition of their features										-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Loss of intertidal habitats			Currently no defences in place Coastal squeeze will occur. Loss of intertidal habitat			Currently no defences in place Coastal squeeze will occur. Loss of intertidal and ultimately terrestrial habitat						
Heritage: Scheduled Monuments: Palmerstonian Gun Batteries Listed Buildings and non-designated sites of historic interest Reduce significance of impact to scheduled and locally, regionally and nationally important cultural historic environment sites and their setting	-			-			-			-			N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Historical sites not at risk of flooding/erosion.			Historical sites not at risk of flooding/erosion.			Historical sites not at risk of flooding/erosion.						
Theme Area High Level Objectives													
National nature conservation: Severn Estuary SSSI Reduce significance of impact associated with managing adverse impacts on nationally or locally designated conservation sites. (Biodiversity, Flora and Fauna)				-									N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Loss of intertidal habitats			Currently no defences in place Coastal squeeze will occur. Loss of intertidal habitat			Currently no defences in place Coastal squeeze will occur. Loss of intertidal and ultimately terrestrial habitat			Loss of intertidal habitats but gain of terrestrial			
Maintain and enhance Biodiversity Action										-			N/A High ground / hard geology

Plan habitats and species in line with existing targets/plans								precludes physical retreat of the line, option not considered
	Intertidal habitats lost to coastal squeeze.	Intertidal habitats lost to coastal squeeze.			Loss of intertidal and ultimately terrestrial habitat due to coastal squeeze.			
Avoid/minimise environmental impacts which may have long term health impacts (including stress and anxiety associated with flood and erosion risk) (Population and Human Health)	-	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	No residential properties at risk / protected.	No residential properties at risk / protected.			No residential properties at risk / protected.			
Water resources are protected (Water)	-	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	No water resource assets at risk of being affected.	No water resource assets at risk of being affected.			No water resource assets at risk of being affected.			
No detriment to water quality (Water)	-	-	-	-	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	No known features at risk.	No known features at risk.			No known features at risk.			
Policy is designed to adapt to or accommodate climate change trends. (Air and Climate)	▲	▲	▲	▲	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Can not raise the height of the defences indefinitely.	Can not raise height of the defences indefinitely.			Natural evolution of the coast will accommodate climate change.			
Avoid detrimental effects to landscape character (Landscape)	▲	▲	▲	▲	-	-	-	N/A High ground / hard geology precludes physical retreat of the line, option not considered
	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.	Ever increasing height of the defences will affect local landscape in terms of character (increasing presence in the landscape): also a visual impact with defences disrupting views.			Limited change anticipated			

Summary

Steep Holm is an important site for nature conservation. Advancement of the current shoreline out into the estuary will have a negative impact on the internationally recognised environment and nature conservation sites. To physically hold the line will also have a negative impact on the environment and nature conservation – engineering works will prevent natural interactions at the shoreline that generate the present habitats.

Due to the hard rock geology of Steep Holm, and subsequent stable shoreline, the failure to hold the line will not have a positive or negative impact on landscapes adaptation /accommodation of climate change. The hard rock geology and negligible movement of the shoreline over the next century ensures there is no impact from flooding or erosion on the nationally recognised heritage features on Steep Holm.