North Devon and Somerset Coastal Advisory Group (NDASCAG)

Shoreline Management Plan Review (SMP2)
Hartland Point to Anchor Head

Appendix F – Initial Policy Appraisal & Scenario Development

Halcrow

The Supporting Appendices

These appendices and the accompanying documents provide all of the information required to support the Shoreline Management Plan. This is to ensure that there is clarity in the decision-making process and that the rationale behind the policies being promoted is both transparent and auditable. The appendices are:

A: SMP Development	This reports the history of development of the SMP, describing more fully the plan and policy decision-making process.
B: Stakeholder Engagement	All communications from the stakeholder process are provided here, together with information arising from the consultation process.
C: Baseline Process Understanding	Includes baseline process report, defence assessment, NAI and WPM assessments and summarises data used in assessments.
D: SEA Environmental Baseline Report (Theme Review)	This report identifies and evaluates the environmental features (human, natural, historical and landscape).
E: Issues & Objectives Evaluation	Provides information on the issues and objectives identified as part of the Plan development, including appraisal of their importance.
F: Initial Policy Appraisal & Scenario Development	Presents the consideration of generic policy options for each frontage, identifying possible acceptable policies, and their combination into 'scenarios' for testing. Also presents the appraisal of impacts upon shoreline evolution and the appraisal of objective achievement.
G: Preferred Policy Scenario Testing	Presents the policy assessment and 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 (SEA) 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.
J: Appropriate Assessment Report	Presents the Appropriate Assessment of SMP policies upon European designated sites (SPAs and SACs) as well as Ramsar sites, where policies might have a likely significant effect upon these sites. This is carried out in accordance with the Conservation (Natural Habitats, &c.) Regulations 1994 (the Habitats Regulations).
K: Water Framework Development Report	Presents assessment of potential impacts of SMP policies upon coastal and estuarine water bodies, in accordance with the requirements of EU Council Directive 2000/60/EC (the Water Framework Directive).
L: Metadatabase and Bibliographic database	All supporting information used to develop the SMP is referenced for future examination and retrieval.
M: Action Plan Summary Table	Presents the Action Plan items included in Section 6 of the main SMP document (The Plan) in tabular format for ease of monitoring and reporting action plan progress.

Within each appendix cross-referencing highlights the documents where related appraisals are presented. The broad relationships between the appendices are illustrated below.

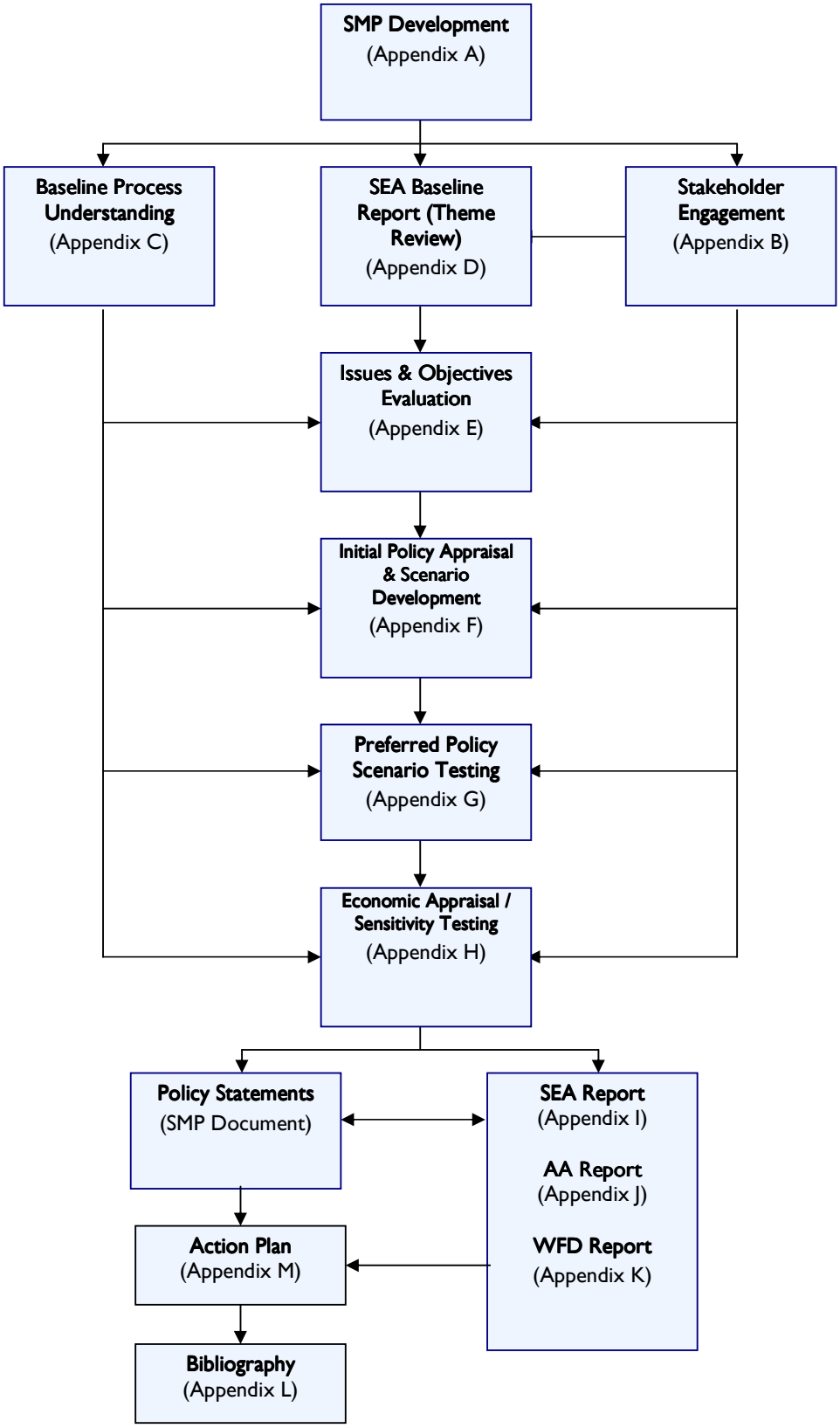
SMP Development
(Appendix A)
Baseline Process Understanding
(Appendix C)
SEA Baseline Report (Theme Review)
(Appendix D)
Stakeholder Engagement
(Appendix B)
Issues & Objectives Evaluation
(Appendix E)
Initial Policy Appraisal & Scenario Development
(Appendix F)
Preferred Policy Scenario Testing
(Appendix G)
Economic Appraisal / Sensitivity Testing
(Appendix H)
Policy Statements
(SMP Document)
SEA Report
(Appendix I)
AA Report
(Appendix J)
WFD Report
(Appendix K)
Action Plan
(Appendix M)
Bibliography
(Appendix L)

Table of Contents

F.1 Introduction

This Appendix outlines the key steps undertaken in the development and definition of policies. Policy scenarios have then been taken forward and appraised and the results of this appraisal in terms of identification of initial proposed preferred policies are presented in **Annex F.4**.

The recommended approach (Defra Guidance, 2006) for development of a sustainable final plan is through the assessment of policy scenarios, 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 the options that have been appraised (Annex F.1)
- the appraisal of these policy options in terms of potential impact on coastal evolution and behaviour (Annex F.2);
- the appraisal of these policy options in terms of potential impacts on the human and natural environment and appraisal of objectives, as set out in Appendix D (Annex F.3);
- a summary of the recommended preferred policies, based on these appraisals that were then consulted on with the North Devon and Somerset Coastal Advisory Group, elected members and stakeholders (Annex F.4).

It should be noted that the first task 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 coast as a whole.

F.2 Identification of Policy Options to Test

F.2.1 Policies to consider

There are four shoreline management policies that need to be considered by the SMP. These are defined by the Defra SMP Guidance (2006) as follows:

- Hold the existing defence line by maintaining or changing the standard of protection (referred to as 'hold the line'). This policy covers those situations where work or operations are carried out in front of the existing defences (such as beach recharge), rebuilding the toe of a structure, building offshore breakwaters and so on) to improve or maintain the standard of protection provided by the existing defence line. This policy also includes operations to the back of existing defences (such as building secondary floodwalls) where they form an essential part of maintaining the current coastal defence system.
- Advance the existing defence line by building new defences on the seaward side of the original defences (referred to as 'advance the line'). This policy is limited to those policy units where significant land reclamation is considered.
- Managed realignment 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).
- No active intervention, where there is no investment in coastal defences or operations.

The SMP guidance requires that in determining the appropriateness of the SMP policies, the assessment needs to consider any changes over time at each location (i.e. through considering the three time periods (0 to 20 years, 20 to 50 years and 50 to 100 years) as well as to account for interactions between locations along the coast during any time period.

F.2.2 Development of policy options to test

The recommended approach (Defra Guidance, 2006) for the development of a sustainable final plan is the assessment of a combination of policies, or policy scenarios, rather than considering locations in isolation. A 'nested' approach has therefore been adopted, to enable local issues to be addressed in developing policy, whilst still ensuring that larger scale considerations are still accounted for. As part of this nested approach, the coast has been sub-divided into seventeen areas, for which 'strings' of policy options have been developed. At a more local scale, draft 'policy units' have been defined. These local scale divisions of the coastline should enable most effective management of the coast in the future and were therefore defined through considering a number of factors including: the character of the coast (both natural and human), coastal processes and operating authority boundaries.

Using the understanding gained from the two baseline scenarios of 'no active intervention' and 'with present management' (see **Appendix C**), a preliminary high level assessment of appropriate policies was undertaken, which involved consultation with the Client Steering Group and stakeholders through Key Stakeholder events held in January 2010. The high level assessment of appropriate policies considered any key 'policy drivers ' or controls, which could be the primary consideration in the setting of policies, such as critical infrastructure, key commercial centres and international habitat sites. A 'key policy driver' can be defined as a feature that has sufficient importance in terms of the benefits it provides that it potentially has an overriding influence upon policy selection at the wider SMP scale. This may be through either promoting a policy, or discarding a policy, for a particular location or locations. There are no specific criteria which define a key policy driver, rather it is dependant upon the specific nature of coastline and associated assets.

In some cases this high level assessment of appropriate policies allowed quite obvious policies to be derived. Elsewhere it was recognized that a number of policy options would need to be considered at the local level. Therefore, for those areas where no key policy driver was identified, a high level screening of the generic policy options was undertaken, considering potential impacts, technical feasibility and likely economic justification. As part of this process, the policy options were discussed with the CSG, Elected Members and stakeholders (at a series of combined Elected Members and Key Stakeholder Events in January 2009). Further

information on the consultation process is provided in **Appendix B**. In consulting with the CSG, EMF and stakeholders, each group were asked to:

- Provide a practical vision for the coastline over the short (0-20 years), medium (20-50 years) and long term (50-100) years;
- Consider the relative importance of their issues against those of others; and
- Where there might be a conflict of interest, consider possible areas for compromise or acceptable change, especially where the relative importance of a particular issue might alter over time.

Through this process, the policy options that needed to be considered further were identified, for each location. These options were then grouped together to create a policy 'scenarios' for each of the 10 policy scenario areas (A to J). These are presented in **Annex F1**.

In broad terms, Policy Scenario A represents a first approximation of appropriate policies, based upon current understanding of coastal dynamics and the key issues along this SMP coastline. Based upon feedback from key stakeholders and elected members, modifications have been made to appraise how varying policies could affect both the coastal evolution and the achievement of objectives. The modifications considered as part of Policy Scenario B consider a long term vision of a more naturally functioning coast, whilst the policies considered under Policy Scenario C assume that a primary driver in the future will be to protect most assets in the long term.

F.3 Appraisal of Policy Options

The appraisal of policy options has involved two key tasks:

- identification of potential impacts on shoreline interactions and future coastal evolution, which draws upon the baseline scenario assessments already undertaken; and,
- identification of potential impacts on the human and natural environment and appraisal of objectives defined earlier in the SMP process (see **Appendix D**).

Annex F.1 identifies the policy scenarios that have been considered, together with a brief justification of the policy decisions made. This text also states the broad assumptions made regarding the implementation of the policy options. This is necessary to inform the assessment of potential impacts, but does not remove the need for further more detailed study, which would be undertaken at a strategy stage.

F.3.1 Potential impacts on shoreline interactions and future coastal evolution

Annex F.2 presents the analysis of the potential impact of these policies on coastal evolution and therefore future flood and erosion risk. This analysis builds upon the understanding of coastal behaviour and potential evolution as discussed in **Appendix C: Baseline Process Understanding**. **Appendix C** provides further background information and the broad scale assumptions made in this SMP review, with regard to future coastal response. **Appendix C** also discusses assumptions made with regard to future climate change, including sea level rise.

Policy Scenario A is presented in full, followed by a discussion for each area, which identifies how modifications to the policies (considered as part of Policy Scenarios B and/or C) may have a different impact on the coastal dynamics and shoreline evolution.

F.3.2 Potential impacts on the human and natural environment

The potential impacts on the human and natural environment, including the possible benefits and opportunities arising from each policy option, together with an appraisal of whether objectives have been achieved, are discussed in **Annex F.3**. This uses the baseline information included in **Appendices D and E.**

No attempt has been made to weight or rank objectives, as previous experience on SMP2s has proven this technique to be biased towards certain policy drivers and often too subjective. Instead the focus has been on a more qualitative and flexible means of developing and appraising sustainable policy options against technical, economic, environmental and social factors. This approach is considered to be more appropriate when considering intangibles and areas where a single policy may have both positive and negative impacts.

As part of this approach stakeholders views have been collated, via a number of stakeholder events, and used in the development of the issues and objectives table, and the subsequent policy appraisal (**Appendix B** provides further details on the consultation carried out as part of the SMP development).

F.3.3 Consideration of estuaries

For the majority of estuaries within this SMP area, management policies have been developed as part of a Catchment Flood Management Plan (CFMP). In developing CFMPs a similar process to the SMP is followed, and policies have been developed through considering impact on both the evolution of the estuary and the resultant impacts on shoreline assets. Prior to the final release of the CFMP, policies have to be adopted by the Environment Agency and a consultation process is also undertaken. Therefore the principle for this SMP has been to adopt the existing CFMP policies unless there is sufficient evidence to reject the policy, such as where wave action is a key influence on change (as this is not considered in CFMPs).

In developing policy options for the SMP, the CFMP policies have been appraised at a high level. As the policies are not always directly comparable, broad assumptions have been made regarding the likely implementation of the CFMP and these are clearly stated in the policy appraisal tables below. In most instances the CFMP policies have been adopted by the SMP as the equivalent policy. Rather than considering the four Defra policies (see

Section F2.1), the CFMPs consider six policy options. Table F.1 below states the CFMP policy options and the broad equivalent SMP policy related to each.

In general, the CFMPs for this area tend to set policies over much larger areas than considered by the SMP and it has not always been appropriate to set an SMP policy that is a direct equivalent of CFMP policy. There is therefore a number of areas where the CFMP policies are not thought to be appropriate for discrete lengths of estuary shoreline. In these places alternative SMP policies have been considered, following discussion with the relevant interest groups and CSG.

CFMP Policy Option	SMP Policy Option
P1 – No Active Intervention;	No Active Intervention
P2 – Reduce existing flood risk management actions;	No Active Intervention or Managed Realignment
P3 – Continue with existing or alternative actions;	Hold the Line or Managed Realignment
P4 – Take further action to sustain current level of flood risk in future;	Hold the Line
P5 – Take further action to reduce flood risk; and	Hold the Line
P6 – Take action to increase the frequency of flooding to bring benefits locally and elsewhere.	Managed Realignment

Table F.1 CFMP policy options and the equivalent SMP policy option.

F.4 Identification of Proposed Preferred Policies

Upon completion of the policy appraisals discussed in Section F.4.2 and F.4.3, an expert review was undertaken to determine which policy options and scenarios were the most appropriate for the sustainable long-term management of the coast. The review took account of the impacts upon coastal processes, the features, issues and objectives, as well as taking into account the views and comments provided by stakeholders throughout the SMP process. **Annex F.4** provides a concise summary of the proposed preferred policies identified from this process, drawing upon the policy appraisals that have been undertaken and including brief comment/justification as to why these have been selected as the proposed preferred policies.

A separate economic and sensitivity appraisal was then undertaken and this is presented in **Appendix H.**

The proposed preferred policy options were then first discussed with the North Devon and Somerset Coastal Advisory Group and subsequently with stakeholders at a series of stakeholder forums held in July 2009. Following these discussions and further review, agreement was reached on a Preferred Policy Scenario for each SMP frontage to present in the draft SMP for public consultation and the changes from the initial proposed policies in **Annex F.4** and those that went forward in the draft SMP for public consultation are detailed in **Appendix G**.

These preferred policies have subsequently been amended further to take account of the views received from the public consultation. The preferred policy and a record of changes made are also presented in **Appendix G**.

Annex F.1 – Initial Policy Options to Test

Please note the following when viewing the tables presented in the following:

- Those values highlighted in **blue** text are those that are directly correlated with corresponding CFMP policies within the estuaries.
- Policies that change from Policy Scenario A are shown highlighted in yellow within the tables for Policy Scenarios B and C.

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
POLICY SCENARIO AREA A: LUNDY											
7c01 – Landing Beach	Hold the Line	HTL	HTL	HTL							Lundy is a small island situated offshore of North Devon and is extensively designated for its wealth of environmental features and interests, both above and below the sea. The only defences on the island occur at Landing Beach. Continued defence of these is required as this provides the only access to the island for both those who live there and also tourists who visit the island to enjoy its many natural attractions. Key drivers here are therefore to continue to protect this only access point in 7c01, whilst allowing the continued natural evolution of the rest of Lundy. Managed Realignment and Advance the Line policies for Landing Beach are not thought to be feasible, with the latter being inappropriate due to the landscape and geological importance of this coastline. As such these have not been appraised further.
7c02 – Lundy (except Landing Beach)	Do Nothing	NAI	NAI	NAI							

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
POLICY SCENARIO AREA B: HARTLAND POINT TO WESTWARD HO!											
7c03 – Hartland Point to Clovelly	Do Nothing	NAI	NAI	NAI				NAI	NAI	NAI	This is a largely undefended, naturally functioning and environmentally designated coast with only significant defences present at Clovelly. The key policy drivers in Scenario A are therefore to conserve the natural functioning of the coast whilst continuing the protect the important economic asset of Clovelly, which is an important tourist attraction of benefit to the wider area. Some smaller defences are present at Bucks Mills in unit 7c05 but the risk of erosion here is slight and there are very few assets at risk to justify expenditure from the flood and coastal defence budget in the long term. Therefore Scenario C tests the implications of HTL at Bucks Mills if alternative funds are available.
7c04 – Clovelly	Hold	HTL	HTL	HTL				HTL	HTL	HTL	
7c05 – Clovelly to Rock Nose	Do Nothing	NAI	NAI	NAI				NAI (HTL at Bucks Mills)	NAI (HTL at Bucks Mills)	NAI (HTL at Bucks Mills)	
POLICY SCENARIO AREA C: WESTWARD HO! TO SAUNTON DOWN											
7c06 – Westward Ho!	Hold	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	This section of coast encompasses the Taw/Torridge Estuary that has a complex interaction with the open coast areas of this frontage. There are many defence embankments already in place within the estuary and Scenario A assumes that these existing alignments in many areas are retained to continue to protect low-lying areas of farmland and developed areas at places like Barnstaple, Bideford,
7c07 – Northam Burrows	Retreat	MR	MR	MR	NAI	NAI	NAI	HTL	HTL	HTL	
7c08 – Skern Salt Marsh to Appledore (west)	Retreat	HTL	MR	MR	NAI	NAI	NAI	HTL	HTL	HTL	
7c09 – Appledore	Hold	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
7c10 – Appledore to Northam	Do Nothing	HTL	HTL	HTL	NAI	NAI	NAI	HTL	HTL	HTL	Instow, East-the-Water and Fremington, whilst seeking opportunities to realign around the west bank of the River Caen in order to offset coastal squeeze that retaining so many defences in the estuary is likely to result in. Scenario C tests the implications of also holding the line in this area of the estuary to conserve historic environment assets. Scenario B tests the implications of MR being introduced in more areas within the Taw/Torridge estuary that have MR potential for both habitat creation and flood storage benefits. At Northam Burrows there is a landfill site at the tip that needs to be prevented from eroding so that landfill material does not enter the environment. A recent study by Devon County Council indicated that to remove this material would be many millions of pounds. Realignment along Northam Burrows would allow natural functioning of the coast with localised protection of the landfill site. This would also need some realigned defence to prevent outflanking risk to Westward Ho! arising as the Pebble Ridge rolls back. Scenario B tests what the implications of not intervening along the Burrows are, whilst Scenario C examines options for introducing measures to hold the line around the existing extent of Northam Burrows to conserve the area as it is.
7c11 – Northam and Bideford	Hold	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	
7c12 – Upper Torridge Estuary (east and west banks between Bideford and Weare Gifford)	N/A	HTL	HTL	HTL	NAI	NAI	NAI	HTL	HTL	HTL	
7c13 – East-the-Water to Torridge Bridge (A39)	N/A	HTL	HTL	HTL	NAI	NAI	NAI	HTL	HTL	HTL	
7c14 – Torridge Bridge (A39) to Instow	Hold	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	
7c15 – Instow	Hold	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	
7c16 – Instow to Yelland	Hold	HTL	HTL	MR	HTL	MR	MR	HTL	HTL	HTL	
7c17 – Home Farm Marsh (Yelland to Fremington)	Retreat	HTL	HTL	HTL	HTL	MR	MR	HTL	HTL	HTL	
7c18 – Fremington to Penhill Point	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	
7c19 – Penhill Point to A39 Road Bridge (Bickington)	N/A	HTL	HTL	HTL	MR	NAI	NAI	HTL	HTL	HTL	
7c20 – Upper Taw Estuary (east and west banks between A39 to tidal limit near Bishops Tawton)	N/A	HTL	HTL	HTL	MR/ NAI	MR/ NAI	MR/ NAI	HTL	HTL	HTL	

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
7c21 – A39 Road Bridge to West Ashford (Barnstaple)	N/A	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	The dunes at Braunton Burrows are expansive and unlikely to be impacted in a way that compromises their defence function in the life time of the SMP, therefore a policy of NAI is considered the only realistic option as there is no reason to intervene with these dunes, that are environmentally designated, from a flood and coastal defence perspective.
7c22 – West Ashford to Braunton (east bank of River Caen)	Hold	MR	MR	MR	MR	MR	MR	MR	MR	MR	
7c23 – Braunton to Horsey Island (west bank of River Caen)	Hold / Observe & Monitor	MR	MR	MR	MR	MR	MR	MR	MR	MR	
7c24 – Horsey Island	Hold	MR	MR	MR	MR	MR	MR	HTL	HTL	HTL	
7c25 – Horsey Island to Crow Point	Observe & Monitor	MR	MR	MR	MR	MR	MR	HTL	HTL	HTL	
7c26 – Crow Point & Crow Neck	Observe & Monitor	MR	MR	MR	NAI	NAI	NAI	HTL	HTL	HTL	
7c27 – Braunton Burrows	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	
7c28 – Saunton Down	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	
POLICY SCENARIO AREA D: SAUNTON DOWN TO BAGGY POINT (CROYDE BAY)											
7c29 – Croyde Sands	Observe & Monitor	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	There is only a very small length of defence along part of the north side of Croyde Bay that is otherwise a naturally functioning embayment with areas of dunes and cliffs. Cliff recession is small and the dunes are healthy with the exception of some localised erosion caused by recreational activity.

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
7c30 – Middleborough Hill (Croyde Bay north)	Hold	HTL	NAI	NAI	NAI	NAI	NAI	HTL	HTL	HTL	As such the economics case for continuing to intervene is poor and this is reflected in Scenario's A and B that examine the implications of not intervening in this area in the medium to long term within any part of Croyde Bay. Scenario C tests the implications of allowing the short length of defence at Middleborough Hill, that is privately owned, to be retained.
7c31 – Middleborough Hill (Croyde Bay north) to Baggy Point	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	
POLICY SCENARIO AREA E: BAGGY POINT TO MORTE POINT (WOOLACOMBE BAY)											
7c32 – Baggy Point to Napps Cliff (Putsborough)	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	There is a small length of defence along part of the southern end of Woolacombe Bay that is otherwise a naturally functioning embayment with areas of dunes and cliffs. Cliff recession is small and the dunes are healthy with the exception of some localised erosion caused by recreational activity. As such the economics case for continuing to intervene is poor and this is reflected in Scenario's A and B that examine the implications of not intervening in this area in the medium to long term within any part of Woolacombe Bay. Scenario C tests the implications of allowing the short length of defence at
7c33 – Putsborough Sands and Vention	Hold	HTL	HTL	NAI	NAI	NAI	NAI	HTL	HTL	HTL	
7c34 – Vention to Woolacombe Beach (Woolacombe Sands)	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	
7c35 – Woolacombe Beach	Observe & Monitor	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	
7c36 – Woolacombe to Morte Point	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
											Putsborough, that are privately owned, to be retained.
POLICY SCENARIO AREA F: MORTE POINT TO FORELAND POINT											
7d01 – Morte Point to Lee (west)	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI				The coast along this frontage is comprised of hard rock cliffs that experience very slow erosion, interspersed with localised areas of defences at places like Lee, Ilfracombe, Watermouth Slipway, Combe Martin and Lynmouth. Many of these defences protect assets that have significant value to the tourism economy of the area and wider region and so Scenario A assumes that these areas will be protected whilst currently undefended areas with little at risk from erosion are assumed to be areas where no intervention will occur; this will also conserve the environmental interests of these areas, many of which are designated for both geological and biological features. Scenario B tests the implications of not continuing to defend all areas where defences currently occur, as the economic case in these areas is not as certain as in other areas.
7d02 – Lee	Hold	HTL	HTL	HTL	HTL	NAI	NAI				
7d03 – Lee (east) to Ilfracombe (west)	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI				
7d04 – Ilfracombe	Hold	HTL	HTL	HTL	HTL	HTL	HTL				
7d05 – Ilfracombe (east – Larkstone Beach) to Hele Beach (west)	Do Nothing (Hold at Hillsborough)	NAI	NAI	NAI	NAI	NAI	NAI				
7d06 – Hele Beach	Hold	HTL	HTL	HTL	NAI	NAI	NAI				
7d07 – Hele Beach (east) to Watermouth Slipway	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI				
7d08 – Watermouth Slipway	Hold	HTL	HTL	HTL	NAI	NAI	NAI				
7d09 – Watermouth Slipway to Combe Martin	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI				
7d10 – Combe Martin	Hold	HTL	HTL	HTL	HTL	HTL	HTL				
7d11 – Combe Martin to Lynmouth	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI				

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
7d12 – Lynmouth	Hold	HTL	HTL	HTL	HTL	HTL	HTL				
7d13 – Lynmouth to Foreland Point	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI				
POLICY SCENARIO AREA G: FORELAND POINT TO HURLSTONE POINT											
7d14 – Foreland Point to Gore Point	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	The western part of this frontage is comprised of undefended, naturally functioning, environmentally designated cliffs that form part of Exmoor National Park. The rate of future recession is predicted to be low and there are very few assets at risk. Therefore a policy of NAI is the only realistic option in this area. The eastern part of this frontage encompasses Porlock Bay, which is dominated by a barrier beach that breached in the mid-1990's. Porlock Weir is a small settlement in the western part of Porlock Bay that has a number of small structures that also provide defence function. Scenario A tests the implications of continuing to defend Porlock Weir whilst allowing the rest of Porlock Bay to evolve more naturally under a policy of MR, with consideration given to the need for set-back defences to reduce inland flood risk as the barrier beach is allowed to continue to roll back as sea levels rise. Scenario C takes this further by testing the implications of defending to the north and west of Porlock Weir to reduce the risk of
7d15 – Gore Point to Porlock Weir	Observe & Monitor	NAI	NAI	NAI	NAI	NAI	NAI	HTL	HTL	HTL	
7d16 – Porlock Weir	Hold	HTL	HTL	HTL	HTL	NAI	NAI	HTL	HTL	HTL	

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
7d17 – Porlock Weir to Hurlstone Point	Retreat	MR	MR	MR	NAI	NAI	NAI	MR	MR	MR	outflanking from this direction. Scenario B tests the implications of allowing Porlock Bay become more naturally functioning, with no set back defences to reduce any risk as barrier roll back occurs and withdrawal of defence at Porlock Weir where the economic case for continued defence is uncertain.
POLICY SCENARIO AREA H: HURLSTONE POINT TO HINKLEY POINT											
7d18 – Hurlstone Point to Minehead (west)	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	The western and eastern ends of this frontage are comprised predominantly of undefended cliffs that are experience slow erosion. The future erosion rate is not predicted to accelerate due to the resistant geology of many of these cliffs and as such the policy tested in these areas under each scenario seeks to conserve these natural areas, that are also environmentally designated for their geological features. This includes withdrawing defence at Lilstock where the economic case for ongoing defence provision is poor. The rest of this frontage is comprised of low-lying areas at risk of significant flooding, including the extensively developed area of Minehead, of which the continued protection is a key driver for policy in this area. Here the main issue is addressing the risk of flooding via the backdoor from the
7d19 – Minehead	Hold	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	
7d20 – The Warren (Minehead Golf Course)	Observe & Monitor	HTL	MR	MR	HTL	MR	MR	HTL	HTL	HTL	
7d21 – Dunster Beach	Observe & Monitor	HTL	MR	MR	HTL	MR	MR	HTL	HTL	HTL	
7d22 – Dunster Beach (east) to Ker Moor	Observe & Monitor	MR	HTL	HTL	MR	HTL	HTL	HTL	HTL	HTL	

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
7d23 – Blue Anchor	Hold	HTL	HTL	NAI	HTL	HTL	NAI	HTL	HTL	HTL	low-lying area to the east of Minehead, from Blue Anchor Bay. Scenario's A and B assess the options and implications of seeking to reduce this risk of backdoor flooding by establishing a set back defence position in the medium to long term. Scenario C tests the option of providing long term sustainable defence along the existing alignment of the shoreline. At Blue Anchor, a recent scheme has been constructed to provide long term defence of the local coast road, the B3191. Scenario's A and B test the implications for continuing to maintain this defence in the medium to long term to ensure that full benefit of the recent investment is achieved. However, under these scenarios the long term tests the implications of moving towards NAI when the defences need further upgrade, as alternative routes to the B3191 appear to be readily available a short distance inland. Scenario C tests the implications of upgrading and maintaining the defences here in the long term. At Watchet the key driver is to continue to protect this extensively developed area. However, to the east of the town localised defences to protect the holiday park at Doniford
7d24 – Blue Anchor to Watchet	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	
7d25 – Watchet to Doniford	Hold	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	
7d26 – Doniford to St Audries Bay	Observe & Monitor	HTL	HTL	HTL	NAI	NAI	NAI	HTL	HTL	HTL	
7d27 – St Audries Bay	Observe & Monitor / Hold	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	
7d28 – St Audries Bay to Lilstock	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	
7d29 – Lilstock	Hold	HTL	NAI	NAI	NAI	NAI	NAI	HTL	NAI	NAI	

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
7d30 – Lilstock to Hinkley Point	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	are not thought likely to attract public funding. Scenario B tests the implications of these localised defences not being maintained, whilst Scenario's A and C test the implication of continued defence of this area.
POLICY SCENARIO AREA I: HINKLEY POINT TO BREAN DOWN											
7d31 – Hinkley Point	Hold	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	The continued protection of the Hinkley Point Nuclear Power Station is a key driver for policy at the western end of this frontage. Between Hinkley Point and Stolford there is potential to realign defences to create habitat. Scenario A tests the implications of delaying realignment until the long term whilst Scenario B assess realignment in the short term. Steart Peninsula forms the western side of the entrance to the Parrett Estuary. Scenario A tests the implications of implementing realignment along this peninsula both for the peninsula and the wider Parrett Estuary area. This reflects ongoing study by the Environment Agency and Bristol Port Authority, both of which are investigating habitat creation potential in this area. Scenario B tests the implications of not realigning but simply withdrawing defence in the medium term, whilst Scenario C tests the option to defend Steart Peninsula in its entirety for the life time of the SMP.
7d32 – Hinkley Point to Stolford	Hold	HTL	HTL	MR	MR	MR	MR	HTL	HTL	MR	
7d33 – Stolford	Observe & Monitor	HTL	HTL	MR	MR	MR	MR	HTL	HTL	HTL	
7d34 – Stolford to Wall Common	Observe & Monitor	MR	MR	MR	MR	MR	MR	MR	MR	MR	
7d35 – Steart Village	Observe & Monitor	HTL	HTL	MR	HTL	NAI	NAI	HTL	HTL	HTL	
7d36 – Steart Village (east) to Fenning Island	Observe & Monitor	MR	MR	MR	HTL	NAI	NAI	HTL	HTL	HTL	
7d37 – Fenning Island to Combwich	Observe & Monitor	MR	MR	MR	HTL	NAI	NAI	HTL	HTL	HTL	

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
7d38 – Combwich	Hold	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	The recent Parrett Estuary Flood Risk Management Strategy (FRMS) has investigated long-term management of the Parrett Estuary from Combwich to the River Brue and Scenario A tests these in combination with policies in the rest of the scenario area. The FRMS left open the long term option for realignment along the left bank between Combwich and Bridgwater, and this is tested in this area under Scenario B. The extensively developed area of Burnham-on-Sea and Highbridge is an important economic asset to the region and so the continued protection of the town is a key driver for this scenario area. North of Burnham-on-Sea sea defence is predominantly provided by dunes. These protect the extensive low-lying area of the Somerset Levels against the risk of flooding. The long-term sustainability of relying on dunes for this purpose is uncertain and so Scenario's A and B test the implications of implementing set-back defences in the medium to long term to both provide protection against flood risk to the wider Somerset Levels whilst also allowing the dune system to adapt to rising sea levels and so provide a natural defence line into the future. Scenario C tests the options and implications of holding the existing line of the dunes into the long-
7d39 – Combwich to Bridgwater (Parrett west)	N/A	HTL	HTL	HTL	MR	MR	MR	HTL	HTL	HTL	
7d40 – Bridgwater (upper Parrett Estuary)	N/A	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	
7d41 – Bridgwater to Dunball	N/A	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	
7d42 – Dunball to River Brue	Hold	HTL	MR	MR	HTL	MR	MR	HTL	MR	MR	
7d43 – Burnham-on-Sea and Berrow	Hold / Observe & Monitor	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	
7d44 – Berrow (north) to Brean (north)	Observe & Monitor (possibly Hold)	HTL	MR	MR	MR	MR	MR	HTL	HTL	HTL	
7d45 – Brean (north) to Brean Down	Hold	HTL	MR	MR	HTL	HTL	NAI	HTL	HTL	HTL	
7d46 – Brean Down (south side)	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
											term.
POLICY SCENARIO AREA J: BREAN DOWN TO ANCHOR HEAD (WESTON BAY)											
7e01 – Brean Down (north side) to Axe Estuary (west)	Do Nothing	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	NAI	This area contains the extensively developed town of Weston-super-Mare in the northern part. The continued protection of the town, which has recently had new sea defences constructed, is a key driver in this area. To the immediate south of the hard defences at Weston-super-Mare a small length of dunes provide a natural defence against flood risk. The long term sustainability of relying on the dunes as the flood defence is uncertain and management to control the realignment and possibly introduce a set back defence, whilst allowing the dunes to evolve as naturally as possible, are considered in Scenario's A and B. Scenario C tests the implications of holding the existing line of the dunes as the long term defence option. At the southern end of this frontage lies the Axe Estuary. The estuary is completely constrained by defences and Scenario A tests the implications
7e02 – Axe Estuary west bank (mouth to near Diamond Farm)	Hold (locally Retreat)	HTL	HTL	HTL	HTL	HTL	NAI	MR	MR	MR	
7e03 – Axe Estuary east bank (near Diamond Farm to mouth)	Hold (locally Retreat)	HTL	HTL	HTL	HTL	MR	HTL	MR	MR	MR	
7e04 – Axe Estuary mouth to Uphill	Hold (possibly Retreat long term)	HTL	HTL	HTL	HTL	MR	HTL	HTL	HTL	HTL	
7e05 – Uphill to Weston-super-Mare (south)	Hold (possibly Retreat long term)	MR	MR	MR	NAI	NAI	MR	HTL	HTL	HTL	

Possible Policy Unit & Number	SMP1 Policy	Scenario A			Scenario B			Scenario C			Justification
		0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	0-20 year	20-50 year	50-100 year	
7e06 – Weston-super-Mare	Hold	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	HTL	of continuing to maintain these defence lines. However, there is potential within the estuary for undertaking managed realignment to create habitat. This is tested in Scenario's B and C.

Annex F.2 – Policy Appraisal Shoreline Response Assessment

Introduction

This annex provides assessment of the likely impacts of policy scenarios upon coastal and estuarine processes in order to appraise the potential sustainability of each policy. The output of this report feeds directly into the appraisal of policy options in terms of environmental, social and economic impacts.

The policy scenarios appraised in this report have been developed using the understanding of coastal dynamics and appreciation of the key coastal features developed from producing the baseline processes report (see **Appendix C**), the theme review (see **Appendix D**) and the issues and objectives tables (see **Appendix E**). We have also consulted with key stakeholders and elected members.

For each policy scenario, draft policy units have been identified, and for each policy unit one of the four SMP2 policy options has been assigned to each of the three epochs 0-20 years, 20-50 years and 50-100 years. These four policy options are:

- No Active Intervention (NAI);
- Hold the Line (HTL);
- Managed Realignment (MR); and
- Advance the Line (ATL).

Based upon the Baseline Process Understanding report (**Appendix C** of the SMP2), the individual policy units identified have been grouped into policy scenario areas, and the policies for each unit are appraised in the context of the process interactions that occur within each policy scenario area.

It should be noted that for the estuaries the proposed policies are primarily taken from the relevant Catchment Flood Management Plans (CFMP). It is clearly marked throughout this report where CFMP policies are accepted by the SMP2. However there are a number of areas where the CFMP policies are not thought to be appropriate for discrete lengths of estuary shoreline, and so in these places alternative policies to the CFMP policy are presented.

Policy Scenario A is our first approximation of appropriate policies, based upon our understanding of coastal dynamics and the key issues along this SMP coastline. Based upon feedback from key stakeholders and elected members, we have then appraised modifications to these policies for each stretch of coast. In general terms, the policies considered under Policy Scenario B consider a long term vision of a more naturally functioning coast, whilst the policies considered under Policy Scenario C assume that a primary driver in the future will be to protect most assets in the long term.

Policy Scenario A is presented in full, followed by a discussion for each area, which identifies how modifications to the policies (considered as part of Policy Scenarios B and/or C) may have a different impact on the coastal dynamics and shoreline evolution.

'POLICY SCENARIO A' ASSESSMENT TABLE

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
POLICY SCENARIO AREA: LUNDY			
7c01 – Landing Beach	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	At Landing Bay, defences include a concrete seawall with masonry splash wall, a concrete breakwater and stone gabion revetments. These structures will need to be improved (re-built with larger structures) during this period, along with implementation of cliff stabilisation measures, in order to maintain the standard of defence. It is unlikely that these defences would attract public funding; however, the defences are vital to retaining the only access link from the coast to the rest of the island.	The various defences and cliff stabilisation measures will require ongoing maintenance during this epoch.	The various defences and cliff stabilisation measures will require ongoing maintenance during this epoch. Further improvements could be required towards the end of this epoch, as some defences reach the end of their design life.
	This section is the only defended section of coast on Lundy, with defences located at the back of the pocket beach at Landing Bay. These defences will need to be improved during this epoch, and likely require cliff stabilisation measures to be implemented, in order for these defences to continue to prevent toe erosion of the soft shale cliffs and reduce the risk of cliff recession, such that the only access road to the rest of the island can be maintained. Continued slow erosion of adjacent undefended granite and slate cliffs would continue to provide sediment inputs to the pocket beach in this area during this epoch, although the total amount of	The pocket beach at Landing Bay is reliant on incoming sediment from the cliffs the adjacent undefended cliffs. The continued maintenance of defences along this section will reduce cliff erosion along this stretch and therefore reduce the local input of sediment to the fronting beach, which will therefore be less than would otherwise be expected Therefore the beach may become increasingly vulnerable to erosion or submergence with sea level rise.	Some beach steepening and narrowing, and possible submergence, at Landing Bay is expected as a result of sea level rise and the reduced input of new sediment from cliff erosion as a result of ongoing maintenance of the defences.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	sediment supply will not be realised as continued defence will limit the erosion of cliffs at the back of Landing Beach that would otherwise supply further /sediment.		
7c02 – Lundy (except Landing Beach)	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	The majority of Lundy, as covered by this section, consists of undefended cliffs, and under this scenario these would continue to evolve naturally.	No defences.	No defences.
	The resistant granite cliffs have historically been eroding very slowly. In the future it is predicted that recession will continue to occur at similar historic rates such that there would be negligible change along most of this coastline during this epoch. Along the south-east of the island, soft slates are exposed and these are more prone to erosion, with up to 10m of recession possible due to infrequent rock falls. Erosion of these softer cliffs will provide material to the small pocket beaches, which are predicted to remain relatively stable.	Erosion of the granite cliffs will continue to occur at very low rates, with negligible change expected around the majority of the island; in isolated areas, where softer slates are exposed, up to 10m of recession is possible as a result of small scale, infrequent rock falls. There could be loss of some isolated pocket beaches, as they become submerged Although sea level rise will increase exposure of the cliffs, the resistant nature of the granite cliffs means that it is unlikely to affect the erosion rate. Where small pocket beaches lie at the toe of these cliffs, these could become submerged and lost under a scenario of sea level rise. Where the softer slates outcrop, sea level rise could potentially increase erosion rates slightly, although sediment would be supplied to the fronting beaches, which would provide some toe	The resistant granite cliffs have historically been eroding very slowly. In the future it is predicted that recession will continue to occur at similar historic rates such that this frontage would change negligibly during this epoch, with up to 10m of recession possible in isolated areas, where softer slates are exposed, as a result of small scale, infrequent rock falls. Sea level rise may cause erosion rates along the softer slate cliffs to increase as the cliffs become increasingly exposed to wave action. Material supplied from this erosion may be retained locally as small beaches.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		protection.	
POLICY SCENARIO AREA: HARTLAND POINT TO WESTWARD HO!			
7c03 – Hartland Point to Clovelly	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section of coast is undefended.	No defences.	No defences.
	The cliffs along this coastline are generally cut into interbedded sandstones and shales, which have been subject to faulting and folding in the geologically past. As a result, the cliffs are subject to different rates of erosion, with some stretches being fairly resilient to erosion and other stretches prone to large landslips. The shales tend to be more easily eroded than the sandstones but rates of erosion also depend upon the bedding and the degree of faulting and folding. Overall, this coastline has generally experienced low rates of erosion and this trend is expected to continue in the future, such that generally this frontage will maintain a similar form during this epoch. Along much of this coastline erosion is likely to be less than 10m over the next 20 years. However, certain stretches may be prone to landslip events, which could cause between 10 and 50m during a single event. Narrow cobble and gravel beaches are present at the toe of the cliffs. To the west of Chapman Rock these tend to be confined to small pocket beaches, but to the east they become more continuous, forming a barrier beach. Much of this	Much of this coast will continue to erode slowly, with less than a total of 25m expected by year 50. However, there is a risk of localised landslide events, which could result in up to 10 to 50m of erosion during a single event. Areas where shales outcrop and previous landslips are evident are most at risk. Sea level rise is predicted to increase erosion rates along these softer cliffs as the cliffs come under increasing attack due to higher water levels. The frequency of landslips may also be affected by any increase in rainfall resulting from future climate change; however, due to uncertainty in the possible future changes in precipitation, no direct account has been taken of this in the predictions. Erosion of the cliffs will supply sediment to the beaches, although much of the material that makes up these cobble and gravel beaches is essentially relict. Finer material will be transported westwards and either deposited on the intermittent beaches or transported west beyond Hartland Point to be recirculated within the Bideford Bay circulatory system. The pocket beaches along the frontage to the	Continual slow erosion of the cliffs is expected along much of this frontage; although there is a risk of isolated landslips where softer rocks outcrop. Here the risk of landslips will increase due to sea level rise and any change in precipitation patterns. Where the coast is backed by resistant cliffs, sea level rise is unlikely to affect the rates of erosion. Up to 50m may be expected along much of the frontage, but this will vary according to the local geology, which varies due to the complex pattern of faulting and folding along this stretch of coast. In a single landslip event up to 10 to 50m of erosion could occur. Although the beaches are mainly relict and composed of gravel and cobble, any erosion of the cliffs may contribute to their stability. As sea levels rise, some of the smaller pocket beach along the western end of this frontage may become submerged, but along the rest of the frontage beaches are likely to be retained, but due to the predicted increase in water levels may be narrow and become more volatile as larger waves will be able to reach the upper beach on a more

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	material is likely to be relict, but cliffs may also input some material to the beaches. The coarser material will tend to remain locally and be moved very slowly along in a net eastwards direction, with the finer sediments transported further eastwards to be recirculated within the Bideford Bay circulatory system. During this period both the barrier beaches and the pocket beaches are likely to remain relatively stable.	west of Chapman Rock are self-contained; therefore they are predicted to remain stable during this epoch as eroded sediment is retained locally.	frequent basis.
7c04 – Clovelly	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	This section of coast covers the coastal frontage of the village of Clovelly, which rises steeply inland from the coast. Defences at Clovelly comprise of harbour structures (breakwater) and a seawall. These defences provide localised erosion protection for the resistant inter-bedded sandstone and shale cliff, as well as provide flood protection to the low-lying properties situated at coastal frontage of Clovelly. These defences will require maintenance during this period to ensure that they continue to provide an adequate level of protection.	The defences at Clovelly will need to be upgraded during this period. This is likely to involve re-building the existing structures to be much larger such that they are able to provide the required level of protection in the future as sea level rise and other climate change impacts occur.	The defences at Clovelly, re-built in the medium term, would continue to be maintained during this period.
	At Clovelly there is currently a small harbour enclosed by breakwaters and backed by a seawall. These structures will continue to afford protection to the enclosed beach and backing infrastructure as they are maintained throughout this period. The harbour structures will therefore	At Clovelly, the harbour structures and seawall are expected to need to be re-built during this period, to be much larger structures than at present such that they are able to provide the require levels of protection in the long-term as overtopping becomes more frequent with sea	The structures at Clovelly will continue to affect alongshore transport along this stretch, with sediment being held to the west of the harbour arm. The harbour arm will also protect the enclosed beach area. However, some beach narrowing may occur as a result of higher sea

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	continue to affect the net eastwards drift of sediment, but are only likely to have a very local effect as Clovelly sits within a slight natural embayment. The continued presence of these defences will also continue to reduce erosion of the cliffs locally, though this impact is unlikely to be significant in terms of preventing sediment entering the shoreline system. The beaches in this area are a continuation of the barrier beaches to the west, and these are likely to remain relatively stable in this period.	level rise. The harbour arm will continue to trap sediment and protect the enclosed beach, although a reduction in incoming sediment due to sea level rise may result in some cutback at the northern end. However, due to the slight natural embayment, and the shelter afforded from westerly conditions, sufficient beach is expected to be retained along this frontage to provide coastal defence.	levels. The frontage may also become more exposed to wave attack due to sea level rise, but the cliffs backing this frontage are very resistant and therefore unlikely to change.
7c05 – Clovelly to Rock Nose	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section of coast is largely comprised of undefended cliffs apart from localised defences at and Buck's Mill (gabions and seawall). It is unlikely that these defences would attract public funds for maintenance and improvements likely to be required to provide current levels of protection as sea levels rise. However, if alternative funds were available for this purpose, there is no reason not to permit their retention from a processes point of view.	If funds are not available to maintain and replace the defences at Buck's Mill (gabions and seawall), these may fail towards the end of this epoch. The majority of this frontage is comprised of undefended cliffs and these will continue to evolve naturally.	If not maintained due to lack of funding, the defences at Buck's Mills would not be present during this period, and as such, the coast will evolve naturally along with the majority of this undefended section of cliffed coastline.
	The cliffs along this coastline are generally cut into interbedded sandstones and shales, which have been subject to faulting and folding in the geologically past. As a result, the cliffs are subject to different rates of erosion, with some stretches	Much of this coast will continue to erode slowly, with less than a total of 25m expected by year 50. However, there is a risk of localised landslide events, which could result in up to 10 to 50m of erosion during a single event. Areas where shales	Continual slow erosion of the cliffs is expected along much of this frontage; although there is a risk of isolated landslips where softer rocks outcrop. Here the risk of landslips will increase due to sea level rise and any change in

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	being fairly resilient to erosion and other stretches prone to large landslips. The shales tend to be more easily eroded than the sandstones but rates of erosion also depend upon the bedding and the degree of faulting and folding. Overall, this coastline has generally experienced low rates of erosion and this trend is expected to continue in the future, such that generally this frontage will maintain a similar form during this epoch. Along much of this coastline erosion is likely to be less than 10m over the next 20 years. However, certain stretches may be prone to landslip events, which could cause between 10 and 50m during a single event. Narrow cobble and gravel beaches are present at the toe of the cliffs, and along this section this is continuous, forming a barrier beach between Clovelly and Babbacombe, where after the beaches become confined to small local pocket beaches fronted by foreshore rock platforms. Much of this material is likely to be relict, but cliffs may also input some material to the beaches. The coarser material will tend to remain locally and be moved very slowly along in a net eastwards direction, with the finer sediments transported further eastwards to be recirculated within the Bideford Bay circulatory system. During this period the beaches along this stretch are likely to remain relatively stable.	outcrop and previous landslips are evident are most at risk. Sea level rise is predicted to increase erosion rates along these softer cliffs as the cliffs come under increasing attack due to higher water levels. The frequency of landslips may also be affected by any increase in rainfall resulting from future climate change; however, due to uncertainty in the possible future changes in precipitation, no direct account has been taken of this in the predictions. Erosion of the cliffs will supply sediment to the beaches, although much of the material that makes up these cobble and gravel beaches is essentially relict. Finer material will be transported westwards and either deposited on the intermittent beaches or transported west beyond Hartland Point to be recirculated within the Bideford Bay circulatory system. If not maintained due to lack funds, failure of the short stretch of seawall and gabions at Bucks Mills would occur during this period. There could therefore be increased wave action at the toe of the cliffs and a risk that loss of these structures could result in reactivation of the cliffs behind, where a landslip occurred in 1989. The impact would, however, be very localised. However, if alternative funds are available, then the defences at Bucks Mills would need to be upgraded (re-built) during this period in order continue to provide localised protection and so	precipitation patterns. Where the coast is backed by resistant cliffs, sea level rise is unlikely to affect the rates of erosion. Up to 50m may be expected along much of the frontage, but this will vary according to the local geology, which varies due to the complex pattern of faulting and folding along this stretch of coast. In a single landslip event up to 10 to 50m of erosion could occur. Although the beaches are mainly relict and composed of gravel and cobble, any erosion of the cliffs may contribute to their stability. As sea levels rise, some of the smaller pocket beaches along this frontage may become submerged, but along the rest of the frontage beaches are likely to be retained, but due to the predicted increase in water levels may be narrow and become more volatile as larger waves will be able to reach the upper beach on a more frequent basis. At Buck Mills, if alternative funds are available, ongoing maintenance of the defences would provide continued protection of the cliff toe and reduce the risk of landsliding; however, outflanking will increasingly become an issue as a result of erosion of the undefended cliffs to the west. Therefore it is likely to become technically more difficult to maintain the current defences. If alternative funds are not available for this purpose, then this section would evolve in a

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	At Buck Mills there is a short stretch of seawall and gabions associated with access to the beach. These structures are assumed to remain during this period and will therefore continue to afford protection to the enclosed beach and backing infrastructure. However, it is unlikely that these defences would attract public funds to be maintained during this period, although if alternative (private) funds area available for this purpose, there is no reason not to permit retention of these defences during this epoch as it will have no adverse effect in term of coastal processes.	reduce the risk of localised erosion occurring. The section of defence here is short and therefore it is unlikely to be affecting large scale processes in terms of sediment inputs or alongshore transport; however continuing to defend here may become technically more difficult, particularly if the undefended cliff immediately to the west undergo further recession.	similar way to the rest of the undefended coast, with similar rates of cliff recession.
POLICY SCENARIO AREA: WESTWARD HO! TO SAUNTON DOWN			
7c06 – Westward Ho!	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Westward Ho! is protected along the majority of this stretch by a seawall with additional rock armour toe protection at the northern end of the wall. Maintenance and eventual replacement of these structures will be required towards the end of this epoch, with replacement structures being much larger than the present ones such that they are better able to provide adequate levels of protection in the long term. The western end of this stretch, however, is comprised of undefended cliffs, the erosion of which could pose an outflanking risk in the future.	Having been upgraded towards the end of the first epoch, the seawall at Westward Ho! and associated rock armour are predicted to require ongoing repair and maintenance during this epoch. Erosion of the undefended cliffs could cause outflanking in this epoch, and so measures to bolster the western end of defences at Westward Ho! may be required.	The seawall at Westward Ho! and associated rock armour are predicted to require ongoing repair and maintenance during this epoch. Erosion of the undefended cliffs could cause outflanking in this epoch, and so measures to bolster the western end of defences at Westward Ho! may be required.
	The western end of this frontage is characterised	At the western end of this frontage, erosion of	Erosion of the low undefended cliffs at the

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	by low cliffs, which are replaced by extensive low-lying land, which is at risk of flooding, as the coast progresses eastwards towards the spit and dune system of Northam Burrows (that lies to the north-east of this stretch), which has formed at the mouth of the Taw/Torridge estuary. This spit and dune complex extends from Westward Ho! into the mouth of the Taw/Torridge Estuary, and towards Westward Ho! is fronted by a cobble/pebble ridge known as the 'Pebble Ridge'. Seaward of the ridge (and fronting much of the Westward Ho! frontage) is a wide intertidal beach consisting of a thin veneer of sand overlying clays, which merges, to the north, into the tidal delta of the Taw/Torridge Estuary (Pethick, 2007). The low cliffs along the western part of this frontage are cut into raised beach deposits, which consist of sand and rounded pebbles. These are currently eroding and therefore release pebbles back into the beach system. These low cliffs, which are largely undefended, are expected to continue to erode at a similar rate to present, which is estimated to be in the band of 0.1 and 0.5m/year. Further east along the low-lying parts of Westward Ho! there is a seawall and revetment which will continue to prevent cliff erosion, although a trend of beach narrowing along this stretch is expected to continue. These defences prevent sediment inputs to the system; however	the undefended low cliffs would continue, which would release some sand and cobble sized sediments into the system. Pethick (2007) suggested that only sediments eroding from east of the Nose (i.e. this section of low, undefended cliffs) would be available to feed the Pebble Ridge to the east, due to the topography providing barriers to drift. However, such inputs are not significant enough to affect the net recession trend of the Pebble Ridge. This retreat of the Pebble Ridge could pose an outflanking risk to the eastern parts of Westward Ho! although this risk would be managed under this scenario as part of the 'Managed Realignment' policy for the adjacent Northam Burrows section, which would see extension of defences as necessary, along the low-lying parts of Westward Ho! that are currently considered to be 'in land' at the southern end of Northam Burrows. Maintenance of the defences along this Westward Ho! frontage would continue to protect against localised flooding and erosion; although beach narrowing would be expected and this, together with outflanking, along the adjacent undefended cliffs to the west, could make continued defences technically more difficult.	western end of this frontage would continue, with rates potentially increasing due to sea level rise. Maintenance of the defences at Westward Ho! would continue protecting against localised flooding and erosion; however, along these sections there will be increased issues of outflanking and undermining resulting from beach narrowing as the shoreline is unable to retreat naturally. Retreat, realignment and subsequent break-down of the Pebble Ridge to the north-east of this stretch will continue. This stretch of low-lying coast will therefore be at high risk from flooding due to breaching and increased overtopping along the adjacent stretch. It is unlikely that breaches, particularly at the southern end of the ridge (nearest this section at Westward Ho!), will seal naturally, and there may not be sufficient sediment available to allow human repair. However, under this scenario, the risk of flooding to the eastern parts of Westward Ho! that are currently considered to be 'in land' at the southern end of Northam Burrows, would continue to be managed as part of the 'Managed Realignment' policy for the adjacent Northam Burrows stretch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	it is thought unlikely that inputs from this short section of cliffs would be sufficient to change the overall evolution of the Pebble Ridge. The future defence of Westward Ho! will be affected by the future management of the Pebble Ridge, which in turn will be affected by the future management and evolution of the Taw/Torridge estuary and its associated tidal delta, which play an important role in the sediment circulation within the wider Bideford Bay. The Pebble Ridge at its southern end (the north-eastern boundary of this unit) is predicted to retreat landwards as sea levels rise. Under the policy of 'Managed Realignment' envisaged under this scenario for the adjacent Northam Burrows section, a new hard defence structure would be constructed along the southern area of Northam Burrows (fronting the developed area of Westward Ho! that is presently considered to be 'in land') in order to reduce the risk of flooding and outflanking to this defended section of Westward Ho!		
7c07 – Northam Burrows	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	This section of coast extends along the seaward face of Northam Burrows, which is an area of low-lying land that forms a spit and dune system that encloses the southern part of the mouth of the Taw/Torridge Estuary. Much of this frontage is undefended by hard	Under this scenario, the policy of 'Managed Realignment' would continue to seek to work with the natural tendency of the Pebble Ridge to rotate anti-clockwise to become more swash aligned as it rolls back onto the low-lying land. To this end, it is envisaged that the low-reflective	The policy of 'Managed Realignment' would continue to seek to work with the natural tendency of the Pebble Ridge to rotate anti-clockwise to become more swash aligned as it rolls back onto the low-lying land. To this end, it is envisaged that the low-reflective (revetment or

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	defence structures at this time, though protection is afforded to some degree by the cobble/pebble ridge that runs along this length, known as the 'Pebble Ridge'. Along the northern seaward side of Northam Burrows, there is rock armour protection to the northern end of the spit where it re-curves into the estuary mouth. This would be maintained under this scenario in support of the wider aims of the 'Managed Realignment' policy. Under this scenario, the policy of 'Managed Realignment' would seek to work with the natural tendency of the Pebble Ridge to rotate anti-clockwise to become more swash aligned as it rolls back onto the low-lying land. To this end, it is envisaged that a low-reflective (revetment or armoured embankment) defence would be constructed perpendicular to the ridge at the southern end of this stretch, fronting the developed area of Northam Burrows in order to reduce flood risk in this area as the ridge rolls back landwards. Along the northern end of this stretch, where the ridge would want to advance seawards, measures to encourage this progradation could be implemented, likely to involve construction of groynes to aid sediment retention in this area, and possibly aided by beach recycling activities if required. There may also need to be secondary defences (embankments) constructed around the	(revetment or armoured embankment) defence constructed perpendicular to the ridge at the southern end of this stretch in the short term, fronting the developed area of Northam Burrows in order to reduce flood risk in this area as the ridge rolls back landwards, may need to be extended eastwards during this epoch; though the need for this would be based upon ongoing monitoring. Along the northern end of this stretch, where the ridge would want to advance seawards, measures implemented in the short term to encourage this progradation would continue. However, this progradation may be limited by rising sea levels, and if not constructed in the short term, then secondary defences (embankments) would need to be constructed around the former landfill site at the northern end of Northam Burrows in order to ensure flood risk to this site is adequate. The rock armour protection along the northern end of the spit would also require ongoing maintenance, and eventual replacement, during this epoch, in support of the wider aims of the 'Managed Realignment' policy under this scenario.	armoured embankment) defence constructed perpendicular to the ridge at the southern end of this stretch in the short term, fronting the developed area of Northam Burrows in order to reduce flood risk in this area as the ridge rolls back landwards, may need to be extended eastwards during this epoch; though the need for this would be based upon ongoing monitoring. Along the northern end of this stretch, where the ridge would want to advance seawards, measures implemented in the short term to encourage this progradation would continue. However, this progradation may be limited by rising sea levels, and so the secondary defences (embankments) constructed around the former landfill site at the northern end of Northam Burrows, would require ongoing maintenance during this epoch in order to ensure flood risk to this site is adequate. The rock armour protection along the northern end of the spit would also require ongoing maintenance during this epoch, in support of the wider aims of the 'Managed Realignment' policy under this scenario.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	former landfill site at the northern end of Northam Burrows in order to ensure flood risk to this site is adequate.		
	This frontage is characterised by the extensive spit and dune system of Northam Burrows, which has formed at the mouth of the Taw/Torridge estuary. This spit and dune complex is set back about a kilometre from the cliffed coastline to the west. It is fronted by a pebble and cobble beach ridge, known as the Pebble Ridge, which extends from Westward Ho! at its southern end into the mouth of the Taw/Torridge Estuary. Seaward of the ridge is a wide intertidal sand beach, which merges, to the north, into the tidal delta of the Taw/Torridge Estuary. The Pebble Ridge currently receives only limited inputs of new sediment and historically it has been eroding; this erosion is predicted to continue during this epoch, associated with a gradual movement towards swash-alignment from the previous drift-aligned shoreline. The ridge crest is narrowing and lowering and, as such, the risk of overtopping and possibly even breaching is predicted to increase during this epoch. Any breaches during this period would be expected to be re-sealed by littoral processes as there is sufficient material being moved alongshore to achieve this. The flood risk to low-lying parts of Westward Ho! would increase as a result of these processes, and so to minimise this risk, defences	Historically the pebble ridge that fronts this section has been realigning towards a swash-aligned position. This has meant that the southern end of the feature has retreated more rapidly than the northern end. This landward roll back of the ridge has been accompanied by a net reduction in volume. This process is expected to continue in the future as it is not thought that the feature has yet attained a swash-aligned position. It has been postulated that the rate of retreat could increase exponentially in the future, with between 100 and 150m retreat possible by year 50. In order to continue to protect the eastern part of Westward Ho! (the southern end of Northam Burrows), continued maintenance and possible extension of the defence constructed in the short term perpendicular to the ridge will occur. As material is moved from south to north and is not being replaced in sufficient quantities from further south, the risk of the Pebble Ridge becoming breached will increase during this period and it is likely that over time these breaches will not become sealed naturally. This will expose the low-lying area behind and the dunes at Northam Burrows to erosion and flooding. The location of any breach may be	Retreat, realignment and subsequent break-down of the Pebble Ridge will continue, with greatest rates of erosion at the northern end. The ridge could have retreated over 300m in total by the end of this period, although low-lying eastern parts of Westward Ho! would continue to be protected by the maintenance of the defence constructed in the short term perpendicular to the ridge. This stretch of low-lying coast will therefore be at high risk from flooding due to breaching and increased overtopping. It is unlikely that breaches, particularly at the southern end, will seal naturally therefore a number of tidal inlets may be present, which may accelerate the rate of barrier breakdown. These inlets may, however, allow sediment incursion into these back-barrier areas allowing accumulation of finer sediments in the long-term; however, this is likely to be a slow process (Orford, 2004: Pethick, 2007). There is, however, a small possibility that a pulse of sediment could be supplied to this shoreline, should a large landslip event occur to the west. However, it has been questioned whether sediment would actually reach this frontage, even if such an event occurred, due to the landward

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	would be constructed at the southern end of Northam Burrows, perpendicular to the ridge crest. Sediment eroded from the cliffs to the south-west will be moved along this frontage, but finer sediments are likely to continue northwards into the mouth of the estuary and from there either be moved into the outer estuary or into the sediment circulation system and eventually back onto these beaches. The transport of coarser sediments is more limited and there is a very limited supply of new sediments; therefore the trend of net volume loss along the Pebble Ridge is expected to continue.	significant, for example a breach into Sandymere Lagoon may result in the development of a tidal inlet. Sea level rise will also increase the likelihood of hinterland flooding and breaching of the ridge. It is thought unlikely the Taw/Torridge estuary would cut an alternative route through the low-lying area behind the barrier. There may be increased pressure at the mouth of the estuary, but changes here are expected to be small due to the influence of the cobble ridge at Grey Sand Hill.	retreat of the ridge (Orford, 2004). It is thought unlikely the Taw/Torridge estuary would cut an alternative route through the low-lying area behind the barrier. There may be increased pressure at the mouth of the estuary, but changes here are expected to be small due to the influence of the cobble ridge at Grey Sand Hill.
7c08 – Skern Salt Marsh to Appledore (west)	**Policy Assessed = Hold the Line**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	This section encompasses the inner part of the Northam Burrows spit and dune complex where it enters the Taw/Torridge Estuary. It is defended by a combination of embankment and rock revetment defences, and fronted a narrow shingle ridge and an expanse of salt marsh and intertidal mudflats. Under this scenario, these defences would be monitored and maintained to ensure they continue to provide protection against the risk of flooding from this area, particularly to the former landfill site located at the northern end of Northam Burrows. This would support the measures in the adjacent Northam Burrows	Under this scenario, the existing defences would be maintained as long as possible during this epoch. However, as they reach the end of their effective life, the defence position would be moved 'landwards' in order to provide space for the mudflats and salt marsh fronting this area to adapt as sea levels rise (i.e. to minimise the impacts of coastal squeeze). Any such realignment of defences would, however, need to consider the evolution of the seaward side of Northam Burrows spit, which will become increasingly swash-aligned as it too rolls back onto the low-lying hinterland in response to sea level rise.	Under this scenario, if not occurred during the medium term, then the defence position would be moved 'landwards' in order to provide space for the mudflats and salt marsh fronting this area to adapt as sea levels rise (i.e. to minimise the impacts of coastal squeeze). Any such realignment of defences would, however, need to consider the evolution of the seaward side of Northam Burrows spit, which will become increasingly swash-aligned as it too rolls back onto the low-lying hinterland in response to sea level rise.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	section which envisages construction of a secondary defence on the seaward side of the landfill site for the same purpose.		
	The channel in the outer estuary is characterised by a number of rock outcrops which ultimately constrain channel movement. The mouth of the estuary is also constrained by the high rates of longshore transport, which have resulted in the formation of the two spits on either side of the mouth (in the case of this stretch, Northam Burrows). Despite the trend for swash aligned along the open coast shoreline, during this period, little change is anticipated in the rate of longshore drift; therefore this will remain a constraint on the mouth and so this area at Skern. The defences along this stretch (and within the wider outer Taw/Torridge Estuary) will remain the same as today; therefore the current trend of very slow accretion within the estuary is likely to continue.	During this period the impact of accelerated sea level rise and changes in the alignment of the Pebble Ridge, along the adjacent open coast stretch, may start to have an impact on the estuary and in particular the outer estuary, including this area at Skern. Realignment of defences in this epoch along this stretch would provide space for intertidal mudflats and salt marsh to adapt to increased pressures (i.e. erosion and coastal squeeze), whilst still reducing the risk of flooding from this area to the wider low-lying expanse of Northam Burrows. A net trend of continued, slow infilling is expected under a scenario of sea level rise and the estuary will also attempt to widen at its mouth (Pethick, 2007). The channel bed is over-deepened by more than 15m below its present level, and therefore sea level rise is not predicted to cause an increase in channel size, rather a reduction of infilling rates (Pethick, 2007). There are geological constraints, but also the strong longshore movement of sand has also been a constraint on the mouth width. The rate of sediment transport into the estuary from the Northam Burrows frontage may be affected by any breaches occurring during this period, although sand may still be transported in	There is a high level of uncertainty with regard to how the estuary will evolve as sea level rise. In general the trend of slow infilling is expected to continue, with sediments from alongshore and the nearshore being moved into the estuary. The mouth of the estuary will also attempt to widen in response to an increased tidal prism. This will likely put increasing pressure (i.e. erosion and coastal squeeze) on the intertidal mudflats and salt marsh at Skern; this would be mitigated to some extent under this scenario by these areas being able to adapt landwards towards the realigned defence position. The evolution of the Taw and Torridge estuaries will remain constrained by defences. The estuary will therefore remain a net sink for sediment and as demand for sediment increase, this could result in increased erosion of the open coast shorelines as more sediment is moved into the estuaries. This could impact upon this section. It is, however, very difficult to quantify such impacts, without further study.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		the nearshore zone. The defences along this section, even once realigned; along with the cobble ridge along the northern part of Northam Burrows; will provide some protection. It is not likely that the channel would be able to cut a new path through the Northam Burrows back barrier area, as it occupies an incised channel and has remained in its current configuration for the duration of the Holocene period (Pethick, 2007). Continued defence along this stretch would also prevent this occurring.	
7c09 – Appledore	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	There are a range of flood walls and embankments protecting the settlement of Appledore. Many of these defences are likely to require upgrading (i.e. replacing with new, larger defences) towards the end of this epoch such that they are able to provide adequate levels of protection in the long term as sea levels rise.	Defences re-built in the short term would require ongoing maintenance during this epoch, whilst any defences not replaced in the short term will need to be upgraded during this epoch (i.e. also replaced with larger structures), such that they are able to provide adequate levels of protection in the long term as sea levels rise.	There would be ongoing maintenance of the various defences along the Appledore frontage during this epoch.
	During this period, the defences would be maintained and are generally expected to remain in their current condition (or better as and when they are upgraded in the latter part of this epoch) and therefore little change is expected within this part of the Torridge Estuary, with current trends expected to continue. This may place increased stress on the defences at Appledore due to the current position of the meanders, and so any	The defences will continue to fix the shoreline position and minimise the risk of hinterland flooding at Appledore. Under a scenario of sea level rise, the net trend of infilling is likely to continue within the estuary, albeit at a slow rate due to the lack of availability of muddy sediments in the coastal system. Configurations of the low water channel will	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The Torridge is extremely confined by its geology, with limited opportunity for salt marsh development, even if sufficient sediments were available. Defences will also continue to fix the shoreline position in places, including along this stretch at Appledore,

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	replacement structures would need to consider how to mitigate these impacts.	influence future localised patterns of erosion, sediment transport and deposition within the intertidal area fronting the defences at Appledore. North of Torridge Bridge (which includes this stretch), increases in meander amplitude, as a result of sea level rise, are predicted to impact channel banks on both sides of the estuary (Pethick, 2007) including in particular those at Appledore. Channel widening and meander development will therefore increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007).	and minimise the risk of hinterland flooding. As sea level rise accelerates, the estuary is expected to continue to slowly infill, although this accretion may reduce (Pethick, 2007). North of Torridge Bridge (which includes this stretch) increases in meander amplitude as a result of sea level rise are predicted to impact channel banks on both sides of the estuary, including those at Appledore. Channel widening and meander development will increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007). Acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the estuary, increasing the potential for sediment reworking both by waves and currents.
7c10 – Appledore to Northam	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	This part of the western bank of the estuary is defended in parts by embankment type defences, which are backed by steeply rising ground that constrains the estuary along this length. It is fronted by a varying expanse of intertidal mudflats. The embankment defences will require maintenance during this epoch.	Existing embankments will require maintenance and eventual upgrading during this period under this scenario.	Having been re-built with larger defences better suited to provide adequate levels of defence as sea levels rise in the medium term, the embankment defences along this stretch will require ongoing maintenance during this period.
	During this period, the defences are generally expected to remain in their current condition and	Where they occur, the defences will continue to fix the shoreline position along this stretch and	Future change is difficult to predict due to the uncertainty of estuary development following sea

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	therefore little change is expected within this part of the Torridge Estuary, with current trends expected to continue. This may place increased stress on the defences along this stretch however, due to the current position of the meanders.	minimise the risk of hinterland flooding. Under a scenario of sea level rise, the net trend of infilling of the estuary is likely to continue, albeit at a slow rate due to the lack of availability of muddy sediments in the coastal system. Configurations of the low water channel will influence future localised patterns of erosion, sediment transport and deposition within the intertidal area. North of Torridge Bridge (which includes this stretch), increases in meander amplitude, as a result of sea level rise, are predicted to impact channel banks along the estuary (Pethick, 2007). Channel widening and meander development will therefore increase pressure on the defences along this stretch during this epoch, resulting in increased need for maintenance (Pethick, 2007). The naturally rising ground along the rest of this stretch will, however, constrain the evolution of the estuary in this area.	level rise and climate change. The Torridge is extremely confined by its geology, with limited opportunity for salt marsh development, even if sufficient sediments were available. Defences along this stretch will also continue to fix the shoreline position and minimise the risk of hinterland flooding. The naturally rising ground along the rest of this section will also result in the shoreline being fixed in a similar way. As sea level rise accelerates, the estuary is expected to continue to slowly infill, although this accretion may reduce (Pethick, 2007). North of Torridge Bridge (which includes this stretch) increases in meander amplitude as a result of sea level rise, are predicted to impact channel banks along the estuary. Channel widening and meander development will increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007). Acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the estuary, increasing the potential for sediment reworking both by waves and currents.
7c11 – Northam and Bideford	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	There are a range of flood walls and embankments protecting the settlements of Northam and Bideford against the risk of flooding.	Existing defences will require ongoing maintenance and repair during this period. It may also be necessary to raise the height of the	Existing defences will require ongoing maintenance and repair during this period. It may also be necessary to either raise the height of the

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	Many of these defences were upgraded in the recent past and these would be maintained during this epoch.	defences during this epoch as sea level rises.	defences further during this epoch as sea level rise accelerates, or even re-build the defences in the latter part of the this epoch as the recent scheme reaches the end of its design life.
	During this period, the defences along this stretch are generally expected to remain in their current condition and therefore little change is expected along this part of the Torridge Estuary, with current trends expected to continue. This may place increased stress on the defences at Bideford and Northam due to the current position of the meanders.	The defences will continue to fix the shoreline position along this stretch and minimise the risk of hinterland flooding. Under a scenario of sea level rise, the net trend of infilling of the estuary is likely to continue, albeit at a slow rate due to the lack of availability of muddy sediments in the coastal system. Configurations of the low water channel will influence future localised patterns of erosion, sediment transport and deposition within the intertidal area. North of Torridge Bridge (which includes the northern part of this stretch), increases in meander amplitude, as a result of sea level rise, are predicted to impact channel banks along the estuary (Pethick, 2007). Channel widening and meander development will therefore increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007).	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The Torridge is extremely confined by its geology, with limited opportunity for salt marsh development, even if sufficient sediments were available. Defences along this stretch will also continue to fix the shoreline position and minimise the risk of hinterland flooding. As sea level rise accelerates, the estuary is expected to continue to slowly infill, although this accretion may reduce (Pethick, 2007). North of Torridge Bridge (which includes the northern part of this stretch) increases in meander amplitude as a result of sea level rise are predicted to impact channel banks on both sides of the estuary, e.g. along the settlements of Appledore and Instow. Channel widening and meander development will increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007). Acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the estuary, increasing the potential for sediment reworking both by waves and

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
			currents.
7c12 – Upper Torridge Estuary (east and west banks between Bideford and Weare Gifford)	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Parts of this stretch (particularly low-lying areas) are protected mainly by embankment defences, although there are some short lengths of flood wall defences at places like Hallspill. Other parts of this upper Torridge Estuary are undefended, being flanked by steeply rising ground that naturally constrains the estuary. These defences are likely to require maintenance during this period, although the main activity will be monitoring erosion of the banks to inform when (or if) intervention is required.	There would be ongoing monitoring of the embankments along this stretch to determine if and when maintenance, or even re-building, of the defences along parts of this stretch is required; this will be driven by extent and rate of bank erosion.	There would be ongoing monitoring of the embankments along this stretch to determine if and when maintenance, or even re-building, of the defences along parts of this stretch is required; this will be driven by extent and rate of bank erosion.
	During this period, the defences are generally expected to remain in their current condition and therefore little change is expected within the upper Torridge Estuary, with current trends expected to continue.	The defences will continue to fix the shoreline position in places and minimise the risk of hinterland flooding. Under a scenario of sea level rise, the net trend of infilling of the estuary is likely to continue, albeit at a slow rate due to the lack of availability of muddy sediments in the coastal system.	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The Torridge is extremely confined by its geology, with limited opportunity for salt marsh development, even if sufficient sediments were available. Defences will also continue to fix the shoreline position in places and minimise the risk of hinterland flooding. As sea level rise accelerates, the estuary is expected to continue to slowly infill, although this accretion may reduce (Pethick, 2007).
7c13 – East-the-Water to Torridge Bridge	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	There are a range of flood walls and embankments protecting the settlement of East-	Existing defences will require ongoing maintenance and repair during this period. It may	Existing defences will require ongoing maintenance and repair during this period. It may

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
(A39)	the-Water and the A386 road that runs along the northern part of this stretch on the east side of the Torridge Estuary. It is fronted by a varying expanse of intertidal mudflats and salt marsh. These defences are likely to require maintenance during this epoch.	also be necessary to raise the height or even re-build some of the defences during this epoch as sea level rises.	also be necessary to raise the height or even re-build some of the defences during this epoch as sea level rises.
	During this period, the defences are generally expected to remain in their current condition and therefore little change is expected along this part of the Torridge Estuary, with current trends expected to continue. This may place increased stress on the defences along this stretch due to the current position of the meanders.	The defences will continue to fix the shoreline position along this stretch and minimise the risk of hinterland flooding. Under a scenario of sea level rise, the net trend of infilling of the estuary is likely to continue, albeit at a slow rate due to the lack of availability of muddy sediments in the coastal system. Configurations of the low water channel will influence future localised patterns of erosion, sediment transport and deposition within the intertidal area. Channel widening and meander development will therefore increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007).	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The Torridge is extremely confined by its geology, with limited opportunity for salt marsh development, even if sufficient sediments were available. Defences along this stretch will also continue to fix the shoreline position in places and minimise the risk of hinterland flooding. As sea level rise accelerates, the estuary is expected to continue to slowly infill, although this accretion may reduce (Pethick, 2007). Channel widening and meander development will increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007). Acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the estuary, increasing the potential for sediment reworking both by waves and currents.
7c14 – Torridge	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
Bridge (A39) to Instow	This stretch is defended by a range of embankment and flood wall defences located at the back of a varying expanse of intertidal mudflats and salt marsh. These defences will require ongoing maintenance during this epoch.	Existing defences will require maintenance and eventual upgrading during this period, with existing defences being replaced with much larger defences such that they are able to provide protection against flooding and erosion to the B3233 road that runs along the length of this stretch.	Having been upgraded in the medium term, defences along this stretch will require ongoing maintenance during this epoch.
	During this period, the defences are generally expected to remain in their current condition and therefore little change is expected along this part of the Torridge Estuary, with current trends expected to continue. This may place increased stress on the defences along this stretch due to the current position of the meanders.	The defences along this shoreline will continue to fix the shoreline position in places and minimise the risk of hinterland flooding. Under a scenario of sea level rise, the net trend of infilling of the estuary is likely to continue, albeit at a slow rate due to the lack of availability of muddy sediments in the coastal system. Configurations of the low water channel will influence future localised patterns of erosion, sediment transport and deposition within the intertidal area. North of Torridge Bridge (which includes this stretch), increases in meander amplitude, as a result of sea level rise, are predicted to impact channel banks along this part of the estuary (Pethick, 2007). Channel widening and meander development will therefore increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007).	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The Torridge is extremely confined by its geology, with limited opportunity for salt marsh development, even if sufficient sediments were available. Defences along this stretch will also continue to fix the shoreline position in places and minimise the risk of hinterland flooding. As sea level rise accelerates, the estuary is expected to continue to slowly infill, although this accretion may reduce (Pethick, 2007). North of Torridge Bridge (which includes this stretch), increases in meander amplitude as a result of sea level rise are predicted to impact channel banks along this part of the estuary. Channel widening and meander development will increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007). Acceleration in the rate of sea level rise would increase water depths, tidal prism and current

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
			velocities in the estuary, increasing the potential for sediment reworking both by waves and currents.
7c15 – Instow	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Range of flood walls and embankments protect the settlement of Instow along this stretch. Many of these defences are likely to need to be replaced with larger defences towards the end of this epoch such that they are able to provide adequate levels of protection in the long term as sea levels rise.	Defences re-built in the short term would require ongoing maintenance during this epoch, whilst any defences not replaced in the short term will need to be upgraded during this epoch (i.e. also replaced with larger structures), such that they are able to provide adequate levels of protection in the long term as sea levels rise.	There would be ongoing maintenance of the various defences along the Instow frontage during this epoch.
	During this period, the defences would be maintained and are generally expected to remain in their current condition (or better as and when they are upgraded in the latter part of this epoch) and therefore little change is expected within this part of the Torridge Estuary, with current trends expected to continue. This may place increased stress on the defences at Instow due to the current position of the meanders, and so any replacement structures would need to consider how to mitigate these impacts.	The defences will continue to fix the shoreline position and minimise the risk of hinterland flooding at Instow. Under a scenario of sea level rise, the net trend of infilling is likely to continue within the estuary, albeit at a slow rate due to the lack of availability of muddy sediments in the coastal system. Configurations of the low water channel will influence future localised patterns of erosion, sediment transport and deposition within the intertidal area fronting the defences at Instow. North of Torridge Bridge (which includes this stretch), increases in meander amplitude, as a result of sea level rise, are predicted to impact channel banks on both sides of the estuary (Pethick, 2007) including in particular those at Instow. Channel widening and meander	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The Torridge is extremely confined by its geology, with limited opportunity for salt marsh development, even if sufficient sediments were available. Defences will also continue to fix the shoreline position in places, including along this stretch at Instow, and minimise the risk of hinterland flooding. As sea level rise accelerates, the estuary is expected to continue to slowly infill, although this accretion may reduce (Pethick, 2007). North of Torridge Bridge (which includes this stretch) increases in meander amplitude as a result of sea level rise are predicted to impact channel banks on both sides of the estuary, including those at Instow. Channel widening and

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		development will therefore increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007).	meander development will increase pressure on the defences during this epoch, resulting in increased need for maintenance (Pethick, 2007). Acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the estuary, increasing the potential for sediment reworking both by waves and currents.
7c16 – Instow to Yelland	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Managed Realignment**
	A range of gabion, revetment and embankment defences protect low-lying areas of largely reclaimed farmland along this stretch, although defences also protect a small area of development along part of this frontage against the risk of flooding. These defences will require maintenance during this epoch, with areas of earth embankment possibly needing to also be rebuilt.	Existing defences would be maintained during this epoch whilst measures are developed to plan and implement the long term policy of 'Managed Realignment' under this scenario. The studies required during this stage would need to consider the impacts of implementing 'Managed Realignment' upon the wider sediment transport processes within the outer part of the Taw/Torridge Estuary, both in terms of individual impacts of realigning in this area alone, and cumulative impacts of undertaking realignment in this and other parts of the outer estuary system. Pethick (2007) highlights potential risks associated with cumulative effects of 'Managed Realignment' in the outer estuary, and much uncertainty exists at present.	Under this scenario, and if proved acceptable to do so, measures developed in the medium term for managing the realignment of defences along parts of this stretch could be implemented during this epoch. This would involve construction of set-back defence embankments and breaching of the existing defence line. If detailed studies in the medium term show it to be inappropriate to realign defences in this area, then the existing defences would need to be replaced with much larger defences.
	During this period little change is expected within this part of the Taw Estuary, with current trends expected to continue. Key areas at risk will be at the apex of meanders, although this is not	During this period the impact of accelerated sea level rise will become more important. Overall net, slow infilling of the estuary is	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The net trend of sediment infilling is expected to continue,

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	thought to be a significant risk along this stretch. Continued provision of defences will continue to minimise the risk of flooding.	expected to continue. The defences along this stretch will continue to minimise the risk of flooding of lower-lying intertidal areas. With sea level rise there would increased pressure on defences as the estuary tries to widen in response to a greater tidal prism. A key control on patterns of erosion and accretion will remain the configurations of the low water channel. There is potential for increased stress of existing defences towards Home Marsh Farm (Pethick, 2007).	although the supply of muddy sediment is low. The defences along this stretch, either in their existing or realigned positions, will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise. A key control on patterns of erosion and accretion will remain the configurations of the low water channel. There is potential for increased stress of existing defences towards Home Marsh Farm (Pethick, 2007).
7c17 – Home Farm Marsh (Yelland to Fremington)	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	There is a combination of flood wall and embankment defences that protect low-lying areas along this stretch, as well as part of the railway line, against the risk of flooding, although not all of this length is protected by defences. These defences are likely to require ongoing maintenance and, in places, re-building towards the end of this epoch in order that an adequate level or protection is provided in the long term under this scenario to 'hold the line' over the next 100 years.	Where defences along this stretch have been replaced in the short term, they will require ongoing maintenance during this epoch. Those remaining defences would need to be replaced with larger structures during the first half of this period, such that they continue to provide an adequate level of protection against the risk of flooding in the long term.	The defences along this stretch will require ongoing maintenance during this epoch, and some may even require further upgrade towards the end of this period.
	During this period little change is expected within the Taw Estuary, with current trends expected to continue. Key areas at risk will be at the apex of meanders, such as towards the eastern end of this	During this period the impact of accelerated sea level rise will become more important. Overall net, slow infilling of the estuary is expected to continue. The defences along this	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The net trend of sediment infilling is expected to continue,

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	stretch, but defences will continue to minimise the risk of flooding.	stretch will continue to minimise the risk of flooding of lower-lying intertidal areas. With sea level rise there would increased pressure on defences as the estuary tries to widen in response to a greater tidal prism. A key control on patterns of erosion and accretion will remain the configurations of the low water channel. There is potential for increased stress of existing defences, including those along this stretch at Home Marsh Farm (Pethick, 2007).	although the supply of muddy sediment is low. The defences along this stretch will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise. A key control on patterns of erosion and accretion will remain the configurations of the low water channel. There is potential for increased stress of existing defences, including those along this stretch at Home Marsh Farm (Pethick, 2007).
7c18 – Fremington to Penhill Point	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defences along this short length of estuary frontage, which is comprised of high ground.	No defences.	No defences.
	During this period little change is expected within the Taw Estuary, with current trends expected to continue. The naturally high ground along this section will constrain the estuary..	During this period the impact of accelerated sea level rise will become more important. Overall net, slow infilling of the estuary is expected to continue. The high ground along this section will continue to constrain the estuary in this area.	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The net trend of sediment infilling is expected to continue, although the supply of muddy sediment is low. The natural high round along this section will continue to constrain the estuary in this area.
7c19 – Penhill Point to A39 Road Bridge (Bickington)	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	There are a range of flood walls and embankments protecting settlements along this stretch of the Taw Estuary, including Barnstaple,	Defences re-built in the short term would require ongoing maintenance during this epoch, whilst any defences not replaced in the short term will need	There would be ongoing maintenance of all defences along this stretch during this epoch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	Bickington and Sticklepath. These defences will all require ongoing maintenance during this epoch, whilst some may even need to be replaced with new, larger structures towards the end of this epoch such that they are able to provide adequate levels of protection in the long term against the risk of flooding.	to be upgraded during this epoch (i.e. also replaced with larger structures), such that they are able to provide adequate levels of protection in the long term as sea levels rise.	
	During this period little change is expected within the Taw Estuary, with current trends expected to continue. Key areas at risk will be at the apex of meanders, such as at Barnstaple, but defences will continue to minimise the risk of flooding.	During this period the impact of accelerated sea level rise will become more important. Overall net, slow infilling of the estuary is expected to continue. The defences along this stretch will continue to minimise the risk of flooding of lower-lying intertidal areas. With sea level rise there would increased pressure on defences at Barnstaple and Sticklepath as the estuary tries to widen in response to a greater tidal prism. A key control on patterns of erosion and accretion will remain the configurations of the low water channel. There is potential for increased stress of existing defences at Bickington (Pethick, 2007).	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The net trend of sediment infilling is expected to continue, although the supply of muddy sediment is low. The defences along this stretch will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise. In particular defences at Barnstaple and Sticklepath are likely to be put under increased pressure. A key control on patterns of erosion and accretion will remain the configurations of the low water channel. There is potential for increased stress of existing defences at Bickington (Pethick, 2007).
7c20 – Upper Taw Estuary (east and west banks	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	There are a range of embankment defences	The existing embankments along this stretch will	The various defences along this stretch, where

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
between A39 to tidal limit near Bishops Tawton)	associated with the railway and reclaimed farmland upstream of Barnstaple, although some parts of the upper Taw Estuary are undefended.	require maintenance and upgrading (replaced with larger structures) during this period. The undefended parts of the upper Taw Estuary will continue to evolve naturally.	they occur, will continue to be maintained during this epoch. The undefended parts of the upper Taw Estuary will continue to evolve naturally.
	During this period little change is expected within the Taw Estuary, with current trends expected to continue. Along this upper part of the Taw Estuary, upstream of Barnstaple, the edge of the floodplain is, in places, bordered by a railway embankment on the right bank and by rapidly rising ground on the left bank. Here little or no change is anticipated.	During this period the impact of accelerated sea level rise will become more important. Overall net, slow infilling of the estuary is expected to continue. The defences, where they occur, will continue to minimise the risk of flooding of lower-lying intertidal areas. However, where low-lying areas are undefended, the estuary would be able to adapt to rising sea levels by transgressing onto these areas, which in turn would minimise the effects of coastal squeeze to localised areas of salt marsh.	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The net trend of sediment infilling is expected to continue, although the supply of muddy sediment is low. The defences will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise.
7c21 – A39 Road Bridge to West Ashford (Barnstaple)	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	There are a range of flood walls and embankments providing protection against the risk of flooding along this stretch, may of which protect the settlement of Barnstaple. These defences will all require ongoing maintenance during this epoch, whilst some may even need to be replaced with new, larger structures towards the end of this epoch such that they are able to provide adequate levels of protection in the long term against the risk of flooding.	Defences re-built in the short term would require ongoing maintenance during this epoch, whilst any defences not replaced in the short term will need to be upgraded during this epoch (i.e. also replaced with larger structures), such that they are able to provide adequate levels of protection in the long term as sea levels rise.	There would be ongoing maintenance of all defences along this stretch during this epoch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	During this period little change is expected within the Taw Estuary, with current trends expected to continue. Key areas at risk will be at the apex of meanders, such as at Barnstaple, but defences will continue to minimise the risk of flooding.	During this period the impact of accelerated sea level rise will become more important. Overall net, slow infilling of the estuary is expected to continue. The defences will continue to minimise the risk of flooding of lower-lying intertidal areas. With sea level rise there would increased pressure on defences at Barnstaple as the estuary tries to widen in response to a greater tidal prism. A key control on patterns of erosion and accretion will remain the configurations of the low water channel. There is potential for increased stress of existing defences, including those at West Ashford (Pethick, 2007).	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The net trend of sediment infilling is expected to continue, although the supply of muddy sediment is low. The defences will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise. In particular defences at Barnstaple are likely to be put under increased pressure. A key control on patterns of erosion and accretion will remain the configurations of the low water channel. There is potential for increased stress of existing defences, including those at West Ashford (Pethick, 2007).
7c22 – West Ashford to Braunton (east bank of River Caen)	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	There are a range of flood walls and embankments that provide protection against the risk of flooding to low-lying parts of this area of the Taw Estuary at Chivenor Airfield, although the eastern end of this stretch is backed by steeply rising ground. Under this scenario, investigation and (if found to be appropriate to do so) implementation of 'Managed Realignment' would occur. It is envisaged that secondary defence embankments would be constructed in a realigned position	A continuation of the 'Managed Realignment' policy in this epoch would allow defences to be realigned in this period (if they have not already been realigned in the short term), if detailed studies in the short term find it is appropriate to do so. Any defences along this stretch, either in realigned or existing positions, would require ongoing maintenance during this epoch. Any defences not subject to re-alignment are also likely to need to be re-built during this epoch (if	A continuation of the 'Managed Realignment' policy in this epoch would allow defences to be realigned in this period (if they have not already been realigned in the short or medium term), if detailed studies in the short term find it is appropriate to do so. Any defences along this stretch, either in realigned or existing positions, would require ongoing maintenance during this epoch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	along low-lying areas at Chivenor by the end of this period, with breaches cut into the existing defence line. Where realignment does not occur, then existing defences would be maintained and re-built as necessary. The studies required during this stage would need to consider the impacts of implementing 'Managed Realignment' upon both the flood risk reduction in the wider estuary system, as well as the wider sediment transport processes within the outer part of the Taw/Torridge Estuary, in terms of individual impacts of realigning in this area alone and cumulative impacts of undertaking realignment in this and other parts of the outer estuary system. Pethick (2007) highlights potential risks associated with cumulative effects of 'Managed Realignment' in the outer estuary, and much uncertainty exists at present.	not re-built in the short term) such that they are able to provide adequate levels of protection in the long term.	
	During this period little change is expected within the Taw Estuary, with current trends expected to continue. Key areas at risk will be at the apex of meanders, such as those located towards the eastern end of this stretch near West Ashford, but defences will continue to minimise the risk of flooding.	During this period the impact of accelerated sea level rise will become more important. Overall net, slow infilling of the estuary is expected to continue. The defences along this stretch, either in their existing or realigned positions, will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise.	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The net trend of sediment infilling is expected to continue, although the supply of muddy sediment is low. The defences will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		A key control on patterns of erosion and accretion will remain the configurations of the low water channel (Pethick, 2007).	A key control on patterns of erosion and accretion will remain the configurations of the low water channel (Pethick, 2007).
7c23 – Braunton to Horsey Island (west bank of River Caen)	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	There are a range of flood walls and embankments that provide protection against the risk of flooding to this low-lying area of the Taw Estuary. Many of these defences will require replacement towards the end of this epoch as they reach the end of their effective life. Therefore, under this scenario, investigation and (if found to be appropriate to do so) implementation of 'Managed Realignment' would occur. It is envisaged that replacement defence embankments would then be constructed in a realigned position this stretch by the end of this period, with breaches cut into the existing defence line. Where realignment does not occur, then existing defences would be maintained and re-built as necessary. The studies required during this stage would need to consider the impacts of implementing 'Managed Realignment' upon both the flood risk reduction in the wider estuary system, as well as the wider sediment transport processes within the outer part of the Taw/Torridge Estuary, in terms of individual impacts of realigning in this area alone and cumulative impacts of undertaking realignment in this and other parts of the outer	A continuation of the 'Managed Realignment' policy in this epoch would allow defences to be realigned in this period (if they have not already been realigned in the short term), if detailed studies in the short term find it is appropriate to do so. Any defences along this stretch, either in realigned or existing positions, would require ongoing maintenance during this epoch. Any defences not subject to re-alignment are also likely to need to be re-built during this epoch (if not re-built in the short term) such that they are able to provide adequate levels of protection in the long term.	A continuation of the 'Managed Realignment' policy in this epoch would allow defences to be realigned in this period (if they have not already been realigned in the short or medium term), if detailed studies in the short term find it is appropriate to do so. Any defences along this stretch, either in realigned or existing positions, would require ongoing maintenance during this epoch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	estuary system. Pethick (2007) highlights potential risks associated with cumulative effects of 'Managed Realignment' in the outer estuary, and much uncertainty exists at present.		
	During this period little change is expected within the Taw Estuary, with current trends expected to continue. Continued provision of defences will continue to minimise the risk of flooding.	During this period the impact of accelerated sea level rise will become more important. Overall net, slow infilling of the estuary is expected to continue. The defences along this stretch, either in their existing or realigned positions, will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise.	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The net trend of sediment infilling is expected to continue, although the supply of muddy sediment is low. The defences will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise.
7c24 – Horsey Island	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Earth embankments along this stretch of reclaimed land provide protection against the risk of flooding to this low-lying area of the Taw Estuary. These defences will require replacement towards the end of this epoch as they reach the end of their effective life. Therefore, under this scenario, investigation and (if found to be appropriate to do so) implementation of 'Managed Realignment' would occur. It is envisaged that replacement defence embankments would then be constructed in a realigned position this stretch by the end of this	A continuation of the 'Managed Realignment' policy in this epoch would allow defences to be realigned in this period (if they have not already been realigned in the short term), if detailed studies in the short term find it is appropriate to do so. Any defences along this stretch, either in realigned or existing positions, would require ongoing maintenance during this epoch. Any defences not subject to re-alignment are also likely to need to be re-built during this epoch (if not re-built in the short term) such that they are	A continuation of the 'Managed Realignment' policy in this epoch would allow defences to be realigned in this period (if they have not already been realigned in the short or medium term), if detailed studies in the short term find it is appropriate to do so. Any defences along this stretch, either in realigned or existing positions, would require ongoing maintenance during this epoch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	period, with breaches cut into the existing defence line. Where realignment does not occur, then existing defences would be maintained and re-built as necessary. The studies required during this stage would need to consider the impacts of implementing 'Managed Realignment' upon both the flood risk reduction in the wider estuary system, as well as the wider sediment transport processes within the outer part of the Taw/Torridge Estuary, in terms of individual impacts of realigning in this area alone and cumulative impacts of undertaking realignment in this and other parts of the outer estuary system. Pethick (2007) highlights potential risks associated with cumulative effects of 'Managed Realignment' in the outer estuary, and much uncertainty exists at present.	able to provide adequate levels of protection in the long term.	
	During this period little change is expected within the Taw Estuary, with current trends expected to continue. Continued provision of defences will continue to minimise the risk of flooding.	During this period the impact of accelerated sea level rise will become more important. Overall net, slow infilling of the estuary is expected to continue. The defences along this stretch, either in their existing or realigned positions, will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise.	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The net trend of sediment infilling is expected to continue, although the supply of muddy sediment is low. The defences will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
7c25 – Horsey Island to Crow Point	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Earth embankments along much of this stretch provide protection against the risk of flooding to this low-lying area of the outer Taw Estuary. These defences will require replacement towards the end of this epoch as they reach the end of their effective life. Therefore, under this scenario, investigation and (if found to be appropriate to do so) implementation of 'Managed Realignment' would occur. It is envisaged that replacement defence embankments would then be constructed in a realigned position this stretch by the end of this period, with breaches cut into the existing defence line. Where realignment does not occur, then existing defences would be maintained and re-built as necessary. The studies required during this stage would need to consider the impacts of implementing 'Managed Realignment' upon both the flood risk reduction in the wider estuary system, as well as the wider sediment transport processes within the outer part of the Taw/Torridge Estuary, in terms of individual impacts of realigning in this area alone and cumulative impacts of undertaking realignment in this and other parts of the outer estuary system. Pethick (2007) highlights potential risks associated with cumulative effects of 'Managed Realignment'	A continuation of the 'Managed Realignment' policy in this epoch would allow defences to be realigned in this period (if they have not already been realigned in the short term), if detailed studies in the short term find it is appropriate to do so. Any defences along this stretch, either in realigned or existing positions, would require ongoing maintenance during this epoch. Any defences not subject to re-alignment are also likely to need to be re-built during this epoch (if not re-built in the short term) such that they are able to provide adequate levels of protection in the long term. Management of this area, particularly towards Crow Point, will also continue to be significantly influenced by the policy on the adjacent section for Crow Point and Crow Neck.	A continuation of the 'Managed Realignment' policy in this epoch would allow defences to be realigned in this period (if they have not already been realigned in the short or medium term), if detailed studies in the short term find it is appropriate to do so. Any defences along this stretch, either in realigned or existing positions, would require ongoing maintenance during this epoch. Management of this area, particularly towards Crow Point, will also continue to be significantly influenced by the policy on the adjacent section for Crow Point and Crow Neck.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	in the outer estuary, and much uncertainty exists at present. Management of this area, particularly towards Crow Point, will also be significantly influenced by the policy on the adjacent section for Crow Point and Crow Neck.		
	During this period little change is expected within the Taw Estuary, with current trends expected to continue. Continued provision of defences will continue to minimise the risk of flooding.	During this period the impact of accelerated sea level rise will become more important. Overall net, slow infilling of the estuary is expected to continue. The defences along this stretch, either in their existing or realigned positions, will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise.	Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change. The net trend of sediment infilling is expected to continue, although the supply of muddy sediment is low. The defences will continue to minimise the risk of flooding of lower-lying areas, although increased pressure may be placed on these defences as the estuary responds to an increased tidal prism resulting form sea level rise.
7c26 – Crow Point & Crow Neck	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Along this part of the northern side of the estuary mouth, which encompasses both the inner and outer parts of the spit feature that extends into the estuary, there is a rock revetment along Crow Neck that protects this spit feature against erosion. There is a risk it could be breached during this epoch. Under this scenario, investigation and (if found to be appropriate to do so) implementation of 'Managed Realignment' would occur. The studies required during this stage would need to consider	A continuation of the 'Managed Realignment' policy in this epoch would allow ongoing intervention measures to repair any breaches that may occur during this epoch, whilst allowing the spit to roll back naturally as sea levels rise. Ongoing monitoring of the feature will also be required, and toward the end of this epoch it may become necessary to consider construction of a secondary defence line on the inner side of Crow Neck to provide support to the defence function of the spit (if studies in the short term determine	A continuation of the 'Managed Realignment' policy in this epoch would allow ongoing intervention measures to repair any breaches that may occur during this epoch, whilst allowing the spit to roll back naturally as sea levels rise. Ongoing monitoring of the feature will also be required, and during this epoch (if not happened in the medium term) it may become necessary to consider construction of a secondary defence line on the inner side of Crow Neck to provide support to the defence function of the spit (if

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	the impacts of implementing 'Managed Realignment' upon the wider sediment transport processes within the outer part of the Taw/Torridge Estuary, in terms of individual impacts of realigning in this area alone and cumulative impacts of undertaking realignment in this and other parts of the outer estuary system. Consideration as to the importance of this feature for providing defence against wave action to the inner estuary would also need to be considered. Pethick (2007) highlights potential risks associated with cumulative effects of 'Managed Realignment' in the outer estuary, and much uncertainty exists at present. Under this scenario, it is assumed that measures to manage the natural realignment of the spit would be undertaken, most likely involving intervention to repair breaches as they occur.	that this feature does indeed provide such a defence function; it is uncertain at this time if this is the case).	studies in the short term determine that this feature does indeed provide such a defence function; it is uncertain at this time if this is the case).
	The channel in the outer estuary is characterised by a number of rock outcrops which ultimately constrain channel movement. The mouth of the estuary is also constrained by the high rates of longshore transport, which have resulted in the formation of the two spits at the mouth, including this one that extends to Crow Point. Despite the trend for swash aligned along the adjacent Braunton Burrows shoreline, during this period, little change is anticipated in the rate of longshore drift; therefore this will remain a constraint on	During this period the impact of accelerated sea level rise and changes in the alignment of the Pebble Ridge, along the open coast to the south of this area, may start to have an impact on the estuary and in particular the outer estuary (including this stretch). A net trend of continued, slow infilling of the estuary is expected under a scenario of sea level rise and the estuary will also attempt to widen at its mouth (Pethick, 2007). The channel bed is	There is a high level of uncertainty with regard to how the estuary will evolve as sea level rises. In general the trend of slow infilling is expected to continue, with sediments from alongshore and the nearshore being moved into the estuary. The mouth of the estuary will also attempt to widen in response to an increased tidal prism. The cobble ridge along the northern shore of Northam Burrows, opposite this stretch, will provide some protection to that area; therefore it is possible that the shoreline along the northern side of the

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	the mouth. The defences along this stretch will remain the same as today; therefore the trend of dune erosion at Crow Neck, which is expected to continue, should be controlled by the defences here.	over-deepened by more than 15m below its present level, and therefore sea level rise is not predicted to cause an increase in channel size, rather a reduction of infilling rates (Pethick, 2007). There are geological constraints, but also the strong longshore movement of sand has also been a constraint on the mouth width. The rate of sediment transport from the Northam Burrows frontage to the south of this stretch may be affected by any breaches occurring during this period along that stretch, although sand may still be transported in the nearshore zone. The cobble ridge along the northern shore of Northam Burrows, opposite this area of Crow Neck and Crow Point, will provide some protection in that area; therefore it is possible that the shoreline along the northern side of the mouth, including this stretch, will suffer greater erosion (Pethick, 2007).	mouth, including this stretch, will suffer greater erosion (Pethick, 2007). The estuary will remain a net sink for sediment and as demand for sediment increase; this could result in increased erosion of the open coast shorelines as more sediment is moved into the estuaries. It is, however, very difficult to quantify such impacts, without further study.
7c27 – Braunton Burrows	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This frontage is largely undefended apart from a series of groynes at Airy Point and a blockwork wall and gabions at the northern end of Saunton Sands, protecting a number of properties at Saunton. Under this scenario, the groynes at Airy Point, which have limited effect, would not be maintained and as such they would deteriorate during this epoch.	The ineffective groynes at Airy Point would fail during this epoch due to lack of maintenance under this scenario. If funds are not available to maintain and replace the defences at Saunton, then they are also likely to deteriorate and fail during this period. Under this scenario, if defences are not maintained, measures to adapt to the loss of defences in the medium to long term will be required.	Under this scenario, if funds are not available to maintain defences at Saunton in the preceding two epochs, then this section would be undefended during this epoch. However, if alternative funds are available, then there would be no reason not to permit private landowners to continue to protect individual properties during this period from a processes point of view, although it will become increasingly

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	It is unlikely that maintenance of the defences at Saunton would attract public funds for maintenance and improvements likely to be required to provide current levels of protection as sea levels rise. However, if alternative (private) funds were available for this purpose, there is no reason not to permit their retention and improvement (re-building) to continue to protect individual properties from a processes point of view, so long as the structures remain as linear (seawall/revetment) structures. If alternative funds are available, then defences along this section that protect individual properties would need to be re-built to be much larger than at present in order to continue to provide adequate protection in the longer term as sea levels rise and defences become increasingly exposed to more frequent storm events.	If defences at Saunton have been maintained and upgraded in the short term by means of alternative funds, then these could be maintained under this scenario as there is no reason not to permit this from a processes point of view.	technically difficult and expensive to do so.
	This frontage comprises the extensive dune system of Braunton Burrows which is fronted by a wide sandy beach. The beach is controlled by the headland of Saunton Down in the north, and by the headland to the south near Westward Ho! As such the beach is predicted to remain generally stable during this epoch, although the southern section will be influenced by any changes in the Taw/Torridge estuary. Any sediment eroded may be returned to the shoreline from	Failure of the defences along this section (or even continued defence at Saunton if funds are available) is unlikely have a significant impact on the behaviour of the larger scale dune system, and this system is expected to remain fairly resilient to change. There are likely to be localised areas of accretion and erosion, with the possible development of blow-outs at some locations. Overall the dune system is expected to maintain a net positive	During this period a key influence on this beach-dune system will be any change in sediment input due to either the change in shoreline orientation along the Pebble Ridge and Northam Burrows to the south or changes in the estuary tidal delta resulting from changes in the estuary regime. Although the dune system as a whole is expected to remain fairly resilient to change, this period could be one of shoreline retreat and erosion of the fronting dunes.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	offshore stores. The groynes at Airy Point are largely ineffective and thus not considered to have a significant impact on future processes. Any impact they do have will diminish further during this epoch as they deteriorate due to lack of maintenance under this scenario. The defences at the northern end of this stretch at Saunton protect individual properties from the risk of overtopping and erosion. They are backed by the steeply rising, largely resistant cliffs of Saunton Down. Therefore, even if defences were not present here, the evolution of the shoreline in this area would occur in much the same way as the resistance of the cliffs (rather than defences) would constrain erosion processes.	budget. If a blow-out were to develop along the central section there is a risk that the backing slack areas could become flooded on every spring tide. The impacts of sea level rise may start to felt during this period; however, the primary driver of dune erosion is likely to be the frequency of storm events and the coincidence of surges with high wave activity. Actual erosion and accretion rates along the frontage will be dependent upon the future frequency and strength of storm events, which is when the majority of the dune erosion will take place. There is, however, currently large uncertainty over whether frequency of storms will increase, or storm tracks change, as a result of climate change. Any sediment eroded from the dunes is expected to remain within the system; therefore the dune system as a whole is likely to remain relatively robust. The future evolution of this frontage is also linked to changes within the Taw/Torridge estuary system and in particular the tidal delta, which plays an important role in terms of sediment circulation within the Bay. This delta allows sand to bypass the estuary mouth, while maintaining an open channel to the sea (Pethick, 2007).	A primary driver of dune erosion will also be the frequency of storm events and the coincidence of surges with high wave activity. There is, however, currently large uncertainty over whether frequency of storms will increase, or storm tracks change, as a result of climate change. Any sediment eroded from the dunes is expected to be moved into the sediment circulatory system, but the return of sediment to this shoreline may be reduced due to the reasons stated above. A breach is considered unlikely due to the width of the dunes, but erosion of the frontal dunes may lead to slacks become flooded on every high tide.
7c28 – Saunton	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
Down	This section of cliffed coastline is undefended.	No defences.	No defences.
	The headland of Saunton Down is characterised by a rock platform and lower cliff composed of resistant shales, overlain by raised beach deposits consisting of mainly of sands with pebble layers and some shingle. This headland is predicted to continue to evolve as historically. The resistant shale deposits will change very little, but where the softer raised beach deposits outcrop there is a risk of erosion through either toe erosion or sub-serial weathering, which could result in a few metres of erosion during a single event.	Erosion of the headland is predicted to continue as historically: at Saunton Down there is a risk that a landslide event could cause up to 50m erosion. During this period, the resistant rock platform will continue to afford some control on the backing cliffs, but there is a risk of erosion, through sub-aerial processes of the sandy cliffs above.	Erosion of the cliffs either side of Croyde Bay, will continue as historically, although there is a risk that sub-aerial weathering of the softer cliffs could increase should precipitation increase in the future due to climate change. Baggy Point is expected to erode very slowly (i.e. less than 5m erosion by year 50), but at Saunton Down there is a risk that a landslide events could cause up to 50m erosion at any one location, although along the remainder of the coast change could be less than 10m. At the northern end of the Bay erosion of the low cliffs could occur following failure of the defences and retreat could be in the region of 5 to 40m.
POLICY SCENARIO AREA: SAUNTON DOWN TO BAGGY POINT (CROYDE BAY)			
7c29 – Croyde Sands	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section is undefended and will continue to be undefended in terms of coastal defence structures. However, localised dune management to address recreational erosion of the dunes, along with activity to manage the outflow of the channel that discharges to the sea in this area, could occur.	This section is undefended and will continue to be undefended in terms of coastal defence structures. However, localised dune management to address recreational erosion of the dunes, along with activity to manage the outflow of the channel that discharges to the sea in this area, could occur.	This section is undefended and will continue to be undefended in terms of coastal defence structures. However, localised dune management to address recreational erosion of the dunes, along with activity to manage the outflow of the channel that discharges to the sea in this area, could occur.
	Croyde Bay is enclosed by the resistant headlands at Saunton Down and Baggy Point. It is thought to be a 'closed system' in terms of sediment transport, with sediment tending to be internally	Erosion of the headland is predicted to continue as historically, with a risk that a landslide event at Saunton Down that could cause up to 50m erosion.	Erosion of the cliffs along the south side of Croyde Bay, will continue as historically, although there is a risk that sub-aerial weathering of the softer cliffs could increase should precipitation

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	redistributed. The Bay itself is characterised by a wide sandy beach backed by dunes (as covered by this section). The headland of Saunton Down is characterised by a rock platform and lower cliff composed of resistant shales, overlain by raised beach deposits consisting of mainly of sands with pebble layers and some shingle. This headland is predicted to continue to evolve as historically. The resistant shale deposits will change very little, but where the softer raised beach deposits outcrop there is a risk of erosion through either toe erosion or sub-serial weathering, which could result in a few metres of erosion during a single event. The beach in the centre of the Bay has historically been relatively stable due to protection afforded by the headlands, and this trend is predicted to continue during this period. Any sediment eroded from the beach or dune face is likely to be retained and redistributed within the bay. Measures to manage the channel outflow in this area, or to address dune erosion caused by footfall, are unlikely to impact significantly upon these natural processes.	During this period, the resistant rock platform will continue to afford some control to the backing cliffs, but there is a risk of erosion, through sub-aerial processes of the sandy cliffs above. The beach in the centre of Croyde Bay has historically been relatively stable due to the headlands that control the evolution of the bay, and it is predicted to continue to remain so during this period, despite sea level rise. There may be localised areas of dune erosion, mainly driven by human activity, but any slight erosion is not predicted to affect the integrity of the beach or the wide dune system backing it, with any sediment eroded from the beach or dune face likely to be re-deposited within the bay.	increase in the future due to climate change. Along Saunton Down there is a risk that a landslide event could cause up to 50m erosion at any one location, although along the remainder of the coast change could be less than 10m. Any sediment that was released by cliff erosion would be added to the beach at Croyde. The beach in the centre of Croyde Bay has historically been relatively stable due to the protective influence of headlands. During this period, however, raised water levels, due to sea level rise, may mean that the foot of the dunes is reached more frequently, resulting in erosion. This may also result in dunes retreating landwards in the longer term, which in turn could begin to impact upon properties located inland. During quiescent times some of this material will be returned to the dunes, but it is possible that a net trend of retreat could be initiated, particularly considering the little or no new input of sediment to this system. Actual rates of erosion will be dependent upon the future frequency and strength of storm events, which is when the majority of the dune erosion will take place. There is, however, currently large uncertainty over whether frequency of storms will increase, or storm tracks change, as a result of climate change.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
7c30 – Middleborough Hill (Croyde Bay north)	**Policy Assessed = Hold the Line**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section at the northern end of Croyde Bay is comprised of largely undefended low-lying cliffs, apart from a short length of seawall that protect individual properties. These are unlikely to attract public funds to replace them in the long term, and as such only limited maintenance of the defences is anticipated under this scenario during this period in order to ensure the defences remain in the short term whilst measures are developed to adapt the cliff top area (i.e. relocate cliff top property) in the medium term. As such, these defences will remain during this period.	The seawall at the northern end of Croyde Bay would be expected to fail during this as they will not be maintained during this period.	There would be no defences present along this stretch in this period.
	This section on the northern side of Croyde Bay extends along the low-lying cliffs situated at the eastern (landward) end of Baggy Point, the northern headland that encloses the bay and controls the bay's evolution. The headland of Baggy Point is characterised by a rock platform and lower cliff composed of resistant shales, overlain by raised beach deposits consisting of mainly of sands with pebble layers and some shingle. This headland is predicted to continue to evolve as historically. The resistant shale deposits will change very little, but where the softer raised beach deposits outcrop there is a risk of erosion though either cliff toe erosion or sub-serial	Erosion of Baggy Point is predicted to continue as historically, with the headland expected to erode very slowly (i.e. less than 5m erosion by year 50). During this period, the resistant rock platform will continue to afford some control on the backing cliffs, but there is a risk of erosion, through sub-aerial processes of the raised beach deposits above. The failure of the short length of seawall along part of this section during this period may result in some additional localised cliff erosion and this could be between 0 to 15m, although the rock platform along this stretch could afford some protection from wave attack as along the	Erosion of the cliffs along this section of the northern part of Croyde Bay, will continue as historically, with the previously defended part also evolving naturally following the loss of defences in the medium term. Baggy Point is generally expected to erode very slowly (i.e. less than 10m erosion by year 100), although erosion of the low cliffs along this section of Croyde Bay could occur in the region of 5 to 40m. Any sediment that was released by cliff erosion would be added to the beach at Croyde.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	weathering, which could result in a few metres of erosion during a single event. Cliff erosion along parts of this section at the northern end of Croyde Bay will be prevented by the continued presence of the short length of defences.	undefended parts of this section.	
7c31 – Middleborough Hill (Croyde Bay north) to Baggy Point	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section is undefended.	No defences.	No defences.
	Croyde Bay is enclosed by the resistant headlands at Saunton Down and Baggy Point. It is thought to be a 'closed system' in terms of sediment transport, with sediment tending to be internally redistributed. The Bay itself is characterised by a wide sandy beach backed by dunes. The headland of Baggy Point is characterised by a rock platform and lower cliff composed of resistant shales, overlain by raised beach deposits consisting of mainly of sands with pebble layers and some shingle. This headland is predicted to continue to evolve as historically. The resistant shale deposits will change very little, but where the softer raised beach deposits outcrop there is a risk of erosion though either cliff toe erosion or sub-serial weathering, which could result in a few metres of erosion during a single event.	Erosion of the headland is predicted to continue as historically, with Baggy Point expected to erode very slowly (i.e. less than 5m erosion by year 50). During this period, the resistant rock platform will continue to afford some control on the backing cliffs, but there is a risk of erosion, through sub-aerial processes of the raised beach deposits above.	Erosion of the cliffs at Baggy Point will continue as historically, although there is a risk that sub-aerial weathering of the softer cliffs could increase should precipitation increase in the future due to climate change. Baggy Point is expected to erode very slowly (i.e. less than 5m erosion by year 50). Any sediment that was released by cliff erosion would be added to the beach at Croyde.
POLICY SCENARIO AREA: BAGGY POINT TO MORTE POINT (WOOLACOMBE BAY)			

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
7c32 – Baggy Point to Napps Cliff (Putsborough)	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defences along this section of cliffed coast.	No defences.	No defences.
	Morte Bay is controlled by the erosion-resistant headlands of Baggy Point to the south and Morte Point to the north. This section encompasses the northern side of Baggy Point up to the Putsborough. The headland is resistant and predicted to continue to erode at the very low rates experienced historically; erosion is likely to be in the form of small, infrequent rock falls; therefore negligible erosion is predicted during this period, but the occurrence of very localised events, which are likely to result in less than 10m erosion, is possible.	The resistant headland of Baggy Point will change very little during this period, although there is a risk of localised erosion events occurring, which are likely to result in less than 10m erosion.	There will be very little change along the resistant headland of Baggy Point, although local cliff fall events may occur, erosion of less than 10m is likely. Sea level rise is unlikely to accelerate this process.
7c33 – Putsborough Sands and Vention	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = No Active Intervention**
	Most of the frontage is undefended, although there are local defences at Putsborough/Vention, in the form of concrete and masonry walls that protect individual properties, and rock revetment which protects the car park at the southern end. Along the northern part of this section, a concrete revetment prevents erosion of the backing dunes. It is unlikely that these defences would attract public funds for maintenance and improvements likely to be required to provide current levels of	If funds are not available to maintain and replace the defences along this section, then they are likely to deteriorate and fail during this period as they reach the end of their design life. Under this scenario, if defences are not maintained, measures to adapt to the loss of defences in the medium to long term will be required.	Any defences that have not been maintained due to a lack of funds, will have deteriorated and failed in the medium term, and so only the residual remains of defences will be present during this period. However, if alternative funds are available, then there would be no reason not to permit private landowners to continue to protect individual properties during this period, although it will become increasingly technically difficult and expensive to do so.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	protection as sea levels rise. However, if alternative (private) funds were available for this purpose, there is no reason not to permit their retention and improvement (re-building) to continue to protect individual properties from a processes point of view, so long as the structures remain as linear (seawall/revetment) structures; any structures that interrupt longshore sediment transport would not be appropriate as they would have detrimental effects upon the sediment transport system within the wider Morte Bay. If alternative funds are available, then defences along this section that protect individual properties would need to be re-built to be much larger than at present in order to continue to provide adequate protection in the longer term as sea levels rise and defences become increasingly exposed to more frequent storm events. Currently dune management is carried out, and this is assumed to continue under this scenario during this period in support of the ongoing maintenance of the private defences.		Under this scenario, however, it would not be permitted to re-build the defences once they reach the end of their design life and so measures to adapt to this situation as and when it occurs, will need to be developed in this period.
	Morte Bay is controlled by the erosion-resistant headlands of Baggy Point to the south and Morte Point to the north. The bay itself comprises Woolacombe Sand; a wide sandy beach backed by dunes and Woolacombe Down. This section represents the southern end of this feature and is	At Putsborough any remaining defences that have been maintained by private funds will become less effective with erosion of the cliffs along the car park and also increasing flood risk to the private properties. As the rock revetment fronting the dunes	Erosion of the dunes will be driven by storm events; however there is large uncertainty over whether frequency of storms will increase, or storm tracks change, as a result of climate change. Without management of the dunes, any erosion may also be exacerbated by human use of the

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	referred to as Putsborough Sands. The frontage as a whole is predicted to remain largely stable during this epoch due to the controlling nature of the headlands. The frequency of storm events will be the key control on the rate of future dune erosion in this area. Any sediment eroded from the dunes will become deposited on the beach, and therefore may return to the dunes during quiescent periods, as cross-shore transport is dominant in Morte Bay. It is also possible that some sediment may be lost offshore. Overall the dune system should change little during this period, but it will be vulnerable to human pressures. At Putsborough there could be issues of cliff erosion along the car park. Assuming alternative funds are available, the defences along this stretch would need to be replaced with much larger, expensive, structures better suited to addressing the increasing pressures caused by sea level rise and greater wave exposure in the medium and long term. Despite this maintenance, defences along the private properties could also start to become less effective during this period; these properties tend to be located on more resistant rock outcrops therefore the key risk could be from overtopping during extreme events. To the north, the rock revetment along the dunes	becomes less effective (unless it is upgraded), erosion of the dunes will recommence; this is likely to be mainly during storm events. Erosion along this stretch could be in the region of 5 to 25m by the end of this period. The primary drivers of dune erosion will be the frequency of storm events and the coincidence of surges with high wave activity and the impact of human use of the dunes. Actual erosion and accretion rates along the frontage will be dependent upon the future frequency and strength of storm events, which is when the majority of the dune erosion will take place, but under a scenario of sea level rise, waves will reach the dune toe more frequently. There is, however, currently large uncertainty over whether frequency of storms will increase, or storm tracks change, as a result of climate change. This is essentially a closed sediment system, therefore sediment eroded from the dunes should become deposited on the beach, but there may also be a loss of sediment offshore.	dunes. At Putsborough, where the dune belt is narrow already and the revetment defence fronting the dunes is likely to have failed by this period, the relict cliffs of Woolacombe/Pickwell Down that back the dunes may become exposed to the waves and therefore erosion may occur. Erosion along this stretch is expected to be in the region of 10 to 50m by the end of this period. This would add sediment to the system, but it is not predicted that a significant quantity would be released during this period. Where defences may have been maintained along localised parts of the frontage, such erosion will be prevented.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	may become less effective during this period, which may result in increase erosion of the backing dunes.		
7c34 – Vention to Woolacombe Beach (Woolacombe Sands)	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section is undefended in terms of coastal defence structures, although dune management is carried out, primarily to address erosion caused by recreational use of the dunes. Whilst unlikely to attract public funds, there is no reason not to permit this dune management to continue during this period.	No defences would be present, although there is no reason not to permit dune management during this period to address localised dune erosion caused by recreational use of the dunes.	No defences would be present, although there is no reason not to permit dune management during this period to address localised dune erosion caused by recreational use of the dunes.
	Morte Bay is controlled by the erosion-resistant headlands of Baggy Point to the south and Morte Point to the north. This part of the bay comprises Woolacombe Sand; a wide sandy beach backed by dunes and Woolacombe Down. The frontage as a whole is predicted to remain largely stable during this epoch due to the controlling nature of the headlands. The frequency of storm events will be the key control on the rate of future dune erosion. Any sediment eroded from the dunes will become deposited on the beach, and therefore may return to the dunes during quiescent periods, as cross-shore transport is dominant in Morte Bay. It is also possible that some sediment may be lost offshore. Overall the dune system should change little during this period, but it will be vulnerable	The primary drivers of dune erosion will be the frequency of storm events and the coincidence of surges with high wave activity and the impact of human use of the dunes. Actual erosion and accretion rates along the frontage will be dependent upon the future frequency and strength of storm events, which is when the majority of the dune erosion will take place, but under a scenario of sea level rise, waves will reach the dune toe more frequently. There is, however, currently large uncertainty over whether frequency of storms will increase, or storm tracks change, as a result of climate change. This is essentially a closed sediment system, therefore sediment eroded from the dunes should become deposited on the beach, but there may also be a loss of sediment offshore.	Erosion of the dunes will be driven by storm events; however there is large uncertainty over whether frequency of storms will increase, or storm tracks change, as a result of climate change. Without management of the dunes, any erosion may also be exacerbated by human use of the dunes. Retreat of the dunes through a roll back process is not possible due to the backing topography of Woolacombe Down; therefore it is likely that the dune belt will narrow in the future. Where the dunes narrow sufficiently, the relict cliffs may become exposed to the waves and therefore erosion may occur. This would add sediment to the system, but it is not predicted that a significant quantity would be released during this period.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	to human pressures.		
7c35 – Woolacombe Beach	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section is undefended.	No defences.	No defences.
	This section encompasses the northern part of the wide sandy beach located within Morte Bay, which is backed by dunes and Woolacombe Down. Along this section the dunes have been impacted by the construction of infrastructure along the top of them, although the seaward face is undefended. The frontage as a whole is predicted to remain largely stable during this epoch due to the controlling nature of the headlands at either end of Morte Bay. The frequency of storm events will be the key control on the rate of future dune erosion. Any sediment eroded from the dunes will become deposited on the beach, and therefore may return to the dunes during quiescent periods, as cross-shore transport is dominant in Morte Bay. It is also possible that some sediment may be lost offshore. Overall the dune system should change little during this period, but it will be vulnerable to human pressures.	The primary drivers of dune erosion will be the frequency of storm events and the coincidence of surges with high wave activity and the impact of human use of the dunes. Actual erosion and accretion rates along the frontage will be dependent upon the future frequency and strength of storm events, which is when the majority of the dune erosion will take place, but under a scenario of sea level rise, waves will reach the dune toe more frequently. There is, however, currently large uncertainty over whether frequency of storms will increase, or storm tracks change, as a result of climate change. This is essentially a closed sediment system, therefore sediment eroded from the dunes should become deposited on the beach, but there may also be a loss of sediment offshore.	Erosion of the dunes will be driven by storm events; however there is large uncertainty over whether frequency of storms will increase, or storm tracks change, as a result of climate change. Without management of the dunes, any erosion may also be exacerbated by human use of the dunes. Retreat of the dunes through a roll back process is not possible due to the backing topography of Woolacombe Down; therefore it is likely that the dune belt will narrow in the future. Where the dunes narrow sufficiently, the relict cliffs may become exposed to the waves and therefore erosion may occur. This would add sediment to the system, but it is not predicted that a significant quantity would be released during this period.
7c36 – Woolacombe to Morte Point	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defences along this cliffed section of coast, which is interrupted by two small pocket	No defences.	No defences.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	beaches.		
	This section encompasses the cliffed section of Morte Bay to the erosion resistant headland of Morte Point, which, along with Baggy Point to the south, exerts significant geological control on the evolution of Morte Bay. Barricane Beach and Grunta Beach are small pocket beaches situated along this section, separated from the larger Woolacombe Sand to the south by smaller headlands. The headlands along this section are resistant and are predicted to continue to erode at the very low rates experienced historically; erosion is likely to be in the form of small, infrequent rock falls; therefore negligible erosion is predicted during this period, but the occurrence of very localised events, which are likely to result in less than 10m erosion, is possible. The pocket beaches of Barricane Beach and Grunta Beach, to the north of Woolacombe, are predicted to remain stable.	The resistant headlands will change very little during this period, although there is a risk of localised erosion events occurring. The pocket beaches of Barricane Beach and Grunta Beach, are predicted to remain stable, although sea level rise could begin to cause narrowing and steepening as a result of coastal squeeze against the backing, erosion resistant cliffs.	There will be very little change along the resistant headlands, although local cliff fall events may occur. Sea level rise is unlikely to accelerate this process. Barricane Bay, to the north of Woolacombe, is predicted to experience narrowing and steepening as a result of coastal squeeze against the backing, erosion resistant cliffs, as sea levels rise.
POLICY SCENARIO AREA: MORTE POINT TO FORELAND POINT			
7d01 – Morte Point to Lee (west)	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defences along this cliffed coastline.	No defences.	No defences.
	This frontage is comprised of hard rock, namely slates, shales and sandstones with heavily indented embayments formed due to differential erosion. These embayments are effectively closed	As the cliffs are resistant, erosion is likely to be in the form of infrequent and small scale events. Therefore, in general, this coast is expected to experience negligible change over the next 20	Much of this coastline will remain resistant to change, due to the nature of the geology, with negligible change predicted for this period. Rates of change are also unlikely to be affected by sea

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	systems which are unconnected in terms of sediment transport. Historically this frontage has only experienced slow rates of recession, in the region of a few hundred metres, since sea levels stabilised approximately 4000 years ago. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Any erosion will be in the form of infrequent and small scale events. Similar little change is expected to occur within the many small embayments, which effectively form a series of closed sediment systems. Storm events may affect beach levels; however it is likely that these will be in the nature of cyclical changes with the sediment returning during calmer weather.	years. Due to exposure of different rock types, there will, however, be slight variations in erosion rates along the coast, with the risk that a rock fall event could cause several metres of erosion; however this will only have implications very locally and for much of the coast the frequency of such of an event is low, i.e. every 10 to 100 years. Morte Point will prevent any incoming sediment input into this frontage, acting as a barrier to transport from further west and also the indented nature of this shoreline means that there is limited connectivity between the bays. New sediment input to the beaches is therefore dependent upon cliff erosion, which is generally negligible. Sea level rise may therefore result in some of the smaller pocket beaches becoming permanently submerged, as retreat of the beaches is not possible due to the resistant cliffs to landward. Elsewhere beach narrowing is likely to occur. Small beaches may remain at the toe of the cliffs, where fed by rock fall events.	level rise. Localised cliff falls will be the main mechanism of retreat, but there will be restricted to very localised areas. The embayments are predicted to continue to narrow due to sea level rise and increased storminess as a result of climate change. Within the smaller pocket bays beaches may disappear.
7d02 – Lee	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Whilst being comprised largely of undefended cliffs, there are localised defences in the form of a seawall within Lee Bay that provides protection against flooding and erosion. These defences are likely to require some maintenance during this epoch.	The short length of seawall defence within Lee Bay is likely to require upgrading during this epoch in order for adequate levels of protection to continue to be provided.	Ongoing maintenance of the defences within Lee Bay will be required during this epoch.
	This frontage is comprised of areas of hard rock,	As the cliffs are resistant, erosion is likely to be in	Much of this coastline will remain resistant to

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	namely slates, shales and sandstones with heavily indented embayments formed due to differential erosion. These embayments are effectively closed systems which are unconnected in terms of sediment transport. Historically this frontage has only experienced slow rates of recession, in the region of a few hundred metres since sea levels stabilised approximately 4000 years ago. Therefore, in general, this coast (where it remains undefended) is expected to experience negligible change over the next 20 years. Any erosion will be in the form of infrequent and small scale events. Similarly little change is expected to occur within the small embayment of Lee Bay encompassed by this section, which effectively is a closed sediment system. Storm events may affect beach levels; however it is likely that these will be in the nature of cyclical changes with the sediment returning during calmer weather. The existing defences within Lee Bay will continue to provide defence but the risk of overtopping may increase.	the form of infrequent and small scale events. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Due to exposure of different rock types, there will, however, be slight variations in erosion rates along the coast, with the risk that a rock fall event could cause several metres of erosion; however this will only have implications very locally and for much of the coast the frequency of such of an event is low, i.e. every 10 to 100 years. Morte Point will prevent any incoming sediment input into this frontage, acting as a barrier to transport from further west and also the indented nature of this shoreline means that there is limited connectivity between the bays. New sediment input to the beaches is therefore dependent upon cliff erosion, which is generally negligible. Sea level rise may therefore result in some narrowing of the small pocket beaches along this section, which in places may even become submerged. Small beaches may remain at the toe of the cliffs, where fed by rock fall events. At Lee Bay the risk of overtopping and flooding of the properties will increase requiring improvement of the defences, although they will still prevent erosion of the resistant cliffs behind. These improvements would require defences to be re-built to be much larger than at present, such that they are able to provide adequate levels of protection in the long-term as sea levels rise	change, due to the nature of the geology, with negligible change predicted for this period. Rates of change are also unlikely to be affected by sea level rise. Localised cliff falls will be the main mechanism of retreat, but these will be restricted to very localised areas. The embayments along this stretch are predicted to continue to narrow due to sea level rise and increased storminess as a result of climate change. It is possible that some parts of these small pocket beaches could disappear. Shoreline narrowing is predicted at Lee Bay resulting in the risk of overtopping increasing. Improvements to the defences made in the medium term will need to have accounted for this, and so the re-built defences should only require ongoing maintenance as a result.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		and the frequency of storm events may increase.	
7d03 – Lee (east) to Ilfracombe (west)	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defences along this cliffed coastline.	No defences.	No defences.
	This frontage is comprised of hard rock, namely slates, shales and sandstones with heavily indented embayments formed due to differential erosion. These embayments are effectively closed systems which are unconnected in terms of sediment transport. Historically this frontage has only experienced slow rates of recession, in the region of a few hundred metres, since sea levels stabilised approximately 4000 years ago. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Any erosion will be in the form of infrequent and small scale events. Similar little change is expected to occur within the many small embayments, which effectively form a series of closed sediment systems. Storm events may affect beach levels; however it is likely that these will be in the nature of cyclical changes with the sediment returning during calmer weather.	As the cliffs are resistant, erosion is likely to be in the form of infrequent and small scale events. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Due to exposure of different rock types, there will, however, be slight variations in erosion rates along the coast, with the risk that a rock fall event could cause several metres of erosion; however this will only have implications very locally and for much of the coast the frequency of such of an event is low, i.e. every 10 to 100 years. New sediment input to the beaches is dependent upon cliff erosion, which is generally negligible. Sea level rise may therefore result in some of the smaller pocket beaches becoming permanently submerged, as retreat of the beaches is not possible due to the resistant cliffs to landward. Elsewhere beach narrowing is likely to occur. Small beaches may remain at the toe of the cliffs, where fed by rock fall events.	Much of this coastline will remain resistant to change, due to the nature of the geology, with negligible change predicted for this period. Rates of change are also unlikely to be affected by sea level rise. Localised cliff falls will be the main mechanism of retreat, but there will be restricted to very localised areas. The embayments are predicted to continue to narrow due to sea level rise and increased storminess as a result of climate change. Within the smaller pocket bays beaches may disappear.
7d04 – Ilfracombe	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	This stretch encompasses the town of Ilfracombe, the coastline of which is a mix of undefended cliffs and lengths of seawall that provide defence against flood risk to low-lying parts of the town.	The various seawall defences and harbour structures at Ilfracombe are likely to require upgrading during this epoch in order for adequate	Ongoing maintenance of the defences and other structures at Ilfracombe will be required during this epoch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	These are supported by harbour breakwater structures that also have a defence function. These defences are likely to require some maintenance during this epoch	levels of protection to continue to be provided.	
	This frontage is comprised of areas of hard rock, namely slates, shales and sandstones with heavily indented embayments formed due to differential erosion. Defences along this stretch are generally situated at the back of such embayments. These embayments are effectively closed systems which are unconnected in terms of sediment transport. Historically this frontage has only experienced slow rates of recession, in the region of a few hundred metres since sea levels stabilised approximately 4000 years ago. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Any erosion will be in the form of infrequent and small scale events. Similarly little change is expected to occur within the small embayments. Storm events may affect beach levels; however it is likely that these will be in the nature of cyclical changes with the sediment returning during calmer weather. The continued maintenance of the existing defences and structures at Ilfracombe will continue to minimise the risk of overtopping and associated flooding, but are unlikely to have any impact on down-drift coasts as there is very little	As the undefended cliffs along parts of this section are resistant, erosion is likely to be in the form of infrequent and small scale events. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Due to exposure of different rock types, there will, however, be slight variations in erosion rates along the coast, with the risk that a rock fall event could cause several metres of erosion; however this will only have implications very locally and for much of the coast the frequency of such of an event is low, i.e. every 10 to 100 years. New sediment input to the beaches along this stretch is dependent upon cliff erosion, which is generally negligible. Sea level rise may therefore result in some narrowing of the small pocket beaches along this section, which in places may even become submerged. Small beaches may remain at the toe of the cliffs, where fed by rock fall events. Maintenance and re-construction of the defences at Ilfracombe, to be much larger than the existing defences, will continue to prevent against erosion and flooding. A small beach will be retained to the east of Capstone Point, due to the indented	Much of this coastline will remain resistant to change, due to the nature of the geology, with negligible change predicted for this period along the undefended cliffed parts of this section. Rates of change are also unlikely to be affected by sea level rise. Localised cliff falls will be the main mechanism of retreat, but these will be restricted to very localised areas. At Ilfracombe, there will be an increased risk of overtopping therefore defences may require upgrading to continue protecting the hinterland. Ultimately erosion and flooding will be limited by the local topography and nature of the shoreline. The small embayments are predicted to continue to narrow due to sea level rise and increased storminess as a result of climate change. However, a small beach may be retained to the east of Capstone Point, but this is likely to be much narrower during this period, due to sea level rise resulting in higher water levels.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	littoral sediment transport to be interrupted by these structures.	nature of this frontage.	
7d05 – Ilfracombe (east – Larkstone Beach) to Hele Beach (west)	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defences along this short length of cliffed coastline.	No defences.	No defences.
	This frontage is comprised of hard rock, namely slates, shales and sandstones with heavily indented embayments formed due to differential erosion. These embayments are effectively closed systems which are unconnected in terms of sediment transport. Historically this frontage has only experienced slow rates of recession, in the region of a few hundred metres, since sea levels stabilised approximately 4000 years ago. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Any erosion will be in the form of infrequent and small scale events. Similar little change is expected to occur within the many small embayments, which effectively form a series of closed sediment systems. Storm events may affect beach levels; however it is likely that these will be in the nature of cyclical changes with the sediment returning during calmer weather.	As the cliffs are resistant, erosion is likely to be in the form of infrequent and small scale events. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Due to exposure of different rock types, there will, however, be slight variations in erosion rates along the coast, with the risk that a rock fall event could cause several metres of erosion; however this will only have implications very locally and for much of the coast the frequency of such of an event is low, i.e. every 10 to 100 years. New sediment input to the beaches is dependent upon cliff erosion, which is generally negligible. Sea level rise may therefore result in some of the small pocket beaches becoming permanently submerged, as retreat of the beaches is not possible due to the resistant cliffs to landward. Elsewhere beach narrowing is likely to occur. Small beaches may remain at the toe of the cliffs, where fed by rock fall events.	Much of this coastline will remain resistant to change, due to the nature of the geology, with negligible change predicted for this period. Rates of change are also unlikely to be affected by sea level rise. Localised cliff falls will be the main mechanism of retreat, but there will be restricted to very localised areas. The small embayments are predicted to continue to narrow due to sea level rise and increased storminess as a result of climate change, and may even disappear in this epoch.
7d06 – Hele Beach	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Whilst being comprised largely of undefended cliffs, there are localised defences in the form of a	The short length of seawall defence within Hele Bay is likely to require upgrading during this	Ongoing maintenance of the defences within Hele

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	seawall within Hele Bay that provides protection against flooding and erosion. These defences are likely to require some maintenance during this epoch.	epoch in order for adequate levels of protection to continue to be provided.	Bay will be required during this epoch.
	At Hele Bay the existing defences will continue to provide defence but the risk of overtopping may increase. The rest of this frontage is comprised of undefended hard rock, namely slates, shales and sandstones. Historically this frontage has only experienced slow rates of recession, in the region of a few hundred metres since sea levels stabilised approximately 4000 years ago. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Any erosion will be in the form of infrequent and small scale events. Similarly little change is expected to occur within the small embayment of Hele Bay, which is effectively a closed sediment system. Storm events may affect beach levels; however it is likely that these will be in the nature of cyclical changes with the sediment returning during calmer weather.	At Hele Bay any beach narrowing will increase the pressure on the defences, and these will need to be re-built in this epoch to be much larger than the existing structures, if they are to continue to provide adequate levels of protection in the long-term. As the undefended cliffs are resistant, erosion is likely to be in the form of infrequent and small scale events. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Due to exposure of different rock types, there will, however, be slight variations in erosion rates along the coast, with the risk that a rock fall event could cause several metres of erosion; however this will only have implications very locally and for much of the coast the frequency of such of an event is low, i.e. every 10 to 100 years. New sediment input to the beach within Hele Bay is dependent upon cliff erosion, which is generally negligible. Sea level rise may therefore result in the narrowing of this small pocket beach, as retreat of the beaches is not possible due to the resistant cliffs and defences to landward. A small beach may remain at the toe of the cliffs, where	Shoreline narrowing is predicted at Hele Bay resulting in the risk of overtopping increasing. Improvements to the defences made in the medium term will need to have accounted for this, and so the re-built defences should only require ongoing maintenance as a result. The undefended cliffed parts of this coastline will remain resistant to change, due to the nature of the geology, with negligible change predicted for this period. Rates of change are also unlikely to be affected by sea level rise. Localised cliff falls will be the main mechanism of retreat, but these will be restricted to very localised areas.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		fed by rock fall events.	
7d07 – Hele Beach (east) to Watermouth Slipway	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section is comprised of undefended cliffs.	No defences.	No defences.
	This frontage is comprised of hard rock, namely slates, shales and sandstones with heavily indented embayments formed due to differential erosion, notably at Water Mouth. These embayments are effectively closed systems which are unconnected in terms of sediment transport. Historically this frontage has only experienced slow rates of recession, in the region of a few hundred metres, since sea levels stabilised approximately 4000 years ago. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Any erosion will be in the form of infrequent and small scale events. Storm events may affect beach levels along the exposed parts of this coast, although Water Mouth is sheltered by the presence of the headlands at its narrow entrance. It is likely, however, that these will be in the nature of cyclical changes with the sediment returning during calmer weather. The beach at Water Mouth has historically been eroding and this trend is likely to continue due to the minimal inputs of sediment from cliff erosion.	As the cliffs are resistant, erosion is likely to be in the form of infrequent and small scale events. Therefore, in general, this coast is expected to experience negligible change over the next 20 years. Due to exposure of different rock types, there will, however, be slight variations in erosion rates along the coast, with the risk that a rock fall event could cause several metres of erosion; however this will only have implications very locally and for much of the coast the frequency of such of an event is low, i.e. every 10 to 100 years. The beach at Water Mouth is likely to continue to erode and narrow as sea levels rise in this period.	Much of this coastline will remain resistant to change, due to the nature of the geology, with negligible change predicted for this period. Rates of change are also unlikely to be affected by sea level rise. Localised cliff falls will be the main mechanism of retreat, but there will be restricted to very localised areas. The embayments are predicted to continue to narrow due to sea level rise and increased storminess as a result of climate change. Within the smaller pocket bays beaches may disappear. However, the beach at Water Mouth is likely to continue to erode and narrow further as sea levels rise in this period.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
7d08 – Watermouth Slipway	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	The various structures at Watermouth Slipway, that provide localised protection against flood risk, will be maintained in this period.	The structures at Watermouth Slipway are likely to need to be improved in this period if they are to continue to function as intended, and so also provide some protection against flood risk, in the face of rising sea levels.	If not happened in the medium term, the structures at Watermouth Slipway would need to be improved in this period if they are to continue to function as intended, and so also provide some protection against flood risk, in the face of rising sea levels.
	The beach at Water Mouth has historically been eroding and this trend is likely to continue due to the minimal inputs of sediment from cliff erosion. This is unlikely to be significantly affected by continued maintenance of structures along this stretch during this epoch.	The beach at Water Mouth is likely to start to narrow due to the combination of high water levels, resistant cliffs and lack of new sediment inputs. This is unlikely to be significantly affected by continued maintenance of structures along this stretch during this epoch.	The beach at Water Mouth is likely to continue to narrow due to the combination of high water levels, resistant cliffs and lack of new sediment inputs. This is may begin to be affected by the continued maintenance of structures along this stretch during this epoch, which will prevent the beach retreating landwards in response, although this would naturally be constrained by the resistant, rising topography of the area.
7d09 – Watermouth Slipway to Combe Martin	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section is comprised of undefended cliffs.	No defences.	No defences.
	This frontage is comprised of hard rock, namely shale and sandstone, with heavily indented embayments. These embayments are effectively closed systems which are unconnected in terms of sediment transport. Historically this frontage has only experienced very slow rates of recession. Therefore future erosion is expected to be negligible and in the form of infrequent and small scale events. The embayments are predicted to remain	Along most of this coast there will be negligible change in shoreline position during this period, due to the resistant nature of the cliffs. As a result of sea level rise the small pocket beaches that characterise this shoreline are likely to start to narrow due to the combination of high water levels, resistant cliffs and lack of new sediment inputs.	Negligible change is expected along this shoreline due to the resistant nature of the cliffs; however, many of the smaller pocket beaches may become permanently submerged due to high water levels as sea levels rise and the lack of fresh sediment inputs. The rate of cliff erosion is unlikely to be affected by sea level rise therefore the input of sediment to the system is expected to remain minimal. Elsewhere the beaches are likely to become narrower.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	generally stable during this period; storm events may affect beach levels, however it is likely that these will be in the nature of cyclical changes with the sediment returning during calmer weather.		
7d10 – Combe Martin	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	This section is comprised of both undefended cliffs, interrupted by defences in the form of a recurved seawall at Combe Martin, which will require maintenance during this epoch.	The defences at Combe Martin are likely to require re-building during this epoch as they reach the end of their effective life, with the new structures needing to be much larger than those they replace, such that they are able to provide adequate levels of protection in the long-term as sea levels rise and wave exposure increases.	The defences at Combe Martin would require ongoing maintenance during this period.
	This section of frontage forms an embayment that is effectively a closed system which is unconnected in terms of sediment transport. The undefended parts are comprised of hard rock cliffs, namely shale and sandstone, with heavily indented embayments. Historically this frontage has only experienced very slow rates of recession; therefore future erosion is expected to be negligible and in the form of infrequent and small scale events. This embayment is predicted to remain generally stable during this period; storm events may affect beach levels, however it is likely that these will be in the nature of cyclical changes with the sediment returning during calmer weather.	Along most of this coast there will be negligible change in shoreline position during this period, due to the resistant nature of the undefended cliffs. At Combe Martin the defences will continue to protect the hinterland, although increasing pressure on the shoreline as a result of high water levels and a lack of new sediment input may cause narrowing and result in the defences becoming more vulnerable.	Negligible change is expected along this shoreline due to the resistant nature of the cliffs in the undefended parts, and the continued presence of defences at Combe Martin. At Combe Martin the defences will continue to reduce the risk of flooding and erosion. However, the small pocket beach is likely to become narrower due to high water levels as sea levels rise and the lack of fresh sediment inputs. The rate of cliff erosion is unlikely to be affected by sea level rise therefore the input of sediment to the system is expected to remain minimal. This location is also potentially vulnerable to flash flood events which may provide occasional large inputs of sediment as the slate and sandstone bedrock is likely to be eroded during such events.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
7d11 – Combe Martin to Lynmouth	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defences along this cliffed coastline.	No defences.	No defences.
	The cliffs along this frontage are composed of sandstones with alternating slate and shale bands. Along much of the coast the cliffs are very resistant, with negligible change expected over the period. Where softer sandstones are exposed, slightly greater recession rates as expected, but even here less than 10 metres would be expected. Along this section, to the west of Lynmouth, the cliffs tend to be fronted by only narrow talus deposits.	Along this section the cliffs are expected to change very little with only very low rates of retreat anticipated. As such, there is likely to be limited inputs of sediment to help sustain the fronting beaches, and so these beaches may narrow further during this epoch as sea levels rise.	To the west of Lynmouth, the undefended cliffs will continue to behave as at present, with only very low rates of retreat anticipated. As such, inputs of sediment to the foreshore will continue to be limited and so fronting beaches are likely to narrow further, and even become permanently submerged in places, as sea level rise accelerates.
7d12 – Lynmouth	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Defences along the frontage at Lynmouth include both a seawall and harbour structures (which may provide some defence function). The seawall on the western side of the harbour is fronted by a rock and masonry revetment. Some cliff stabilisation has been undertaken at western end of Lynmouth. These defences would require maintenance during this epoch.	The various defences and structures at Lynmouth would need to be re-built during this epoch as the existing defences reach the end of their effective life.	The defences at Lynmouth, re-built in the medium term, will require ongoing maintenance during this epoch.
	At Lynmouth, the cliff stabilisation works to the west, and the seawall, which runs for over 350m from the harbour westwards along the toe of the cliffs, are expected to remain and will therefore continue to prevent any shoreline retreat. The harbour structures will also afford some protection to the town. The boulder delta at Lynmouth, a legacy of a flash flood event that	Maintenance of the defences and river training arm at Lynmouth will continue to afford some protection to the town. The training arm may have a localised impact in trapping sediment on the western side, but due to the sediment size it is not expected to be significant. Risk of overtopping and flooding to properties along the Lynmouth frontage is predicted to increase during	Maintenance of the defences and the river training arm at Lynmouth will continue to prevent any shoreline retreat. The training arm may have a localised impact in trapping sediment on the western side, but due to sediment size it is not expected to be significant. The problem of overtopping and flooding along the Lynmouth frontage is predicted to continue during this

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	occurred in 1952, is predicted to remain stable during this epoch. As such, it will continue to provide some protection to the low-lying land behind. Defences upstream on the River Lyn are expected to reduce the impacts should a similar event occur in the future.	this epoch as sea levels rise, requiring upgrading of the defences with larger structures in order to ensure adequate levels of protection are provided in the long term. Although the maintenance of defences will prevent further sediment input into the system, the beach at Lynmouth is likely to be protected by the boulder delta which is a legacy of a flash flood event that occurred in 1952. It is predicted to remain stable during this epoch and, as such, it will continue to provide some protection to the low-lying land behind. Defences upstream on the River Lyn are expected to reduce the impacts should a similar event occur in the future.	epoch, and the upgraded defences constructed in the medium term will need to account for this to ensure that adequate levels of protection are provided in this epoch. Although the maintenance of defences will prevent further sediment input into the system, the beach at Lynmouth is likely to be protected by the boulder delta which is a legacy of a flash flood event that occurred in 1952. It is predicted to remain stable during this epoch and, as such, it will continue to provide some protection to the low-lying land behind. Defences upstream on the River Lyn are expected to reduce the impacts should a similar event occur in the future.
7d13 – Lynmouth to Foreland Point	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defences along this section of cliffed coastline.	No defences.	No defences.
	The cliffs along this frontage are composed of sandstones with alternating slate and shale bands. Along much of the coast the cliffs are very resistant, with negligible change expected over the period. Where softer sandstones are exposed along this stretch, such as along Foreland Point, slightly greater recession rates as expected, but even here less than 10 metres would be expected. Along this stretch there are narrow linear upper beaches, fed by local cliff erosion; these are expected to remain quite stable during this	Along this section to the east of Lynmouth, slightly higher erosion rates are expected due to the exposure of softer sandstone deposits. Here up to 5 to 25 metres of erosion may occur by the end of this period. This erosion will supply sediment to the beaches, which should help sustain the narrow beaches present along this stretch.	Along this stretch, erosion rates may be increased further due to sea level rise. Up to 10 to 50m of erosion may occur by year 100. This input of sediment should help to retain narrow beaches along this stretch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	period.		
POLICY SCENARIO AREA: FORELAND POINT TO HURLSTONE POINT			
7d14 – Foreland Point to Gore Point	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defences present along this section.	No defences.	No defences.
	This undefended frontage of sandstone and mudstone cliffs has historically been retreating very slowly and in the future erosion is predicted to occur at similar rates, with patches of localised erosion due to wave undercutting at the cliff toe. This may result in the erosion of relict landslip deposits in the upper cliffs, which would erode, but then protect the cliff toe. Sediment transport within this region is limited both due to the resistant nature of the cliffs, and Foreland Point acting as a barrier to drift entering the region from further west.	Negligible change is expected during this period along most of this frontage. Local-scale events may cause a few metres of erosion due to long-term wave undercutting at the cliff toe and localised rock slides. Sediment transport within this region is limited both due to the resistant nature of the cliffs, and Foreland Point acting as a barrier to drift entering the region from further west. Any sediment released from the cliffs will be transported eastwards towards Gore Point, supplying the gravel beaches fronting the cliff and potentially continuing on around into Porlock Bay.	The current trend of very slow retreat is expected to continue and, in general, the form of this frontage is predicted to remain similar throughout all three epochs. There is a risk that the continued undercutting at the toe of the cliffs could result in the erosion of relict landslip deposits in the upper cliffs, which would erode, but then protect the cliff toe. Sediment transport within this region is limited both due to the resistant nature of the cliffs, and Foreland Point acting as a barrier to drift entering the region from further west. Any sediment input through cliff erosion will be transported eastwards towards Gore Point, supplying the gravel beaches fronting the cliff and potentially continuing on around into Porlock Bay; however this is expected to be small.
7d15 – Gore Point to Porlock Weir	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defence structures along this section, although the eastern boundary of this section is at the harbour arm associated with Porlock Weir.	No defences.	No defences.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	There would also be a cessation of any beach maintenance works to maintain the ridge between Gore Point and Porlock Weir under this scenario.		
	Along this section from Gore Point to Porlock Weir, the structures at Porlock Weir (the eastern boundary of this section) will continue to have an impact on the local sediment drift, with sediment being held on the western side (i.e. along this section) and prevented from being transported further eastwards with Porlock Bay, as the policy at Porlock Weir under this scenario is to 'Hold the Line'. Without any management, the beach along this stretch will be able to respond naturally and become more dissipative by widening and flattening; however, an increased risk of overwashing is predicted during this epoch as a result, and the beach will experience net retreat towards the backing high ground.	The beach along this section will continue to respond naturally to rising sea levels, with the beach continuing to roll back landwards towards the backing high ground. Continued presence of structures at Porlock Weir to the immediate east of this stretch will aid retention of some sediment along this stretch, which may help stabilise the beach locally at the eastern end.	The large-scale trend of beach recession and roll-back of the gravel ridge via overwashing is predicted to continue in response to accelerating sea level rise. The beach along this stretch is likely to experience narrowing due to a combination of sea levels rise and limited input of sediment around Gore Point. There will therefore be an increased risk of overwashing and hinterland flooding along this stretch. In places, the beach could also become constrained in its ability to roll back as it reaches the base of the backing higher ground, thus exacerbating the beach narrowing.
7d16 – Porlock Weir	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Defences along this Porlock Weir part of the Porlock Bay frontage include a seawall and harbour arm associated. There is also an earth embankment protecting the car park along the central part of this section. These defences are likely to require works to repair and re-build them towards the end of this epoch. The eastern part of this stretch towards Porlockford is comprised of soft, low cliffs that	Assuming the defences along this stretch are re-built in the short term, then they would require ongoing maintenance during this epoch	There would be ongoing maintenance of the defences at Porlock Weir during this epoch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	are undefended.		
	Between Gore Point and Porlockford cliffs, the defences along this section at Porlock Weir will continue to have an impact on the local sediment drift, which sediment being held on the western side. The defences here also appear to have interrupted the occasional westwards drift of sediment, which has resulted in as lobe of shingle at this location. This area is therefore expected to remain in a similar state to present. Along Porlockford cliffs at the eastern end of this stretch, cliff recession is likely to continue, albeit at the slow rates experienced recently, i.e. less than 0.5m/year. Overall this stretch will remain quite stable due to the influence of the Porlock Weir, though any erosion may impact upon road access to Porlock Weir. As such, when defences at Porlock Weir are re-built during this epoch, to be much larger and more robust than the present defences such that they are able to provide adequate levels of protection in the long term as sea levels rise and the adjacent sections of coast retreat, leaving Porlock Weir more prominent and so exposed along the Porlock Bay shoreline. In order to reduce risk of erosion causing loss of the road access, it is likely that defences will need to be extended eastwards along this stretch, possibly including the use of groynes.	The defences at the Weir will continue to restrict sediment transport eastwards which has resulted in localised accumulation on the updrift western side. Continued maintenance of these defences will help maintain a situation similar to today. There will, however, be increased pressure on the defences at Porlockford, as beach levels along here are expected to drop due to the interruption of sediment from the north-west and continued transport eastwards. In the past, it appears that the Weir has also interrupted to occasional westward movement of shingle, resulting in the lobe of shingle that is present; therefore beach levels here could fluctuate. There will be continued erosion of Porlockford Cliffs, which could increase, both due to the limited input of sediment and sea level rise.	The defences at the Weir will continue to restrict sediment to the beaches further east. This will help maintain the beach updrift (i.e. towards Gore Point), but could cause issues downdrift (although historical evidence suggests that westward transport may occasionally occur). The defences and cliffs at Porlockford will be at increased risk as beaches here become denuded. Erosion of the undefended Porlockford cliffs to the immediate east will release some sediment, but much of this is likely to be moved further eastwards. These are soft cliffs so will also be sensitive to accelerated sea level rise. Erosion of these adjacent cliffs would also increase the outflanking risk to the defended section along the access road to Porlock Weir.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
7d17 – Porlock Weir to Hurlstone Point	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Along this frontage, the shingle ridge would be allowed to adapt naturally to rising sea levels, meaning it will roll back onto the low-lying land behind. However, in order to reduce risk of this causing flooding to areas such as Bossington and Porlock, secondary defence embankments would be constructed in this epoch, which could potentially be armoured at a later time if required. These areas are also at the end of steeply rising valleys that may be susceptible to flash flood events, and so this would need to also be accounted for in the design of any embankment defences. Existing defences along this part of the Porlock Bay frontage, which include groynes associated with New Works, would not be maintained under this policy. Under this scenario, the option to carry out beach management activities of recycling and reprofiling could occur as necessary to control the roll back of the beach (this management option would not be possible under a 'No Active Intervention' scenario).	There would be ongoing maintenance of the secondary embankments at Bossington and Porlock to reduce risk of coastal flooding, whilst the shingle ridge continues to be allowed to roll back naturally as sea level rise accelerates.	There would be ongoing maintenance of the secondary embankments at Bossington and Porlock to reduce risk of coastal flooding, and it may become necessary to enlarge and/or armour these during this epoch as they become more exposed to tide and wave action due to the continued roll back of the shingle ridge as sea level rises.
	Overall the current trends experienced along the barrier are expected to continue in the future, with the barrier being in a state of net retreat. Without any management, the barrier is able to	There will be continued erosion of the undefended Porlockford Cliffs at the western end of this section, which could increase, both due to the limited input of sediment and sea level rise.	Erosion of Porlockford cliffs along the western part of this stretch will release some sediment, much of which is likely to be moved further eastwards towards Hurlstone Point. These are

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	respond naturally and become more dissipative by widening and flattening; however, a continuation of overwashing is predicted during this epoch. Along the undefended Porlockford cliffs, at the western end of this stretch, cliff recession is likely to continue, albeit at the slow rates experienced recently, i.e. less than 0.5m/year. Overall this stretch will remain quite stable due to the influence of the Porlock Weir to the west and the ebb-tidal at the 1996 breach along this section. The breach is expected to remain open with continued growth of the associated ebb tidal delta. Both spits at the mouth of the breach are likely to remain relatively stable over this period. The area of salt marsh behind the ridge in the vicinity of the 1996 breach is predicted to continue to vertically accrete. The groynes to the east of New Works will continue to have an impact on alongshore drift and should help maintain some beach stability along the barrier along this section; however these groynes do not prevent cross-shore processes and therefore the barrier will still be prone to roll-over as gravel is pushed over the crest. They may therefore start to intercept more sediment during this period, although it is assumed that the groynes will not be maintained and so this influence is likely to reduce over time as these structures gradually deteriorate .	This could begin to pose an outflanking risk to the adjacent defended stretch towards Porlock Weir. The 1996 breach is expected to remain open, with continued stability of the western spit and growth of the ebb tidal delta. Growth of this delta would be at the expense of the coast to the immediate west of the breach and here there is a high risk that the barrier integrity could be threatened. Alternatively, it is possible that the delta could afford some protection to the shoreline. The salt marsh behind the breach is expected to continue to vertically accrete, although its lateral extent could start to become squeezed as a result of barrier roll-back, as its landward boundary is currently fixed by field boundaries. There is also a risk of breaching along the eastern spit as the breach position moves progressively eastwards. The vulnerability of the barrier along this stretch will also be increased as the remaining groynes to the east of New Works deteriorate and fail and/or become less effective as the barrier retreats landwards. This would result in increased longshore drift locally and therefore the barrier along this stretch could become reduced in volume and vulnerable to crest recession and narrowing. Here the risk of hinterland flooding would therefore increase. The stretch of coast between New Works and the War Memorial will also be vulnerable to	soft cliffs that will also be sensitive to accelerated sea level rise, and so the rate of sediment supply to the ridge along this section could increase as a result. It is thought likely that the 1996 breach will remain open, due insufficient rates of longshore drift (exacerbated by the Weir); however, the rate of salt marsh growth behind the breach could decrease the tidal prism sufficiently to allow the breach to reseal. Conversely, an increase in sea level rise would tend to increase the tidal prism; therefore it would depend upon the balance between these two processes. There is therefore a degree of uncertainty associated with this stretch coast and that to the west. It is possible that breaches may occur along other sections of the barrier, particularly to the east of New Works, up to the War Memorial. Despite the increase in sediment being moved alongshore, due to failure of the groyne defences, the ebb-tidal delta at the breach could continue to act as a sink for this sediment. There is also a limited supply of sediment in the system as a whole and any sediment moved into this frontage, will continue eastwards towards Hurlstone Point. The frequency of wave overwashing events would also increase with accelerated sea level rise and this coastline would be vulnerable to any increase in storminess or change in wind-wave climate. Any breaches formed, due to catastrophic failure

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	Further eastwards the barrier is expected to remain generally stable and largely static, as it will continue to be feed with sediment from the west and is sufficiently robust. Certain sections, are however, likely to become increasingly vulnerable to overwashing and crest narrowing.	breaching during this period, although up to this point it has remained in a largely static, but over steepened state. Any sediment released as groynes fail to the east of New Works is likely to continue to be moved further eastwards and also the growth of the ebb-tidal delta will result in a diminished input from further west (due in parts to lack of sediment input around Gore Point and the continued defence at Porlock Weir). Therefore this stretch could be denuded of volume and in its over steepened state it is at greater risk of catastrophic breakdown. It is possible that any breaches that form could become permanent, but it has been suggested (Orford, 2003) that inlet efficiency could be reduced, should a number of breaches form, which would then limit the permanence of breaches. Further east, between Horner Water and Hurlstone Point, the beach is expected to remain stable and relatively static.	of the barrier, could remain open, but this would be governed by inlet efficiency, which may depend upon the number of breaches forming. It is not thought likely that sediment released by defences updrift failing would be a significant enough to close breaches otherwise. Further east, between Horner Water and Hurlstone Point, the beach will continue to be fed by sediment being moved alongshore; therefore much of this is likely to remain stable and static. Accelerated sea level rise may, however, have an increased impact during this period and it is likely that the boulder foreshore could become less effective in terms of wave dissipation. Therefore during this period, the trend may start to change to net crest recession as the barrier starts to roll landward. The barrier, along most of its length, is likely, however, to remain robust and provide continued protection to the low-lying hinterland behind.
POLICY SCENARIO AREA: HURLSTONE POINT TO HINKLEY POINT			
7d18 – Hurlstone Point to Minehead (west)	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section is comprised of undefended cliffs, and ends (at the eastern boundary) just to the west of Minehead, where defences in the form of buried groynes immediately west of Minehead, and a terminal groyne associated with the harbour	No defences along this stretch, although the eastern end will be affected by continued presence of defences at Minehead in the adjacent section.	No defences along this stretch, although the eastern end will be affected by continued presence of defences at Minehead in the adjacent section.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	breakwater occur.		
	The heavily faulted and folded sandstones along this stretch of the coastline are predicted to experience low rates of recession as has occurred historically; therefore negligible erosion is predicted by year 20 for most of this coast. However, there is a risk of small frequent rock falls and also larger events occurring at Minehead Bluff, which locally could cause up to 10 to 50m retreat over a short section of cliff. The cliffs are fronted by a narrow gravel beach which is predicted to generally remain stable during this epoch, although trends of beach lowering towards the east may continue. There is little, if any, incoming sediment from updrift areas and therefore beaches rely on local sediment inputs, which are negligible due to the slow rates of cliff erosion. The harbour breakwater at Minehead and associated concrete groyne would continue to affect the very eastern end of this stretch, by trapping sediment and preventing it travelling further east around into Minehead Bay.	Low rates of erosion are expected to continue, with less than 5m erosion predicted by year 50. However, there is a risk of a large landslide at Minehead Bluff, which locally could cause up to 10 to 50m retreat over a short section of cliff. The cliffs are fronted by a narrow gravel beach and beach lowering towards the east may continue. There is little, if any, incoming sediment from updrift and therefore should sediment be lost it would not be expected to be replaced. This trend is predicted to be exacerbated by rising sea levels and increased storminess associated with climate change which will deplete beach sediments further without any significant sources of sediment from updrift areas to replace it. The resistant cliffs mean that the beach will be unable to retreat and therefore narrowing is expected. The harbour breakwater at Minehead and associated concrete groyne would continue to impact upon the very eastern end of this stretch, by trapping sediment and preventing it travelling further east around into Minehead Bay. This would help provide some protection to the cliffs immediately north-west of Minehead.	The cliffs along this stretch are expected to continue to slowly erode, with less than 10m expected by the end of this period. However, there is a risk of a large landslide at Minehead Bluff, which locally could cause up to 10 to 50m retreat over a short section of cliff. The cliffs are fronted by a narrow gravel beach which is predicted to narrow and continue lowering during this epoch. There is little, if any, incoming sediment from updrift and therefore should sediment be lost it would not be expected to be replaced. This trend is predicted to be exacerbated by rising sea levels and increased storminess associated with climate change which will deplete beach sediments further without any significant sources of sediment from updrift areas to replace it. As long as it remains, the harbour breakwater at Minehead and associated concrete groyne would continue to trap sediment and prevent it travelling further east around into Minehead Bay. The wider beach that would be retained updrift of the structure would afford some protection to the cliff behind, including along the very eastern end of this stretch.
7d19 – Minehead	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	At the western end of this stretch, there are some buried groynes immediately west of	The various defences and structures along this stretch, including seawall, breakwaters and	The groynes to the immediate west of Minehead Harbour would likely require further upgrade

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	Minehead, and a terminal groyne associated with the harbour breakwater at Minehead. These structures would need to be maintained and eventually upgraded towards the end of this epoch. The Minehead urban area along this stretch is protected by a scheme constructed in 1997-8 consisting of new recurve seawall, rock revetments and groynes coupled with a large beach recharge. These structures will remain during this period with ongoing maintenance, including beach recycling as required to retain sufficient beach in front of the seawall.	groynes, will all require ongoing maintenance during this epoch. Continued beach recycling would form part of this maintenance.	during this period, although the harbour structures themselves are only likely to require ongoing maintenance. Along the frontage of the Minehead urban area, the various defences that includes a recurve seawall, rock revetments and groynes, may need some improvements during this period. This will be supported by ongoing beach recycling activities, which may also require additional beach recharge in this epoch.
	Maintenance and upgrade of the harbour breakwater at Minehead and associated concrete groyne during this epoch, means this feature will continue to trap sediment and prevent it travelling further east around into Minehead Bay, resulting in a localised accumulation of sediment updrift. As a result, there has been a lack of sediment to feed the beach to the east and there have been extensive defence works including a beach recharge. The predominately sandy beach is held in place by large rock groynes. Little change is anticipated along this shoreline during this period, as the new defence scheme will maintain beach stability. However, the terminal groyne at the eastern end	With continued maintenance occurring, the barrier to drift provided by the harbour structures at the western end of this stretch will continue during this epoch, with any sediment travelling from the west being trapped updrift. This would help provide some protection to the cliffs immediately north-west of Minehead. To the west of the harbour arm breakwater, there could also be risk of flooding in this western part of this stretch, but this would be very minor. There is not a backdoor flood route to Minehead (Black & Veatch, 2006a). Defences along the frontage at Minehead will remain, fixing the shoreline position at this location. The groynes, whilst reducing longshore losses will not prevent offshore sediment	With continued maintenance occurring, the barrier to drift provided by the harbour structures at the western end of this stretch will continue during this epoch, with any sediment travelling from the west being trapped updrift. The wider beach that would be retained updrift of the structure would afford some protection to the cliff behind. To the west of the harbour arm breakwater, there could also be a risk of flooding, but this would be very minor and there is not a backdoor flood route to Minehead (Black & Veatch, 2006a). The defences will remain along the rest of the Minehead frontage but will be increasingly exposed to wave action. There will therefore be an increased risk of overtopping and the defence

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	of the bay will continue to prevent sediment leaving the scheme area (to move further east towards Dunster). This may exacerbate problems at the Warren (refer to the adjacent section) where an overall trend of shoreline retreat is predicted due to its exposure to storm wave energy. This in turn could pose a risk of outflanking and backdoor flooding from the west to this section along the Minehead frontage, until such time that this risk is reduced by construction of secondary flood defence embankments to the east of Minehead in this epoch under this scenario.	movement and therefore during this period, under rising sea levels, there may start to be intertidal narrowing. This will put increased pressure on the defences, and beach recycling would likely be required to minimise these impacts. The continued presence of the terminal groyne at the eastern boundary of this stretch will prevent sediment moving down-drift, which will likely continue to exacerbate the problems at the Warren, and modifications to the terminal groyne may held reduce these impacts.	heights may need to be increased (likely involving re-building defences to be larger than at present as the 1998 scheme nears the end of its effective life during this epoch). Beach recycling activities that support the retention of defences will become increasingly difficult due to coastal squeeze and ongoing offshore movement of sediment. As such, further beach recharge is likely to be required along this stretch during this epoch. The continued presence of the terminal groyne at the eastern boundary of this stretch will prevent sediment moving down-drift.
7d20 – The Warren (Minehead Golf Course)	**Policy Assessed = Hold the Line**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	There are no hard defences along this stretch of coast, although it is significantly influenced by the presence at its western end of the terminal groyne at Minehead constructed as part of the 1998 scheme. Currently beach recycling and reprofiling is undertaken, to limited success due to lack of sediment, to maintain a beach in front of embankments that would otherwise be eroded. Indeed, some areas of the bank have eroded in recent times due to periods of low beach levels. Under this scenario, these beach management activities would continue in the short term whilst 'Managed Realignment' options are investigated in advance of implementation during the medium	During this epoch, implementation of 'Managed Realignment' measures investigated in the short term would occur under this scenario. This would involve adopting the secondary defence line established in the short term, as the primary defence line in this epoch, including possibly armouring the embankment. The fronting beach and 'currently defended area' would then be allowed to erode and retreat back to this new defence line.	The realigned defence position would be maintained in this epoch to continue to reduce the risk of flooding to the wider Minehead area to the west, whilst the fronting shoreline would be allowed to continue to erode back to this point.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	term. However, the risk of overtopping and erosion in this area poses a significant flood risk to Minehead, and so to reduce this risk in the short term, secondary embankment defences would be constructed in land during this epoch under this scenario.		
	This is a low-lying section of the shoreline defended by an earth embankment which itself is fronted by a managed gravel and cobble ridge and sandy lower beach. Due to lack of sediment along this stretch, beach management activities struggle to provide an adequate fronting beach which has resulted in parts of the earth embankment defence being eroded during storm events. However, the terminal groyne at the eastern end of the bay will continue to prevent sediment reaching this stretch. This may exacerbate problems at the Warren where an overall trend of shoreline retreat is predicted due to its exposure to storm wave energy. This area is therefore vulnerable to overtopping and flooding. To ensure the risk of flooding to the wider Minehead area is minimised from any such overtopping and flooding along the Warren, construction of a secondary defence would occur in this epoch to provide additional defence inland.	The maintenance of the fronting beach through beach recycling and reprofiling will become increasingly difficult to achieve in the current position due to lack of sediment and rising sea levels. Therefore, during this epoch, these beach maintenance activities will cease and the existing shoreline position allowed to erode and retreat landwards, to the secondary defence line constructed in the short term. As the shoreline retreats to this new position, the secondary defence will therefore become more exposed to wave and tidal action, and so the defence is likely to require armouring in this epoch as the change in policy occurs. The area of the Warren that would erode under this scenario is underlain by cobble/shingle deposits that would erode and so be released to the shoreline sediment transport system, which is likely to benefit downdrift beaches at Dunster and Blue Anchor. The amount of sediment that could be released is, however, uncertain, and this would	Continued shoreline retreat is predicted across this. At the Warren, as the ridge becomes increasingly denuded of material the realigned defence position will become increasingly exposed to wave and tide action, and if not occurred in the medium term, then the defence here will need to be armoured in order to ensure that it continues to aid the reduction in flood risk to the wider Minehead area to the west. The erosion of the fronting area is, however, likely to continue to release sediment to the shoreline which could then be transported to the east to benefit the shoreline at Dunster and Blue Anchor.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		need to be considered in the investigations of 'Managed Realignment' that would occur in the short term. However, the realigned defence position would still retain the Warren (as an all-be-it smaller) headland that will continue to influence coastal processes in Minehead Bay to the west.	
7d21 – Dunster Beach	**Policy Assessed = Hold the Line**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Groynes are found along this stretch that encompasses Dunster Beach, which serve to protect the gravel storm ridge. These are private defences that have been constructed over a number of years, and under this scenario these would be allowed to remain and be maintained, though they may require upgrading during this epoch. These defences are also supported by beach recycling and reprofiling, in order to maintain sufficient beach along this stretch to reduce the risk of overtopping and flooding to the low-lying hinterland. This continued management in this epoch would allow measures to be developed for relocating people and property located along this stretch in advance of moving to a 'Managed Realignment' policy in the medium term. The eastern end of this unit is at the outflow of the River Advill channel, which appears to act as a groyne, preventing sediment reaching downdrift areas. This structure is assumed to be maintained	Maintenance of the groynes and beach along this stretch will become increasingly technically difficult during this period due to reduced sediment supply from the west and rising sea levels. As such, measures developed in the short term for the relocation of people and property along the Dunster Beach frontage, are likely to need to be implemented during this epoch. The beach would then be allowed to roll back towards the secondary defence line established in the short term as sea levels rise. The secondary defence would therefore become the primary defence in terms of reducing risk of flooding to a wider area of low-lying hinterland, and may need to be armoured in this epoch as the defence becomes more exposed to wave and tide action. Adaptation of the outflow of the River Advill at the eastern end of this stretch may also need to be considered.	The realigned defence position would be maintained in this epoch to continue to reduce the risk of flooding to the wider area of low-lying hinterland and to reduce the risk of 'backdoor' flooding to Minehead to the west, whilst the fronting shoreline would be allowed to continue to erode back to this point.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	during this epoch. Whilst the shoreline defences would continue to be permitted to be retained by private funds, there is a risk that flooding in this are could cause 'backdoor' flooding to Minehead to the west. Therefore, under this scenario, construction of a secondary defence would occur in this epoch to provide additional defence inland. This would be in combination with a similar defence in the adjacent section at the Warren.		
	This is a low-lying section of the shoreline fronted by a gravel and cobble ridge and sandy lower beach. Along this stretch the shingle beach forms the main defence, and along much of its length is also protected by groynes. The gravel storm ridge along Dunster Beach has been eroded, due to the net eastward movement of shingle, but little input from further west, although beach recycling and construction of groynes along this stretch has served to maintain more beach material than would have remained otherwise. Where groynes have been constructed the beach has remained fairly stable and this trend is expected to continue during this period.	The groynes at Dunster may help to stabilise the beach locally by restricting longshore drift, but offshore losses may continue, resulting in beach retreat here, as a result of sea level rise. This may be mitigated to some degree by release of (an uncertain amount of) sediment from erosion of the Warren that would occur during this epoch under the 'Managed Realignment' policy that would be implemented in this epoch along the Warren under this scenario. Nevertheless, with roll back and narrowing of the ridge occurring, the effectiveness of groynes will reduce and there will therefore be an increased risk of breaching and flooding of the hinterland. Therefore, realignment to the secondary defence position in this epoch will provide a more sustainable defence alignment for reducing flood risk to the wider area of low-lying hinterland.	Continued shoreline retreat is predicted across this frontage, which will be undefended during this epoch due to measures introduced in the medium term. Along Dunster Beach, the groynes (for as long as the remain) will become redundant as the shoreline behind retreats. Along this stretch there will be an increased risk of overtopping and breaching, although large-scale flooding will be constrained by continued maintenance of the realigned defence position.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
7d22 – Dunster Beach (east) to Ker Moor	**Policy Assessed = Managed Realignment**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	This area that forms the central pert of Blue Anchor Bay, is undefended in terms of hard defence structures, although some flood protection is afforded by the fronting gravel and cobble ridge, which will be allowed to evolve naturally under this scenario. In order to reduce the risk of flooding to the wider area of low-lying hinterland (that is posed by the risk of overtopping and breaching of the fronting beach along this stretch), a secondary defence embankment would be constructed in this epoch. This would be in support of similar secondary defences that would be constructed along the adjacent sections to the west. Assuming that the West Somerset Railway Line is to be defended along its length under this scenario, then a possible secondary defence alignment could be seaward of the railway line.	Under this scenario, the realigned defence position established in the short term would be maintained. As the fronting beach rolls back towards this position, it may become necessary to armour the embankment defence as it becomes more exposed to wave and tide action.	Under this scenario, the realigned defence position established in the short term would continue to be maintained. As the fronting beach rolls back towards this position, and if not already occurred in the medium term, it may become necessary to armour the embankment defence as it becomes more exposed to wave and tide action.
	This is a low-lying section of the shoreline fronted by a gravel and cobble ridge and sandy lower beach. Whilst Blue Anchor Bay as a whole has remained quite stable historically, the gravel storm ridge has been eroded, particularly along this stretch towards Dunster Beach, due to the net eastward movement of shingle, but little input from further west. Net retreat is likely to continue at rate of around 0.6m/year (Black & Veatch, 2006a), with	Along this undefended stretch, erosion will continue, with roll back and narrowing of the ridge. There will therefore be an increased risk of breaching and flooding of the hinterland, although this would be minimised by the presence of the secondary defence, constructed in the short term and maintained during this epoch. The realigned defence position along this stretch will become increasingly exposed to wave and tide action as erosion occurs at rates of around	Continued shoreline retreat is predicted across the undefended frontage, with an associated increase in the risk of overtopping and breaching. However, large-scale flooding of the hinterland will continue to be reduced by maintenance of the realigned defence position during this epoch. Maintenance of the realigned defences at the eastern end of Ker Moor, adjacent to the defences at Blue Anchor, would also serve to reduce the risk of outflanking to Blue Anchor

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	roll back and narrowing of the ridge. This roll back of the beach could potentially cause outflanking of defences at Blue Anchor to the east, and also result in increased risk of overtopping and breaching causing wide-spread flooding to the low-lying hinterland. As such, construction of a secondary defence line in this epoch would reduce both these risks, and be supportive of the policies along the adjacent sections of coast to both the east and west.	0.6m/year or more. Therefore defences will need to be armoured during this epoch in order to provide adequate levels or protection into the long term.	itself.
7d23 – Blue Anchor	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = No Active Intervention**
	Along this stretch at the eastern end of Blue Anchor Bay, there is a scheme involving a concrete seawall and timber groynes, with the wall reinforced by a rock revetment and T-head rock groynes in the east. These defences will for the most part require ongoing maintenance during this period, although at the very eastern end, where defences are older (having not been upgraded as part of the recent scheme to protect the road at Blue Anchor), new defences will need to be constructed, extending a short way further east than present, in order to reduce the risk of outflanking to the new defences to the immediate west and also reduce the risk of the road being affected by erosion.	The various defences along the frontage at Blue anchor would require ongoing maintenance during this epoch. During this epoch, in advance of the transition to the long-term policy of 'No Active Intervention', measures would need to be developed to allow for the relocation of people and property that will be required when this policy change happens.	During this epoch, as the various defences reach the end of their effective life, they would not be replaced with larger, more expensive defences (that would be required to deal with the effects of sea level rise and greater wave action), and there would be a move towards 'No Active Intervention' under this scenario, with maintenance of the defences ending. As such, measures to relocate people and property, developed in the medium term, would need to be implemented at this time. Even without maintenance however, the defences would remain an influence on coastal evolution for some time to come, as they will gradually deteriorate and fail (i.e. they will not fall down straight away once maintenance stops).
	The defences at Blue Anchor will prevent roll back of the beach, and thus beach narrowing is	The defences at Blue Anchor Bay will continue to fix the shoreline position and prevent roll back of	At Blue Anchor defences will continue to fix the shoreline position, which will stand several

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	expected. The risk of outflanking of these defences by erosion of the adjacent soft cliffs to the immediate east of the older defences at Blue Anchor, would need to be addressed in this epoch. Under this scenario, a rock revetment type defence would be constructed to replace the old seawall defences. In order to be effective and reduce both risk of outflanking, and reduce the risk of erosion causing loss of the road as it drops down to the sea front at Blue Anchor, the replacement defences are likely to need to extend a short distance eastwards, along the front of part of the adjacent, currently undefended cliff.	the beach, and thus beach lowering may be expected. This section of shoreline will become increasingly exposed as adjacent undefended stretches continue to erode at rates of around 0.6m/year or more. This risk at the western end will however, be reduced by the policy at Ker Moor under this scenario, which would involve holding a realigned defence position seawards of the West Somerset Railway line. At the eastern end of this section, the risk of outflanking caused by erosion of the adjacent cliffs will also be a concern, depending upon the actual rate of erosion that occurs. There may therefore be a need to bolster the rock revetment defence (constructed in the short term) at the eastern end of this stretch during this epoch to manage this risk.	metres seaward of the adjacent shorelines by this period. These defences will continue to reduce the risk of flooding, but would require upgrading, due to increased exposure. There would also be a high risk of outflanking at the eastern end unless works are undertaken to address this. It is unlikely that replacement of defences along this section, which will require much larger and more expensive defences, and so under this scenario maintenance would be withdrawn and defences allowed to gradually deteriorate and eventually fail. Therefore the risk of overtopping, flooding and erosion would increase towards the end of this epoch, and measures to adapt to this will need to be implemented.
7d24 – Blue Anchor to Watchet	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section encompasses the undefended cliffs from Blue Anchor to Watchet up to the western extent of defences at Watchet.	No defences.	No defences.
	This frontage mostly comprises Triassic shale and limestone and Jurassic mudstone cliffs fronted by intertidal rock platforms, intersected by small embayments. To the east of Blue Anchor Bay, sandstone cliffs are replaced by mudstones cliffs, which erode via cliff falls, landslips and rotational slides. Such events have resulted in several metres of erosion	The mudstone cliffs erode via cliff falls, landslips and rotational slides, which have resulted in significant amounts of erosion at certain locations in the recent past. Along much of the undefended frontage, between 5 and 25m of recession may occur, but a landslide event at any one location could cause up to 10 to 50m of erosion. Differential cliff erosion to the varying geology	Differential erosion of this cliffed frontage will continue, although rates may increase due to sea level rise. Failure will be through both gradual erosion and larger landslide events. Along much of the frontage between 10 and 50m of erosion mat be expected, however there is a risk that any one location a larger event could cause up to 50m of erosion.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	in the recent past. Up to 2 to 10m of recession may occur along this undefended stretch of coast by year 20, although there is a risk that a single event could cause up to 10 to 50m erosion at a single location. Any cliff erosion that does occur will provide sediment to feed the beach downdrift, i.e. to the east. This erosion will result in some widening of the rock shore platforms; these rock platforms are predicted to continue providing defence to the foreshore.	and continued impact of defences will result in more pronounced embayments forming along this coastline, with the resistant limestone areas and defended stretches forming headlands. Any cliff erosion that does occur will provide sediment to feed the beach downdrift, i.e. to the east. However, the individual embayments act as semi-closed systems and therefore transport around the headlands is likely to be limited and on a periodic basis. Although the rock platforms are predicted to continue providing defence to the foreshore, sea level rise may reduce their defence role and therefore the cliff erosion rates are likely to increase. Sediment transport rates may also be affected.	Ultimately the coastline will become defined by a series of crenulated bays, formed between the more resistant limestone outcrops, which will emerge as headlands. In the long term, the bay could reach a more stable form, resulting in lower rates of erosion; however this process may be prevented by the predicted acceleration in sea level rise. Rates of cliff erosion will vary across this frontage, with little or no erosion being experienced in some places, but potentially up to 100m in other locations. Any cliff erosion that does occur will provide sediment to feed the beach downdrift, i.e. to the east. However, as the crenulated bays develop, sediment transport may reduce. Sea level rise and increased storminess as a result of climate change are predicted to reduce the defence role of the rocky intertidal platform, and thus the cliff erosion rates are likely to increase. Sediment transport rates may also be affected.
7d25 – Watchet to Doniford	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Watchet is protected by concrete seawalls, and rock groynes and revetments in the harbour area and some of these defences will require upgrading towards the end of this epoch with much larger structures, such that they are able to provide adequate levels of protection in the long term. Between Watchet and the western half of Doniford Bay (fronting the railway line) there are	Watchet is protected by concrete seawalls, and rock groynes and revetments in the harbour area. Some of these defences will require ongoing maintenance during this epoch, whilst others will need to be upgraded with much larger structures , such that they are able to provide adequate levels of protection in the long term. The defences between Watchet and the western	The various defences along this stretch will require ongoing maintenance during this epoch to ensure that they continue to provide adequate levels of protection. At the western and eastern ends, however, there will be an increasing risk of outflanking due to erosion of adjacent, undefended cliffs, and so measures to bolster these areas between

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	localised stretches of rock revetment defences and small groynes protecting the low-lying land and part of the West Somerset Railway. These defences would likely need to be upgraded with larger defences in order to continue to provide adequate levels of protection to the railway line, in support of policies along adjacent sections of coast which also seek to protect the railway line along its length under this scenario.	half of Doniford Bay, having been upgraded in the short term, will require ongoing maintenance during this epoch in order to ensure that adequate levels of protection to the railway are provided.	defended and undefended parts of the coast may be required in this period to address this risk.
	This frontage mostly comprises Triassic shale and limestone and Jurassic mudstone cliffs fronted by intertidal rock platforms, but which are protected against erosion along much of this section by the presence of a range of defences along the cliff toe. The defences at Watchet currently fix the shoreline position and therefore there will be no change along this frontage during this period. These defences will continue to minimise the risk of flooding and erosion, although this is only a localised effect. To the east, the defences between Watchet and Doniford will continue to help slow cliff erosion along this stretch, but there may be issues of outflanking to either side of the defences. Replacement of defences along this stretch will continue to afford both erosion and flood protection to the low cliffed areas, but would also need to consider how best to address the outflanking issues, which is likely to require much	At Watchet, the shoreline position has historically remained fixed by defences, including the harbour structures. This localised effect is predicted to continue, with the cliffs thus prevented from eroding and adding sediment to the system. To the east, a crenulated-form embayment is forming in the lee of the limestone outcrop at Helwell Bay. Defences, in the form of groynes and rock revetment, which will be replaced with larger (and likely more extensive) defences in the short term prevent cliff erosion here. However, the here beach is narrower than to the east and the cliffs are much lower, therefore there could be an increased risk of both flooding, due to overtopping, and erosion during this period. Any cliff erosion that does occur will provide sediment to feed the beach downdrift, i.e. to the east, although due to the defences there are not predicted to be significant impacts. Although the rock platforms are predicted to	At Watchet, the shoreline position has historically remained fixed by defences, including the harbour structures. This localised effect is predicted to continue, with the cliffs thus prevented from eroding and adding sediment to the system. Defences between Watchet and Doniford will continue to reduce erosion and so impact upon sediment supply, especially if the extent of defences is increased in the short term. The beach fronting these defences is therefore predicted to narrow further, and could even become permanently submerged as sea levels rise during this epoch. Any cliff erosion that does occur will provide sediment to feed the beach downdrift, i.e. to the east. However, as the crenulated bays develop, sediment transport may reduce. Although the rock platforms are predicted to continue providing defence to the foreshore, sea level rise may reduce their defence role and

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	larger defences over a longer stretch of this coast. Any cliff erosion that does occur will provide sediment to feed the beach downdrift, i.e. to the east. This erosion will result in some widening of the rock shore platforms; these rock platforms are predicted to continue providing defence to the foreshore. However, if replacement defences extend along these undefended areas, then this sediment supply would reduce.	continue providing defence to the foreshore, sea level rise may reduce their defence role and therefore the cliff erosion rates are likely to increase. Sediment transport rates may also be affected.	therefore the cliff erosion rates are likely to increase. Sediment transport rates may also be affected.
7d26 – Doniford to St Audries Bay	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Much of this stretch is comprised of undefended cliffs. However, along part of this section, the cliff toe in front of Doniford Holiday Camp is protected by a rock revetment which is likely to require replacement during this epoch with a much larger structure better able to provide an adequate level of protection in the longer term. Consideration will also need to be given to extending the defences at the time they are replaced, to address the risk of outflanking that would be posed to these defences as adjacent undefended cliffs erode further in the future.	The defences along this stretch, having been improved and possibly extended in the short term, would require ongoing maintenance during this epoch. Any undefended stretches that remain would continue to erode, and this may pose a risk of outflanking where erosion abuts defences. As such, the ends of defences may need to be bolstered further where this occurs.	The defences along this stretch, having been improved and possibly extended in the short term, would require ongoing maintenance during this epoch. Any undefended stretches that remain would continue to erode, and this may pose a risk of outflanking where erosion abuts defences. As such, the ends of defences may need to be bolstered further where this occurs.
	This frontage mostly comprises Triassic shale and limestone and Jurassic mudstone cliffs fronted by intertidal rock platforms, defended in parts by rock revetment at the cliff toe that serves to prevent erosion locally. These cliffs erode via cliff falls, landslips and	The mudstone cliffs erode via cliff falls, landslips and rotational slides, which have resulted in significant amounts of erosion at certain locations in the recent past. Where cliffs remain undefended along parts of this frontage, between 5 and 25m of recession may occur, but a landslide event at any one location could cause up to 10 to	Where cliffs remain undefended along parts of this section of coast, erosion will continue, although rates may increase due to sea level rise. Failure will be through both gradual erosion and larger landslide events. Along much of the frontage between 10 and 50m of erosion may be expected, however there is a risk that at any one

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	rotational slides. Such events have resulted in several metres of erosion in the recent past. Up to 2 to 10m of recession may occur along this undefended stretch of coast by year 20 although there is a risk that a single event could cause up to 10 to 50m erosion at a single location. The maintenance and improvement of the rock revetment in front of the Doniford Holiday Camp will continue to afford both erosion and flood protection to the low cliffed areas, but there may be issues of outflanking to either side of the defences (unless defences are extended in length when they are replaced). Any cliff erosion that does occur will provide sediment to feed the beach downdrift, i.e. to the east. This erosion will result in some widening of the rock shore platforms; these rock platforms are predicted to continue providing defence to the foreshore. The Swill and its associated pipeline appears to disrupt along shoreline sediment transport, resulting in a localised build up of beach to the west of the outlet.	50m of erosion. Continued defence at Doniford Holiday Camp will prevent erosion locally, with the cliffs thus prevented from eroding and adding sediment to the system. This situation will be exacerbated if the defences are extended along more of the cliff toe during the short term. Due to the reduced amount of sediment, combined with rising sea levels, the beach fronting this area will narrow during this period. Any cliff erosion that does occur will provide sediment to feed the beach downdrift, i.e. to the east and not this section of shoreline, although due to the defences there are not predicted to be significant impacts. The Swill and its associated pipeline appears to disrupt longshore sediment transport, resulting in a localised build up of beach to the west of the outlet. Although the rock platforms are predicted to continue providing defence to the foreshore, sea level rise may reduce their defence role and therefore the cliff erosion rates are likely to increase. Sediment transport rates may also be affected.	location a larger event could cause up to 50m of erosion. Continued defence at Doniford Holiday Camp will prevent erosion locally, with the cliffs thus prevented from eroding and adding sediment to the system. This situation will be exacerbated if the defences are extended along more of the cliff toe during the short term. Due to the reduced amount of sediment, combined with rising sea levels, the beach fronting these defences is therefore predicted to narrow further, and could even become permanently submerged as sea levels rise during this epoch. Any cliff erosion that does occur will provide sediment to feed the beach downdrift, i.e. to the east and not this section, although due to the defences there are not predicted to be significant impacts. The Swill and its associated pipeline acts to disrupt longshore sediment transport, resulting in a localised build up of beach to the west of the outlet. Although the rock platforms are predicted to continue providing defence to the foreshore, sea level rise may reduce their defence role and therefore the cliff erosion rates are likely to increase. Sediment transport rates may also be affected.
7d27 – St Audries	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
Bay	There are no defences along this stretch of cliffed coastline.	No defences	No defences.
	This mainly cliffed stretch of coastline is cut into Triassic shales and limestones which have historically eroded slowly due to their resistant nature. Future rates are predicted to be similar to these historical ones with up to 2 to 10m of erosion possible by year 20. There is a risk of localised erosion events could result in up to 10m erosion at a single location. This will be a continuation of past trends, which has resulted in a series of small indents along this shoreline. Any sediment eroded from the cliffs will provide material to the foreshore and the extensive rock platforms will continue to afford some protection to the cliffs. There is potential for this sediment to be transported eastwards, towards Hinkley Point., but it is periodically interrupted by small headlands.	The cliffs will continue to erode quite slowly, with up to 5 to 25m by the end of this period. There is, however, a risk of localised erosion events which may cause several metres of erosion over a very localised stretch. Even under a scenario of sea level rise, the extensive rock platform will continue to afford some protection to the backing cliffs. Any sediment eroding from the cliffs will provide material to the foreshore, which may be sufficient to enable a beach to be retained at the toe of the cliffs. Sediment will also be moved eastwards along the coast.	There will be continued, slow erosion of the cliffs, with up to 10 to 50m possible by year 100. Small erosion events will reinforce the naturally indented nature of this coastline. Under a scenario of sea level rise, the shore platforms may become partially submerged, but are likely to still play a role in affording some protection to the backing cliffs and beaches. The beach currently provides protection to the cliffs in the form of the wide intertidal rock platforms, and these are predicted to continue doing so during this epoch. The intertidal foreshore is predicted to remain stable as the sediment entering the system from cliff erosion counteracts shoreline retreat as a result of sea level rise. Narrow beaches are expected to be retained, particularly within the small bays formed as the cliffs erode. There is still likely to remain a sediment pathway eastwards towards Hinkley Point, but the interconnectivity of this coast may periodically reduce due to the emergence of headlands further to the east.
7d28 – St Audries Bay to Lilstock	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	There are no defences along this section of coast.	No defences.	No defences.
	This mainly cliffed stretch of coastline is cut into	The cliffs will continue to erode quite slowly, with	There will be continued, slow erosion of the cliffs,

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	Triassic shales and limestones which have historically eroded slowly due to their resistant nature. Future rates are predicted to be similar to these historical ones with up to 2 to 10m of erosion possible by year 20. There is a risk of localised erosion events could result in up to 10m erosion at a single location. This will be a continuation of past trends, which has resulted in a series of small indents along this shoreline. Any sediment eroded from the cliffs will provide material to the foreshore and the extensive rock platforms will continue to afford some protection to the cliffs. There is potential for this sediment to be transported eastwards, towards Hinkley Point, but it is periodically interrupted by small headlands.	up to 5 to 25m by the end of this period. There is, however, a risk of localised erosion events which may cause several metres of erosion over a very localised stretch. Even under a scenario of sea level rise, the extensive rock platform will continue to afford some protection to the backing cliffs. Any sediment eroding from the cliffs will provide material to the foreshore, which may be sufficient to enable a beach to be retained at the toe of the cliffs. Sediment will also be moved eastwards along the coast. The small area of low-lying land at Kilve Point is also at risk from flooding during this period as the natural gravel ridge will become more vulnerable to overtopping as a result of sea level rise. The potential for barrier roll back is very limited as the coast is backed by rising topography.	with up to 10 to 50m possible by year 100. Small erosion events will result in small bays being cut, reinforcing the naturally indented nature of this coastline. Under a scenario of sea level rise, the shore platforms may become partially submerged, but are likely to still play a role in affording some protection to the backing cliffs and beaches. The beach currently provides protection to the cliffs in the form of the wide intertidal rock platforms, and these are predicted to continue doing so during this epoch. The intertidal foreshore is predicted to remain stable as the sediment entering the system from cliff erosion counteracts shoreline retreat as a result of sea level rise. Narrow beaches are expected to be retained, particularly within the small bays formed as the cliffs erode. There is still likely to remain a sediment pathway eastwards towards Hinkley Point, but the interconnectivity of this coast may periodically reduce due to the emergence of headlands. The risk of very localised overtopping and flooding at Kilve Point will increase due to rising sea levels and the risk of the barrier becoming breached. Hinterland flooding will, however, be restricted due to the local topography. There is limited opportunity along this coastline for barrier

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
			roll-back, therefore there is likely to be barrier narrowing.
7d29 – Lilstock	**Policy Assessed = Hold the Line**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This short section of coast at Lilstock is defended along its length by a combination of earth embankment fronted, in its western part, by rock armour. Under this scenario these defences would be maintained to a minimum standard during this epoch to ensure they continued to function whilst measures are developed to manage the transition in policy to one of 'No Active Intervention' in the medium and long term. Even with maintenance, these defences are predicted to fail during the latter part of this epoch.	Any residual effects of defences at Lilstock will disappear in the first part of this epoch, after which time the coast will return to a fully natural state.	No defences.
	The short stretch of rock armour and earth embankment at Lilstock will continue to reduce the risk of flooding and erosion along this lower-lying section of coast, but there will be a risk of outflanking due to continued cliff erosion either side. Without maintenance, the defences will deteriorate and fail by the end of this epoch, and so the risk of flooding and erosion will increase.	The previously protected coastline at Lilstock is at risk from overtopping and flooding, although this risk will only be localised due to the hinterland topography. The potential for barrier roll back as sea levels rise is very limited as the coast is backed by rising topography.	The risk of very localised overtopping and flooding at Lilstock will increase due to rising sea levels and the risk of the barrier becoming breached. Hinterland flooding will, however, be restricted due to the local topography. There is limited opportunity along this coastline for barrier roll-back, therefore there is likely to be barrier narrowing.
7d30 – Lilstock to Hinkley Point	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This is an undefended section of coast.	No defences.	No defences.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	This mainly cliffed stretch of coastline is cut into Triassic shales and limestones which have historically eroded slowly due to their resistant nature. Future rates are predicted to be similar to these historical ones with up to 2 to 10m of erosion possible by year 20. There is a risk of localised erosion events could result in up to 10m erosion at a single location. This will be a continuation of past trends, which has resulted in a series of small indents along this shoreline. Any sediment eroded from the cliffs will provide material to the foreshore and the extensive rock platforms will continue to afford some protection to the cliffs. There is potential for this sediment to be transported eastwards, towards Hinkley Point., but it is periodically interrupted by small headlands.	The cliffs will continue to erode quite slowly, with up to 5 to 25m by the end of this period. There is, however, a risk of localised erosion events which may cause several metres of erosion over a very localised stretch. Even under a scenario of sea level rise, the extensive rock platform will continue to afford some protection to the backing cliffs. Any sediment eroding from the cliffs will provide material to the foreshore, which may be sufficient to enable a beach to be retained at the toe of the cliffs. Sediment will also be moved eastwards along the coast.	There will be continued, slow erosion of the cliffs, with up to 10 to 50m possible by year 100. Small erosion events will result in small bays being cut, reinforcing the naturally indented nature of this coastline. Under a scenario of sea level rise, the shore platforms may become partially submerged, but are likely to still play a role in affording some protection to the backing cliffs and beaches. The beach currently provides protection to the cliffs in the form of the wide intertidal rock platforms, and these are predicted to continue doing so during this epoch. The intertidal foreshore is predicted to remain stable as the sediment entering the system from cliff erosion counteracts shoreline retreat as a result of sea level rise. Narrow beaches are expected to be retained, particularly within the small bays formed as the cliffs erode. There is still likely to remain a sediment pathway eastwards towards Hinkley Point, but the interconnectivity of this coast may periodically reduce due to the emergence of headlands.
POLICY SCENARIO AREA: HINKLEY POINT TO BREAN DOWN			
7d31 – Hinkley Point	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Defences protecting Hinkley Point power stations are in the form of a recurved seawall backed by	Defences at Hinkley Point will need ongoing maintenance during this epoch.	Defences at Hinkley Point will need ongoing maintenance during this epoch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	gabion baskets, which would continue to be maintained during this period. These defences are also likely to be extended about 1km westwards as part of the Hinkley Point 'C' reactor development; current proposals envisage construction of defences along the line of the existing shoreline to the west of the existing site.		
	The existing defences will continue to protect the power station site from flooding and erosion (due to overtopping). The shoreline position will therefore remain fixed during this epoch. This will also be the case to the west of the existing site, once defences are constructed along this stretch as part of the planned expansion of the power station. The shoreline at this point protrudes seawards by about 100m, due to the power station being constructed on made ground within the foreshore zone. This situation would remain as the planned extension westwards of defences is envisaged to occur along the line of the present shoreline (i.e. not involving significant land reclamation). The increased exposure of this shoreline means that shingle beaches are not present at the toe of the defence: waves are able to reach the structure at high water. The extension of defences westwards would result in the eventual loss of beach in this are as well.	The defences will continue to fix the shoreline position and minimise the risk of flooding and erosion. As the undefended cliffs to the west erode (i.e. to the west of the extended defences), there could be an increasing risk of outflanking to the west of the site; therefore works could be required to address this. The site will also become increasingly exposed; therefore the risk of overtopping could increase (particularly along the eastern part of this frontage where the defences are older), unless defences are improved to address this. As well as preventing the input of sediment from the erosion of these cliffs, as the promontory increases, any sediment travelling east will become trapped and unable to continue eastwards towards Stolford. The beach fronting the westward extension of the defences would also narrow and likely become submerged by the end of this epoch.	The defences will continue to fix the shoreline position, but there would be an increasing risk of outflanking due to continued erosion of the undefended cliffs to the west. As sea levels rise the fronting platforms could become increasingly submerged and eroded; thereby increasing the wave energy at the toe of the defences.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	The defences also act to interrupt the transport of shingle westwards along this frontage and historically the gravel ridges downdrift have been eroding. This trend is predicted to continue during this epoch.		
7d32 – Hinkley Point to Stolford	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Managed Realignment**
	Along this stretch between Hinkley Point and Stolford, defence is provided by a rock revetment fronting earth embankment. These defences will require ongoing maintenance and eventual upgrade (replaced with larger embankment defences) during this epoch, such that they continue to reduce the risk of flooding to the low-lying hinterland.	The defences along this stretch will require ongoing maintenance during this epoch to maintain an adequate level of protection against the risk of flooding.	All defences will require increasing levels of maintenance during this epoch in order that they continue to maintain an adequate level of protection. Under this scenario, however, as the defences reach the end of their design life during this epoch, they would not be renewed in their existing position, but rather re-built in a realigned (landward) position.
	Along this stretch to the east of Hinkley Point, the hinterland becomes low-lying, forming the start of the Steart Peninsular, which stretches westwards into the mouth of the Parrett. Between Hinkley and Stolford the gravel beaches have been greatly denuded and only a narrow strip of shingle is currently present. Currently the main defence is provided by a rock revetment, but this is also holding the coastline away from its natural alignment, which may be exacerbating the issue of beach loss.	The gravel beach along this stretch would likely become submerged during this epoch as it is constrained in adapting to rising sea levels by the continued presence of defences. The low-lying hinterland is likely to become increasingly at risk from flooding via overtopping. The continued defences at Hinkley Point may exacerbate this problem by preventing new sediment inputs from further west reaching this area (and areas to the east towards the mouth of the Parrett Estuary).	Due to the impact on sediment drift of both the defences at Hinkley Point power station and the natural headland of Hinkley Point, the beach along this stretch (and those to the east) are predicted to have little incoming sediment to maintain them as sea level rise accelerates. Realignment of the defences along this stretch during this epoch would create more of an embayment between Hinkley and Stolford, which may, over time, see beach deposition as any sediment which is transported around Hinkley Point enters this area and is unable to be

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
			transported further eastwards.
7d33 – Stolford	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Managed Realignment**
	Rock revetment fronting earth embankment provides defence against the risk of flooding and erosion to Stolford. These defences will require ongoing maintenance and eventual upgrade (replaced with larger embankment defences) during this epoch, such that they continue to provide adequate levels of protection.	The defences along this stretch will require ongoing maintenance during this epoch to maintain an adequate level of protection.	All defences will require increasing levels of maintenance during this epoch in order that they continue to maintain an adequate level of protection. Under this scenario, however, as the defences reach the end of their design life during this epoch, they would not be renewed in their existing position, but rather re-built in a realigned (landward) position. This would be undertaken in combination with 'Managed Realignment' towards Hinkley Point during this epoch.
	The hinterland along this stretch is low-lying, forming the start of the Steart Peninsular, which stretches westwards into the mouth of the Parrett. Along this frontage at Stolford, the gravel beaches have been greatly denuded and only a narrow strip of shingle is currently present. Currently the main defence is provided by a rock revetment, but this is also holding the coastline away from its natural alignment, which may be exacerbating the issue of beach loss.	The gravel beach along this stretch would likely become submerged during this epoch as it is constrained in adapting to rising sea levels by the continued presence of defences. The low-lying hinterland is likely to become increasingly at risk from flooding via overtopping. The continued defences at Hinkley Point to the west may exacerbate this problem by preventing new sediment inputs from further west reaching this area (and areas to the east towards the mouth of the Parrett Estuary).	Due to the impact on sediment drift of both the defences at Hinkley Point power station and the natural headland of Hinkley Point, the beach along this stretch (and those to the east) are predicted to have little incoming sediment to maintain them as sea level rise accelerates. Realignment of the defences along this stretch during this epoch would reduce the degree to which this section would form an additional headland that would block any sediment that does enter this area from the west from being transported eastwards along the Steart Peninsula (i.e. minimise the impact of realignment in the adjacent section between Hinkley and Stolford

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
			which would likely form an embayment).
7d34 – Stolford to Wall Common	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Along this stretch east of Stolford to Wall Common, defences are in the form of gabion walls. These defences are in a poor condition and would need to be significantly upgraded if they were to provide adequate levels of protection in the future. However, under this scenario, the defences would not be renewed in their existing position, but rather the defences would be constructed in a realigned (landward) position with the existing defence line then being artificially breached. The exact position and form of the realignment in this area is at present uncertain, although ongoing detailed studies as part of the Steart Managed Realignment Project will identify the most appropriate way in which this realignment should occur.	Defences realigned in the short term would require ongoing maintenance, whilst under this scenario, further opportunities to undertake 'Managed Realignment' either by realigning defence positions or introducing regulated tidal exchange systems, could also be considered. This will be guided by the more detailed studies currently being undertaken as part of the Steart Managed Realignment Study.	Defences realigned in the short and/or medium term would require ongoing maintenance, whilst under this scenario, further opportunities to undertake 'Managed Realignment' either by realigning defence positions or introducing regulated tidal exchange systems, could also be considered. This will be guided by the more detailed studies currently being undertaken as part of the Steart Managed Realignment Study.
	Along this stretch between Stolford and Wall Common (to the west of Steart), protection from flooding is currently provided by the shingle barrier and attenuation of waves across the intertidal flats and salt-marshes, which become prevalent towards Steart. The general trend has been long term erosion of both the salt marsh and the shingle beach and this net trend is expected to continue in the future along much of	The gravel ridge along this stretch is predicted to continue eroding during this epoch, with the ridges rolling back to a more natural and less exposed alignment. This would be aided by the realignment of defences along this stretch in the short term, with the beach allowed to roll back towards the realigned defence position. There is likely to be widening of the artificial breach created in the short term during this	Due to the impact on sediment drift of both the defences at Hinkley Point power station and the natural headland of Hinkley Point, and the realignment of the defence line between Hinkley and Stolford during this epoch, the gravel ridges along this stretch are predicted to have little incoming sediment to maintain them and they may narrow as well has migrating landwards due to sea level rise towards realigned defence

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	the frontage. 'Managed Realignment' during this epoch would provide space for the development of more intertidal habitat and salt marsh over the low-lying hinterland to counter the impacts of this erosion. As a result of artificial breaching as part of implementation of this policy, a tidal inlet would form which would reduce the stability of adjacent sections of ridge and thus may lead to subsequent enlargement of the breach. The breach would be able to re-seal should there be sufficient sediment, resulting in a need for management intervention to maintain the artificial breach. However the continued defences at Hinkley Point may prevent this during this period, and breaches may become permanent naturally as a result.	epoch, resulting in increased inundation of inter-tidal areas created under the policy of 'Managed Realignment in the preceding epoch. The continued policy of 'Managed Realignment' during this epoch would minimise the risk of this flooding affecting key infrastructure by allowing construction of defences in key areas (e.g. around electricity pylons). The breach along this stretch would be able to re-seal should there be sufficient sediment, however the continued defences at Hinkley Point is likely to prevent this during this period and breaches would likely become permanent naturally.	positions. Ridge erosion may lead to further widening of the artificial breach originally created in the short term along this stretch resulting in increased inundation of inter-tidal areas created under the policy of 'Managed Realignment in the preceding epochs. Breaches may become permanent should there be insufficient sediment to naturally repair them.
7d35 – Steart Village	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Managed Realignment**
	Embankment defences front this section along Steart village, situated along the Steart Peninsula, a spit that extends from west to east to enclose the western side of the mouth of the Parrett Estuary. These defences are in poor condition and would, under this scenario, need to be re-built with much larger defences in the early part of this epoch, such that they provide an adequate level of protection in the medium to long term.	The defences re-built in the short term would require ongoing maintenance during this epoch.	All defences will require increasing levels of maintenance during this epoch in order that they continue to maintain an adequate level of protection. Under this scenario, however, as the defences reach the end of their design life during this epoch, they would not be renewed in their existing position, but rather re-built in a realigned (landward) position.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	Along this stretch, protection from flooding is currently provided by the existing defences fronted by a shingle barrier and attenuation of waves across the intertidal flats and salt-marshes, which become prevalent towards Steart. The general trend has been long term erosion of both the salt marsh and the shingle beach and this net trend is expected to continue in the future along much of the frontage. Sediment transport rates along this stretch to the east of Wall Common are negligible and therefore the beach in this region may remain more stable during this epoch.	The gravel ridge along the western part of this stretch towards Wall Common is predicted to continue eroding during this epoch, with the ridges rolling back to a more natural and less exposed alignment. The low-lying hinterland is likely to become increasingly at risk from flooding via overtopping, with the road access to Steart also becoming intermittently cut-off as a result. This would be exacerbated by lack of new sediment entering this area from further west caused by continued defence at Hinkley Point. Continued defence provision along the frontage at Steart will reduce the risk of overtopping causing wide-spread flooding, although 'nuisance' overtopping could become more frequent by the end of this epoch (Atkins, April 2009). Continued policy to 'Hold the Line' here will also exacerbate coastal squeeze, resulting in loss of fronting salt marsh, which would lead to increased exposure of defences as a result. Steart Point to the east of this stretch interacts with the Parrett Estuary; therefore any changes in the estuary regime may affect this shoreline. It has been suggested that in the long term a new channel could be cut through the Steart Peninsula; this would significantly alter the hydrodynamic and sedimentary regime of the whole area. However, potential changes to the regime of the Parrett, and its interaction with the open coastline are not well understood; therefore the	Due to the impact on sediment drift of both the defences at Hinkley Point power station and the natural headland of Hinkley Point, the gravel ridges along this stretch are predicted to have little incoming sediment to maintain them and they may narrow further as well has migrating landwards due to sea level rise. Ridge erosion may lead to breaching to the west of Steart towards Wall Common resulting in hinterland flooding. Breaches may become permanent should there be insufficient sediment to naturally repair them. In this instance a tidal inlet would form which would reduce the stability of adjacent sections of ridge and thus may lead to subsequent enlargement of the breach. Loss of fronting salt marsh along the Steart village frontage would expose this area to greater wave action during this epoch. The defences would therefore be renewed in a realigned position in this period as they reach the end of their design life. Steart Point to the east of this stretch interacts with the Parrett Estuary; therefore any changes in the estuary regime may affect this shoreline. It has been suggested that in the long term a new channel could be cut through the Steart Peninsula; this would significantly alter the hydrodynamic and sedimentary regime of the whole area. However, potential changes to the regime of the Parrett, and its interaction with the open

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		impacts of any changes within the estuary on this frontage are difficult to quantify.	coastline are not well understood; therefore the impacts of any changes within the estuary on this frontage are difficult to quantify. Realignment of this section could potentially impact upon the right bank of the River Parrett around Huntspill River, however, other studies have shown that this issue is best dealt with by managing the right bank of Parrett rather than management along this stretch (Atkins, April 2009).
7d36 – Steart Village (east) to Fenning Island	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Much of this stretch is undefended, although some embankments are present, situated more on the estuary side of this section, and provide localised defence against the risk of flooding. Under this scenario, a set back defence embankment would be constructed landwards of the existing point, in order to provide flood risk protection to the rest of the Steart Peninsula during this epoch.	The continued policy of 'Managed Realignment' would involve maintenance of the set-back defence during this period.	The continued policy of 'Managed Realignment' would involve maintenance of the set-back defence during this period, with consideration to realigning the defence further if required to minimise the impacts of coastal squeeze caused as sea levels rise and fronting salt marsh reduces. Realignment in this period could occur in conjunction with realignment along the adjacent Steart Village frontage.
	This section forms the seaward end of the Steart Peninsular, which stretches westwards into the mouth of the Parrett from Hinkley Point. Along this stretch, protection from flooding is currently provided primarily by the shingle barrier and attenuation of waves across the intertidal flats and salt-marshes, which become prevalent	The gravel ridge along this stretch is predicted to continue eroding during this epoch, with the ridges rolling back to a more natural and less exposed alignment. The low-lying hinterland is likely to become increasingly at risk from flooding via overtopping. Localised breaches may also occur as a result of sea level rise and the reduced protection afforded by the shingle ridge, although	Due to the impact on sediment drift of both the defences at Hinkley Point power station and the natural headland of Hinkley Point, and realignment of the coast between Hinkley Point and Steart, the gravel ridges along this stretch are predicted to have little incoming sediment to maintain them and they may narrow as well has

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	towards Steart. The general trend has been long term erosion of both the salt marsh and the shingle beach and this net trend is expected to continue in the future along much of the frontage. Construction of a set back defence line to provide flood protection to the rest of Steart would not impact upon this natural evolution during this period. Sediment transport rates along this stretch are negligible and therefore the beach in this region may remain more stable during this epoch. Realignment of this section could potentially impact upon the right bank of the River Parrett around Huntspill River, however, other studies have shown that this issue is best dealt with by managing the right bank of Parrett rather than management along this stretch (Atkins, April 2009).	the potential for this to cause flooding of the wider area of low-lying land that makes up the Steart Peninsula would be minimised by the presence of the set back defence constructed in the short term. Such breaches would be able to re-seal should there be sufficient sediment, however the continued defences at Hinkley Point may prevent this and breaches may become permanent. Steart Point interacts with the Parrett Estuary; therefore any changes in the estuary regime may affect this shoreline. It has been suggested that in the long term a new channel could be cut through the Steart Peninsula; this would significantly alter the hydrodynamic and sedimentary regime of the whole area. However, potential changes to the regime of the Parrett, and its interaction with the open coastline are not well understood; therefore the impacts of any changes within the estuary on this frontage are difficult to quantify.	migrating landwards due to sea level rise. Ridge erosion may lead to breaching resulting in hinterland flooding. Breaches may become permanent should there be insufficient sediment to naturally repair them. In this instance a tidal inlet could form which would reduce the stability of adjacent sections of ridge and thus may lead to subsequent enlargement of the breach. Steart Point interacts with the Parrett Estuary; therefore any changes in the estuary regime may affect this shoreline. It has been suggested that in the long term a new channel could be cut through the Steart Peninsula; this would significantly alter the hydrodynamic and sedimentary regime of the whole area. However, potential changes to the regime of the Parrett, and its interaction with the open coastline are not well understood; therefore the impacts of any changes within the estuary on this frontage are difficult to quantify.
7d37 – Fenning Island to Combwich	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Along this outer left bank of the Parrett Estuary, embankment defences constrain the estuary channel over much of its length. These defences will require maintenance during the first part of this epoch, whilst measures are developed, if found to be appropriate, and implemented to realign the defences by 2025. This could involve constructing defences in a realigned position, or	The defences along this stretch will require ongoing maintenance during this epoch, whether realigned or maintained in the existing position (if regulated tidal exchange is introduced in the short term). Continued policy of 'Managed Realignment' provides option to realign further if required (or	All defences will require continued maintenance and eventual upgrading (replaced with larger structures) during this epoch, whether realigned or maintained in the existing position (if regulated tidal exchange is used). Continued policy of 'Managed Realignment' provides option to realign further if required (or

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	implementing a regulated tidal exchange through the existing defences (further study would be required to determine which is suitable). Realignment along this stretch would be dependent the extent of realignment on the seaward side of the Steart Peninsula; current options being considered as part of the Steart Managed Realignment Project include creating new habitat on the low-lying land behind the defences along this stretch. As such, the outcome of this study will affect the choice of policy along this frontage.	along other parts of this stretch if not all areas are realigned in the short term).	along other parts of this stretch if not all areas are realigned in the preceding epochs).
	The constrained nature of the Parrett channel along the length of the Parrett Estuary means that there is little opportunity for change during this epoch. By realigning defences in this area, there could be opportunity to provide space for the estuary to adapt as sea levels rise; though realigning in this area of the outer estuary could potentially increase flood levels upstream. The key risk, however, will be from the meandering nature of the low water channel which will put local pressure on the various defences within the estuary. This could be impacted upon by realigning along this stretch of the outer estuary, and would need to be considered in detail before implementation occurs.	Maintenance of the defences will mean that much of the estuary remains constrained in this epoch. Currently the estuary is in a stable state and this is likely to continue for much of this period, however, as sea level rise this will start to impact on the estuary as a whole. Sea level rise is expected to result in an increased tidal prism and therefore an increase in tidal flow. Sediment deposition in the lower reaches may increase. Studies (EA, 2009) suggest that overall sea level rise will have a marginal impact on the existing estuarine regime. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise. On the opposite side from this stretch, the Huntspill	Maintenance of the defences means that the channel will remain constrained along much of the estuary. Sea level rise will increase the tidal prism, resulting in increased tidal flows, although the estuary is expected to remain flood dominant. Increased water levels would increase pressure on the defences and therefore works are likely to be required to address this. Realignment along this outer part of the estuary would therefore minimise these effects. Changes in the estuary may also affect the adjacent coastline through affecting the position of the outer low water channel. It has been postulated (Pethick, 2002) that the increase in tidal prism would cause the outer low water channel to swing clockwise, which would affect

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		Channel regulates discharge from the lower parts of the River Brue catchment area, and as such provides a steady inflow of water into the lower Parrett. Increases in the discharge through this channel would be likely to cause further localised erosion of the banks either side of the confluence (i.e. along this stretch), and of the area of salt marsh downstream. Realignment in this area could provide flood storage capacity to help mitigate this effect, though experience has shown that realignment in outer parts of estuaries has potential to actually increase flood risk upstream and so this would require detailed consideration before implementation occurs. Localised pressure on defences may also result from changes in the position of the low water channel – which are difficult to predict without further studies.	the coastline of Burnham. Realignment along this part of the outer estuary could significantly impact upon this evolution, and so this would need to be considered in detail prior to any implementation. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise. On the opposite side from this stretch, the Huntspill Channel regulates discharge from the lower parts of the River Brue catchment area, and as such provides a steady inflow of water into the lower Parrett. Increases in the discharge through this channel would be likely to cause further localised erosion of the banks either side of the confluence (i.e. along this stretch), and of the area of salt marsh downstream.
7d38 – Combwich	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	The settlement of Combwich, on the left bank of the Parrett Estuary, is protected against the risk of flooding primarily by flood embankments, though some short lengths of flood walls are also present. These defences will need to be upgraded (re-built with larger structures) during this epoch such that they continue to provide an adequate level of protection (Environment Agency 2009).	The defences at Combwich will require ongoing maintenance during this epoch.	The defences at Combwich will require ongoing maintenance and likely further upgrade towards the end of this epoch, as sea levels rise and the structures constructed in the short term near the end of their effective life.
	The constrained nature of the Parrett channel	Maintenance of the defences at Combwich means	Maintenance of the defences at Combwich means

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	along this stretch means that there is little opportunity for change during this epoch.	that the estuary along this stretch will remain constrained. Currently the estuary is in a stable state and this is likely to continue for much of this period, however, as sea level rise this will start to impact on the estuary as a whole. Sea level rise is expected to result in an increased tidal prism and therefore an increase in tidal flow. Sediment deposition in the lower reaches may increase. Studies (EA, 2009) suggest that overall sea level rise will have a marginal impact on the existing estuarine regime. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise. Localised pressure on the defences at Combwich may also result from changes in the position of the low water channel – which are difficult to predict without further studies.	that the channel will remain constrained along this part of the estuary. Sea level rise will increase the tidal prism, resulting in increased tidal flows, although the estuary is expected to remain flood dominant. Increased water levels would increase pressure on the defences and therefore works are likely to be required to address this. Changes in the estuary may affect the adjacent coastline through affecting the position of the outer low water channel. It has been postulated (Pethick, 2002) that the increase in tidal prism would caused the outer low water channel to swing clockwise, although this is likely to have a lesser effect on this stretch within the estuary. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise.
7d39 – Combwich to Bridgwater	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	The Parrett Estuary along this stretch is constrained over much of its length by embankments with localised revetments and flood walls that provide protection against the risk of flooding to a large area of agricultural land as well as settlements at Cannington and Chilton Trinity. Under this scenario, the defences along this stretch would need to be re-built towards the	The defences along this stretch, having been re-built in the short term, will require ongoing maintenance during this epoch. Along part of this stretch, a surge barrier may also be constructed during the latter part of this epoch in support of the defences upstream at Bridgwater (Environment Agency, 2009).	All defences along this stretch will require ongoing maintenance and likely further upgrade towards the end of this epoch, as sea levels rise and the structures constructed in the short term near the end of their effective life. There would be continued maintenance of the surge barrier constructed in the latter part of the preceding epoch, in support of the defences at

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	end of this epoch, with much larger structures than exist at present being constructed such that an adequate level of protection is maintained in the future.		Bridgwater.
	The constrained nature of the Parrett channel along this stretch means that there is little opportunity for change during this epoch.	Maintenance of the defences means that the estuary along this stretch will remain constrained. Currently the estuary is in a stable state and this is likely to continue for much of this period, however, as sea level rise this will start to impact on the estuary as a whole. Sea level rise is expected to result in an increased tidal prism and therefore an increase in tidal flow. Sediment deposition in the lower reaches may increase. Studies (EA, 2009) suggest that overall sea level rise will have a marginal impact on the existing estuarine regime. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise.	Maintenance of the defences means that the channel remains constrained along much of the estuary. Sea level rise will increase the tidal prism, resulting in increased tidal flows, although the estuary is expected to remain flood dominant. Increased water levels would increase pressure on the defences and therefore works are likely to be required to address this. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise.
7d40 – Bridgwater (upper Parrett Estuary)	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	The Parrett Estuary along this stretch, which encompasses the town of Bridgwater, is constrained over much of its length by a range of defences including embankments, concrete or masonry walls, sheet piled walls and flood walls. These defences will require maintenance and improvement during this epoch (Environment Agency, 2009) such that they are able to provide	The Bridgwater defences will require ongoing maintenance during this epoch. Downstream of Bridgwater, a surge barrier may also be constructed during the latter part of this epoch in support of the defences at Bridgwater (Environment Agency, 2009).	All defences along this stretch will require ongoing maintenance and possible further upgrade towards the end of this epoch, as sea levels rise and the structures constructed in the short term near the end of their effective life. There would be continued maintenance of the surge barrier constructed in the latter part of the

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	adequate levels of protection against the risk of flooding.		preceding epoch, in support of the defences at Bridgwater.
	The constrained nature of the Parrett channel in this upper part of the estuary means that there is little opportunity for change during this epoch.	Maintenance of the defences in this upper part of the estuary means that the estuary will remain constrained. Currently the estuary is in a stable state and this is likely to continue for much of this period, however, as sea level rise this will start to impact on the estuary as a whole. Sea level rise is expected to result in an increased tidal prism and therefore an increase in tidal flow. Studies (EA, 2009) suggest that overall sea level rise will have a marginal impact on the existing estuarine regime. Construction of a surge barrier would serve to reduce the impacts of climate change on Bridgwater. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise.	Maintenance of the defences means that the channel remains constrained along much of the estuary. Sea level rise will increase the tidal prism, resulting in increased tidal flows, although the estuary is expected to remain flood dominant. Increased water levels would increase pressure on the defences and therefore works are likely to be required to address this. Maintenance of a surge barrier would continue to minimise the impact of this on Bridgwater. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise.
7d41 – Bridgwater to Dunball	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	The Parrett Estuary along this length is constrained by embankment defences that provide protection against the risk of flooding to the low-lying hinterland, upon which a large amount of development and infrastructure is located. These defences will require ongoing maintenance during this epoch in order to ensure adequate	The defences along this stretch will require ongoing maintenance during this epoch. Towards the end of this period, these defences will need to be replaced with larger defences. Along part of this stretch, a surge barrier may also be constructed during the latter part of this epoch in support of the defences upstream at Bridgwater (Environment Agency, 2009).	All defences along this stretch will require ongoing maintenance during this epoch. There would be continued maintenance of the surge barrier constructed in the latter part of the preceding epoch, in support of the defences at Bridgwater.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	levels of protection are maintained.		
	The constrained nature of the Parrett channel long this stretch means that there is little opportunity for change during this epoch.	Maintenance of the defences along this stretch means that the estuary will remain constrained in this area. Currently the estuary is in a stable state and this is likely to continue for much of this period, however, as sea level rise this will start to impact on the estuary as a whole. Sea level rise is expected to result in an increased tidal prism and therefore an increase in tidal flow. Sediment deposition in the lower reaches may increase. Studies (EA, 2009) suggest that overall sea level rise will have a marginal impact on the existing estuarine regime. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise.	Maintenance of the defences means that the channel will remain constrained along this part of the estuary. Sea level rise will increase the tidal prism, resulting in increased tidal flows, although the estuary is expected to remain flood dominant. Increased water levels would increase pressure on the defences and therefore works are likely to be required to address this. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise.
7d42 – Dunball to River Brue	**Policy Assessed = Hold the Line**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	This area of the right bank of the Parrett Estuary is constrained over much of its length by embankments with localised revetments that provide protection against the risk of flooding to a large expanse of low-lying, largely agricultural, hinterland. Under this scenario, all of the defences along this stretch would be maintained during this epoch whilst measures are investigated and developed to implement 'Managed Realignment' of defences	During this epoch, parts of this stretch will undergo 'Managed Realignment'; involving construction of set-back defences and breaching of existing embankments. This is anticipated to occur at Pawlett Ham (Environment Agency, 2009) but could equally occur in other parts of this stretch along the Pawlett Levels frontage, resulting in creation of a new area of salt marsh and defence of the wider area of low-lying hinterland being maintained by	All defences along this stretch, whether in existing or realigned positions, will require continued maintenance during this epoch. The continued policy of 'Managed Realignment' would allow further areas along this stretch to be realigned during this epoch, if appropriate to do so.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	along parts of this stretch (most likely at Pawlett Hams (Environment Agency, 2009)).	defences in a more sustainable position; though implementation of this will also be dependent upon improvements to the upstream defences at Bridgwater as realignment here could potentially affect the flood risk upstream. Defences not subject to realignment along this stretch would need to be improved during this epoch (i.e. replaced with larger structures) such that they continue to provide protection against the risk of flooding.	
	The constrained nature of the Parrett channel along this stretch means that there is little opportunity for change during this epoch. The key risk will be from the meandering nature of the low water channel which will put local pressure on the various defences within the estuary.	Maintenance of the defences along this stretch (where defences are not realigned during this epoch) means that much of the estuary in this area will remain constrained. Currently the estuary is in a stable state and this is likely to continue for much of this period, however, as sea level rise this will start to impact on the estuary as a whole. Sea level rise is expected to result in an increased tidal prism and therefore an increase in tidal flow. Sediment deposition in the lower reaches may increase. Studies (EA, 2009) suggest that overall sea level rise will have a marginal impact on the existing estuarine regime. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise. At the northern end of this stretch, the Huntspill	Maintenance of the defences along this stretch, particularly where defences are not realigned, means that the channel will remain constrained along parts of this section of the estuary. Sea level rise will increase the tidal prism, resulting in increased tidal flows, although the estuary is expected to remain flood dominant. Realignment along this stretch may affect this, though it is difficult to quantify any such impacts without further study. Increased water levels would increase pressure on the defences, particularly those that remain in existing alignments, and therefore works are likely to be required to address this. Changes in the estuary in this area may affect the adjacent coastline through affecting the position of the outer low water channel. It has been postulated (Pethick, 2002) that the increase in tidal prism would cause the outer low water

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		Channel regulates discharge from the lower parts of the River Brue catchment area, and as such provides a steady inflow of water into the lower Parrett. Increases in the discharge through this channel would be likely to cause further localised erosion of the banks either side of the confluence, and of the area of salt marsh downstream. Realignment in this area could help mitigate the effects on salt marsh areas, by providing space for new areas of salt marsh to develop. Localised pressure on defences may also result from changes in the position of the low water channel – which are difficult to predict without further studies.	channel to swing clockwise, which would affect the coastline of Burnham to the north of this stretch. Climate change may also change the proportions of fresh and saltwater with an increase in rainfall potentially causing an increase in river flows and inundation of low level land as sea levels rise. At the northern end of this stretch, the Huntspill Channel regulates discharge from the lower parts of the River Brue catchment area, and as such provides a steady inflow of water into the lower Parrett. Increases in the discharge through this channel would be likely to cause further localised erosion of the banks either side of the confluence, and of the area of salt marsh downstream. Realignment in this area could help mitigate the effects on salt marsh areas, by providing space for new areas of salt marsh to develop. This could also, however, have implications for Combwich by potentially causing siltation of the channel in this area.
7d43 – Burnham-on-Sea and Berrow	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Along the Burnham-on-Sea frontage there is a recurved seawall and stepped revetment constructed in 1983, which is assumed to remain during this epoch aided by ongoing maintenance under this scenario. There is also a flood gate at Maddocks Slade. Along the northern part of this stretch, north of	Along Burnham-on-Sea frontage the recurved seawall constructed in 1983 is assumed to remain aided by ongoing maintenance under this scenario, although this will also be dependent upon the future position of the Parrett low-water channel, any changes in which could have significant implications for flood risk management	The defences at Burnham-on-Sea are likely to require upgrading during this epoch in order to continue to provide current levels of protection. This would involve construction of larger defences than presently exist, to address issues of increased sea levels and risk of undermining that may occur as a result of changes in the position of

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	Maddocks Slade, the coastal dune system is the primary defence – records suggest that this dune ridge has restricted overtopping along this stretch.	to the coastal defences to at Burnham-on-Sea. The coastal dune system along the northern part of this stretch is the primary defence and although the frontal dunes may erode the backing dune system should continue to provide a high standard of protection from flooding.	the Parrett Estuary low water channel. The coastal dune system is likely to fail in places, allowing inundation by the sea to occur. However, this is likely to only affect the frontal dunes along Berrow Marsh and a new shoreline position at the toe of the back dunes is predicted to form.
	At Burnham the defences will continue to fix the shoreline position and the coast along this stretch is likely to remain generally stable; although localised beach lowering may become an issue. Along the northern undefended part of this stretch of coastline, frontal dune erosion is likely to continue at rates between 0.4 and 2m/year. There is a risk that these frontal dunes could be breached during this period, which could impact on the Local Nature Reserve at Berrow; however, the high dunes behind will prevent further hinterland flooding.	At Burnham, the defences will continue to fix the shoreline position. The vulnerability of this coastline will also depend upon changes within the Parrett estuary, which could affect Stert Island and therefore increase exposure of this coastline. This frontage would also be affected by any change in the outer low water channel of the Parrett; it is possible that this could swing clockwise towards the coast as a result of tidal prism increases. Although the trend of dune erosion will continue along Berrow Dunes, the flood risk to the hinterland should remain low due to the higher dunes which lie behind.	At Burnham, the defences will continue to fix the shoreline position, but more substantial defences may be required in response to both sea level rise and any change in the outer low water channel of the Parrett. There cold also be a risk of outflanking due to erosion of the adjacent undefended dunes along the northern part of this stretch. The erosional trend will continue along the dune frontage; although flood risk should still remain low due to the high dunes behind.
7d44 – Berrow (north) to Brean (north)	**Policy Assessed = Hold the Line**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Along this stretch between Berrow and Brean the coastal dune system is the primary defence – records suggest that this dune ridge has restricted overtopping along this stretch due to its height. This natural defence would be supported during this epoch by implementation of dune and beach management, to promote a healthier dune system	The coastal dune system along this stretch is the primary defence and although the frontal dunes may erode the backing dune system should continue to provide a high standard of protection from flooding to the wider area of low-lying hinterland. However, where the dunes become narrower towards the northern end of this	The coastal dune system is likely to fail in places, particularly where the dunes are narrower towards the northern end of this stretch, allowing inundation by the sea to occur. The extent of this flooding will be limited by the secondary defences to be constructed landwards of the dune in the

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	to provide amore robust natural defence in this period, and to manage the roll back of the coast as sea levels rise. This is particularly important along the northern parts of this stretch where dunes are already narrow. This will require relocation of some of the more seaward properties along this stretch in order to allow dunes to develop and recover (by allowing sand currently constrained by development to re-enter the system to help stabilise the dunes). Back door flooding to this area is also controlled by flood embankments along the left bank of the River Axe, which would continue to be maintained under this scenario.	stretch, even despite measures in the short term to promote dune stability, dunes will not recover to the extent of those to the south at Berrow and so there is a risk of dune erosion resulting in increased risk of overtopping, flooding and even breaching of the dunes. Under this scenario, a set back defence embankment would be constructed landwards of the existing shoreline to reduce the risk of flooding to the wider area of the low-lying hinterland, although this would likely not provide protection to some more seaward properties and infrastructure located along this stretch. Back door flooding to this area is also controlled by flood embankments along the left bank of the River Axe; these would be maintained during this period in order to minimise this risk, and also in support of the 'Managed Realignment' policy along this stretch under this scenario.	preceding epochs. Back door flooding to this area is also controlled by flood embankments along the left bank of the River Axe; these would be maintained during this period in order to minimise this risk, and also in support of the 'Managed Realignment' policy along this stretch under this scenario.
	Along the section of undefended coastline, where protection against the risk of flooding is dependent upon the coastal dunes belt that varies in width along this length, and which is narrowest towards the northern end of this stretch. Frontal dune erosion is likely to continue at rates between 0.4 and 2m/year. There is a risk that these frontal dunes could be breached during this period; however, the high dunes behind the majority of this stretch will prevent wide-spread	Although the trend of dune erosion will continue along this stretch, the flood risk to the hinterland should remain low along much of this frontage due to the higher dunes which lie behind. Should the wide intertidal mudflats fronting these dunes erode as they have been recently, there would be predicted to be greater pressure on the dunes, as these mudflats provide protection of the coast through reducing incident wave energy. Where the dunes are narrowest, and despite	The erosional trend will continue along this dune frontage; although flood risk should still remain low due along the majority of this stretch due tot the high dunes behind much of it. Towards the northern end of this stretch, where the dunes are narrowest, the flood risk to the wider hinterland will be minimised by the secondary defences constructed in the medium term, as the dunes are allowed to roll back landwards towards this defence position as sea

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	hinterland flooding. Dune erosion could be reduced by introduction of dune and beach management during this epoch; particularly if aided by relocation of seaward properties to allow currently constrained sand supply to be re-activated such that it becomes available to help stabilise the dunes. Despite this, it is unlikely that the dunes would recover to the extent of the dunes towards the southern end of this stretch. Under this scenario it is also assumed that defences within the Axe Estuary will also remain during this period to reduce the risk of back door flooding to this area, as the defences along the Axe Estuary will be subject to a 'Hold the Line' policy in this epoch.	action in the short term to release sediment to the system and aid dune stabilisation, this trend of erosion would have more significant impacts, with an increasing risk of overtopping and breaching of the dunes which could cause wide-spread flooding of the low-lying hinterland. Construction of a secondary defence position during this epoch landwards of the dunes (at a location to be determined by more detailed studies) would therefore serve to minimise this flood risk extent. Protection of this stretch also relies on defences within the Axe Estuary, which would continue to be maintained to an adequate level during this epoch under this scenario.	levels rise. Defence of this low-lying hinterland will also continue to depend, on continued maintenance of defences along the left bank of the Axe.
7d45 – Brean (north) to Brean Down	**Policy Assessed = Hold the Line**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Along this stretch between the northern end of Brean and Brean Down there is a range of defences including a wave return wall, masonry walls, rock armour and gabion baskets. Some of these, such as the gabion baskets are at risk of failure during this period and so will require maintenance during this epoch whilst measures to implement the medium term policy of 'Managed Realignment' are investigated. Back door flooding to this area is also controlled by flood embankments along the left bank of the	The range of defences along this stretch are all at risk of failing as a result of undermining during this period. Under this scenario, these defences would not be renewed in their existing alignment, but rather re-built inland in a realigned position whilst the existing defences would be allowed to deteriorate and fail during this period. Back door flooding to this area is also controlled by flood embankments along the left bank of the River Axe; these would be maintained during this period in order to minimise this risk, and also in	The existing defences would fail completely during this epoch and flooding of the low-lying hinterland would occur back to the realigned defence position established in the medium term; this realigned defence position being maintained during this epoch. Back door flooding to this area is also controlled by flood embankments along the left bank of the River Axe; these would be maintained during this period in order to minimise this risk, and also in support of the 'Managed Realignment' policy along

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	River Axe, which would continue to be maintained under this scenario.	support of the 'Managed Realignment' policy along this stretch under this scenario.	this stretch under this scenario.
	Between Brean and Brean Down the current defences will continue to fix the shoreline position and reduce the risk of hinterland flooding during this epoch. Under this scenario it is also assumed that defences within the Axe Estuary will also remain during this period to reduce the risk of back door flooding to this area, as the defences along the Axe Estuary will be subject to a 'Hold the Line' policy in this epoch.	Should the wide intertidal mudflats fronting this stretch erode as they have been recently, there would be predicted to be greater pressure on defences as these mudflats provide protection of the coast through reducing incident wave energy. This increased exposure of defences, combined with the defences reaching the end of their effective life towards the end of this epoch and rising sea levels, defences would be constructed in a realigned position during this epoch in order to provide a sustainable and adequate level of protection against the risk of flooding to the wider low-lying hinterland area. Under this scenario the existing defences would be allowed to deteriorate and fail due to lack of maintenance, however they will continue to have a residual defence effect for some time to come after this maintenance ends. Protection of this stretch also relies on defences within the Axe Estuary, which would continue to be maintained to an adequate level during this epoch under this scenario.	The residual effect of the existing defences would reduce eventually be removed during this epoch, and so flood risk along this stretch will be minimised by the secondary defences constructed along this stretch in the preceding epoch. The shoreline would then be allowed to evolve and adapt to rising sea levels naturally, rolling back towards the realigned defence position. Defence of this low-lying hinterland will also continue to depend, on continued maintenance of defences along the left bank of the Axe.
7d46 – Brean Down (south side)	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section of hard rock cliffed headland is undefended.	No defences.	No defences.
	This section comprises the southern half of the	Limited change is predicted for the headland at	There will be limited change at Brean Down, due

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	resistant Carboniferous limestone headland of Brean Down, which will experience negligible change during this epoch.	Brean Down; less than 5m by the end of the epoch.	to the resistant nature of this headland; less than a total of 10m by the end of the epoch.
POLICY SCENARIO AREA: BREAN DOWN TO ANCHOR HEAD (WESTON BAY)			
7e01 – Brean Down (north side) to Axe Estuary (west)	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**	**Policy Assessed = No Active Intervention**
	This section of hard rock cliffed headland is undefended.	No defences.	No defences.
	This section comprises the northern half of the resistant Carboniferous limestone headland of Brean Down which is predicted to erode at rates similar to historically, with negligible change expected during this period.	Cliff erosion at Brean Down is predicted to continue occurring at a very slow rate with infrequent events and therefore by the end of this epoch total erosion is predicted to be less than 5m.	Cliff erosion along Brean Down is predicted to continue occurring at a very slow rate with infrequent events and therefore by the end of this epoch total erosion is predicted to be less than 10m.
7e02 – Axe Estuary west bank (mouth to near Diamond Farm)	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Embankments constraining River Axe estuary and protecting low-lying hinterland from flooding are located throughout this section. These will remain during this epoch, aided by ongoing maintenance.	Embankments constraining River Axe estuary along the length of this section, which protect the low-lying hinterland from flooding, will be maintained and eventually upgraded towards the end of this epoch. The management of this section will be heavily influenced by the management on the open coast between Brean and Brean Down. Under this scenario, the policy on the open coast is to undertake 'Managed Realignment' during this epoch, and as such, realignment could occur back to the embankments along this side of the Axe Estuary. If this were the case, then the upgraded	Embankments constraining River Axe estuary along this section, having been upgraded in the medium term, will be maintained during this epoch, in support of the ongoing 'Managed Realignment' policy on the open coast between Brean and Brean Down under this scenario.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		defences along the Axe Estuary constructed in this period would need to be much larger and likely armoured (in the longer term) to provide an adequate set back defence position.	
	This frontage is controlled at its north-western end by the resistant Carboniferous headland at Brean Down, and forms the western bank of the estuary of the River Axe, which discharges into the southern end of Weston bay. The continued maintenance of the embankments along this stretch that constrain the estuary of the River Axe will prevent any significant change in estuary morphology or processes during this epoch.	The headland of Brean Down will remain a control on the north-western end of this section of the Axe Estuary. The embankments constraining the River Axe will prevent any significant change in estuary morphology or processes. However acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the Axe, increasing the potential for sediment reworking both by water and currents. Climate change may also result in an increase in the freshwater component of the estuary, increasing flood risk. Construction of new, larger embankments in this epoch along the western side of the Axe Estuary would both reduce this risk, and be in support of the 'Managed Realignment' on the open coast between Brean and Brean Down, will ensure that the River Axe continues to discharge into the southern part of Weston Bay and not deflect southwards to discharge to the south of Brean Down.	The headland of Brean Down will remain a control on the north-western end of this section of the Axe Estuary. The embankments constraining the River Axe will prevent any significant change in estuary morphology or processes. However acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the Axe, increasing the potential for sediment reworking both by water and currents. Climate change may also result in an increase in the freshwater component of the estuary, increasing flood risk. Continued maintenance of the defences along this western part of the Axe Estuary would reduce this flood risk and be in support of the 'Managed Realignment' on the open coast between Brean and Brean Down, ensuring that the River Axe continues to discharge into the southern part of Weston Bay during this epoch, and not deflect southwards to discharge to the south of Brean Down.
7e03 – Axe Estuary east bank (near Diamond	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	Embankments along this eastern side of the Axe Estuary both constrain the estuary and protect	The embankments that constrain the Axe Estuary and protect low-lying hinterland against the risk	The embankments along this eastern side of the

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
Farm to mouth)	the low-lying hinterland from the risk of flooding. These defences will remain during this epoch, aided by ongoing maintenance.	of flooding along this stretch of the outer eastern side of the estuary will be maintained and eventually upgraded towards the end of this epoch.	Axe Estuary will be maintained during this epoch.
	The embankments constraining the River Axe along this stretch will prevent any significant change in estuary morphology or processes.	The embankments constraining the eastern side of the Axe Estuary in this area will prevent any significant change in shoreline morphology or processes. However acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the Axe, increasing the potential for sediment reworking both by water and currents. Climate change may also result in an increase in the freshwater component of the estuary, increasing flood risk. As such, the upgraded defences are likely to need to be much larger than the existing defences in order to provide adequate levels of protection in the long term.	The embankments constraining this eastern side of Axe Estuary will prevent any significant change in estuary morphology or processes. However acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the Axe, increasing the potential for sediment reworking both by water and currents. Climate change may also result in an increase in the freshwater component of the estuary, increasing flood risk.
7e04 – Axe Estuary mouth to Uphill	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	This stretch along the southern part of Weston Bay extends between the mouth of the River Axe and Uphill. Along this stretch, there is a seawall extending northwards from the River Axe to Uphill. This is predicted to begin to fail towards the end of this period and so will require upgrading during this epoch. This would involve constructing a larger defence such that it will be better able to provide	The seawall at Uphill will require ongoing maintenance during this epoch, having been r-built during the short term, in order to continue to provide the required levels of protection.	The seawall at Uphill will be maintained during this epoch.

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	an adequate level of protection in the long term as sea levels rise. This would also be in support of the policy along the outer eastern side of the estuary to 'Hold the Line' to reduce flood risk to Uphill.		
	Defences along this stretch will remain and be improved during this period, and so continue to minimise flooding risk along this section. Low rates of erosion of the resistant headlands that bound Weston Bay (Brean Down and Anchor Head) and the lack of incoming sediment from other sources mean that there is little fresh sediment input to feed the beach fronting the defences along this stretch.	Shoreline retreat and foreshore lowering along this stretch, where defences prevent natural retreat, is predicted to continue during this epoch along this stretch. This narrowing foreshore in front of the defences, along with retreat of the dunes to the north of Uphill, will make maintenance of the seawall defences along this stretch increasingly difficult.	Shoreline retreat and foreshore lowering along this stretch, where defences prevent natural retreat, is predicted to continue during this epoch. The erosion of the dunes to the north of Uphill in this epoch will make maintenance of the defences along this stretch increasingly difficult.
7e05 – Uphill to Weston-super-Mare (south)	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**	**Policy Assessed = Managed Realignment**
	Along this stretch between Uphill and Weston-super-Mare, there is a short stretch of undefended dunes that provide a natural defence against flood risk. These would be subject to ongoing monitoring, and, if necessary, dune and beach management activity to help support this natural defence function could occur under this scenario.	The dunes along this section will continue to provide a natural defence, but the effectiveness of these may begin to diminish as sea levels rise. These would be subject to ongoing monitoring, and, if necessary, dune and beach management activity to help support this natural defence function could occur under this scenario.	The dunes along this section are likely to be increasingly ineffective as a natural form of defence as sea level rise accelerates, even with dune and beach management activity occurring in the short and medium term, therefore a policy of 'Managed Realignment' in this epoch would see secondary defences built inland to provide additional flood protection to Uphill and Weston-super-Mare.
	Low rates of erosion of the resistant headlands that bound Weston Bay (Brean Down and Anchor Head) and the lack of incoming sediment from other sources mean that there is little fresh sediment input to feed the beaches and dune	Shoreline retreat is predicted to continue during this epoch along this stretch. The dune system along this stretch is also likely to suffer erosion, though the rate at which this occurs may be reduced by ongoing dune and beach management.	Shoreline retreat along this stretch is predicted to continue during this epoch. The dune system here is also likely to suffer further erosion, and the risk of flooding of the

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
	system along this stretch. The dunes along this stretch are predicted to remain in a similar position as at present in this epoch, aided by southerly drift of sediment from the northern part of the bay (although material is recycled back to the northern beaches annually), though a slight trend of erosion, and particularly foreshore narrowing and steepening, could begin to occur along this stretch towards 2025.	Risk of flooding of the low-lying hinterland (part of the Somerset Levels) is predicted to increase throughout this epoch, particularly with rising sea levels and increased storminess related to climate change. The extra pressure on the dunes that this will cause will make maintenance of the seawall defences in the adjacent section to the south increasingly problematic as well.	low-lying hinterland (part of the Somerset Levels) is predicted to increase throughout this epoch, particularly with rising sea levels and increased storminess related to climate change. Potential for a breach of the dunes is high during this epoch which would cause significant flooding. There is potential for the dune belt to be entirely lost in the centre of this frontage during this epoch. This would be predicted to result in the development of low cliffs due to erosion of the backing hinterland. Construction of secondary defences at the back of the dunes during this epoch would therefore serve to provide additional flood risk protection in this area. The erosion of the dunes in this epoch will also make maintenance of the defences in the adjacent section to the south increasingly difficult.
7e06 – Weston-super-Mare	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**	**Policy Assessed = Hold the Line**
	The main defence along this frontage is a seawall protecting the town of Weston-Super-Mare from flooding. These defences are in the process of being upgraded and will remain an influence upon coastal evolution throughout this epoch. This will continue to be supported by annual beach recycling activities, which retrieves sediment from the southern part of the bay and re-deposits it along this stretch.	The main defences along this frontage protect the town of Weston-Super-Mare from flooding and consist of a seawall. These defences would continue to be present and influence coastal evolution as a result of ongoing maintenance during this epoch. It may also become necessary to implement further shoreline defences, in the form of beach recharge and control structures, during this epoch to support the seawall as the fronting foreshore experiences narrowing and steepening	The main defences along this frontage protect the town of Weston-Super-Mare from flooding and consist of a seawall. These defences would continue to be present and influence coastal evolution as a result of ongoing maintenance during this epoch. If not occurred in the medium term, then it may become necessary to implement further shoreline defences, in the form of beach recharge and control structures, during this epoch to support the seawall as the fronting foreshore experiences

Possible Policy Unit & Number	Predicted Change for 'Policy Scenario A'		
	Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)
		in response to rising sea levels.	narrowing and steepening in response to rising sea levels.
	This frontage is controlled at its northern end by the resistant Carboniferous headland at Anchor Head, which, along with the headland at Brean Down, forms a closed sediment system. Erosion at Anchor Head, where natural rock is exposed (as much of the headland is armoured with seawalls) is predicted to be negligible during this epoch. Along the main frontage of Weston-super-Mare the defences will continue to hold the shoreline position and minimise the risk of localised flooding. These low rates of erosion of the headlands that bound Weston Bay to the north and south, and the lack of incoming sediment from other sources, means that there is little fresh sediment input to feed the beaches along this stretch. Recently there has been a trend of slight erosion, particularly foreshore lowering and steepening associated with the defences along this northern part of the bay. This is predicted to continue during this epoch.	Foreshore lowering along this section, where defences prevent natural retreat, is predicted to continue during this epoch. The defences along this frontage will maintain the shoreline. These defences are predicted to become increasingly vulnerable as the foreshore lowers. The presence of the defences will also limit the sediment available to feed the dunes to the south towards Uphill, and therefore this may add to the erosion here. Due to this increasing vulnerability, beach recharge, likely supported by shoreline control structures (i.e. groynes) are likely to be required during this epoch to support the seawall. Any such measures could, however, adversely impact the dunes and defences in the southern part of the bay, and this would need to be considered fully as part of any implementation.	Foreshore lowering along this stretch, where defences prevent natural retreat, is predicted to continue during this epoch. The defences along this frontage will maintain the shoreline. These defences are predicted to become increasingly vulnerable due to foreshore lowering and potentially outflanking caused by erosion of the dunes to the south of the defences, which itself is likely to be affected by the continued defences along this stretch which will limit the sediment available to feed the dunes and so put extra pressure upon the dunes to the south. Due to this increasing vulnerability, if not implemented in the medium term, then beach recharge, likely supported by shoreline control structures (i.e. groynes) is very likely to be required during this epoch to support the seawall. Any such measures would, however, need to consider and seek to minimise adverse impacts to the dunes and defences in the southern part of the bay

'POLICY SCENARIO B' ASSESSMENT SUMMARY

This section provides a summary of the impacts of alternative policy options and scenarios for Policy Scenario B, which is based upon an assumption that a primary driver for future coastal management is a return to a more naturally functioning coast in as many areas as feasibly possible.

The impacts discussed are based upon changes from the impacts assessed for Policy Scenario A.

(a) Lundy

No change from policy scenario A.

(b) Hartland Point to Westward Ho!

No change from policy scenario A.

(c) Westward Ho! to Saunton Down

Possible Policy Unit and Number	Scenario A			Scenario B		
	0-20	20-50	50-100	0-20	20-50	50-100
7c06 – Westward Ho!	HTL	HTL	HTL	HTL	HTL	HTL
7c07 – Northam Burrows	MR	MR	MR	NAI	NAI	NAI
7c08 – Skern Salt Marsh to Appledore (west)	HTL	MR	MR	NAI	NAI	NAI
7c09 – Appledore	HTL	HTL	HTL	HTL	HTL	HTL
7c10 – Appledore to Northam	HTL	HTL	HTL	NAI	NAI	NAI
7c11 – Northam and Bideford	HTL	HTL	HTL	HTL	HTL	HTL
7c12 – Upper Torridge Estuary (east and west banks between Bideford and Weare Gifford)	HTL	HTL	HTL	NAI	NAI	NAI
7c13 – East-the-Water to Torridge Bridge (A39)	HTL	HTL	HTL	NAI	NAI	NAI
7c14 – Torridge Bridge (A39) to Instow	HTL	HTL	HTL	HTL	HTL	HTL
7c15 – Instow	HTL	HTL	HTL	HTL	HTL	HTL
7c16 – Instow to Yelland	HTL	HTL	MR	HTL	MR	MR
7c17 – Home Farm Marsh (Yelland to Fremington)	HTL	HTL	HTL	HTL	MR	MR
7c18 – Fremington to Penhill Point	NAI	NAI	NAI	NAI	NAI	NAI
7c19 – Penhill Point to A39 Road Bridge (Bickington)	HTL	HTL	HTL	MR	NAI	NAI
7c20 – Upper Taw Estuary (east and west banks between A39 to tidal limit near Bishops Tawton)	HTL	HTL	HTL	MR/NAI	MR/NAI	MR/NAI
7c21 – A39 Road Bridge to West Ashford (Barnstaple)	HTL	HTL	HTL	HTL	HTL	HTL
7c22 – West Ashford to Braunton (east bank of River Caen)	MR	MR	MR	MR	MR	MR
7c23 – Braunton to Horsey Island (west bank of River Caen)	MR	MR	MR	MR	MR	MR
7c24 – Horsey Island	MR	MR	MR	MR	MR	MR
7c25 – Horsey Island to Crow Point	MR	MR	MR	MR	MR	MR
7c26 – Crow Point & Crow Neck	MR	MR	MR	NAI	NAI	NAI
7c27 – Braunton Burrows	NAI	NAI	NAI	NAI	NAI	NAI
7c28 – Saunton Down	NAI	NAI	NAI	NAI	NAI	NAI

Under Scenario B, a number of areas within this section would experience 'No Active Intervention' or 'Managed Realignment', with the result that fewer areas would continue to be defended than envisaged under Scenario A.

A policy of 'No Active Intervention' along Northam Burrows would still result in the natural roll back and move towards swash alignment of the Pebble Ridge in the same way as under Scenario A. However, there would be no intervention to manage this process, nor to manage the associated increased risk of flooding to low-lying areas along Westward Ho! at the southern end of Northam Burrows, or to the former landfill site

located at the northern end of Northam Burrows. This increased flood risk would also occur as a result of 'No Active Intervention' along the Skern Salt Marsh, where defences would not be provided in a realigned position in the long term; although in this case the ability of the intertidal mudflats and salt marsh in this area would be unconstrained in its ability to adapt to rising sea levels under this scenario, where it would remain so be realigned defences under Scenario A.

'No Active Intervention' within the Torridge Estuary will see the deterioration and failure of defences. Where defences fail there will be an increased risk of flooding and this will also affect the estuary regime. However, the net impact of both this and sea level rise is unlikely to affect the net trend of slow infilling, although the rate of infilling may decrease in the long term. Future change is difficult to predict due to the uncertainty of estuary development following sea level rise and climate change, although the Torridge is extremely confined by its geology, with limited opportunity for salt marsh development, even if sufficient sediments were available. Therefore much of the estuary is likely to undergo limited change in the long term. A key influence on patterns of accretion and erosion will remain the natural meandering of the channel within the estuary. For much of this estuary the position of the channel is constrained by geology and in these areas little change is anticipated. Key areas of risk will be Torridge Bridge, Westleigh and the confluence with the River Yeo (Pethick, 2007).

Between Instow and Fremington, along the southern side of the Taw Estuary, continued defence would be provided, all-be-it in a realigned position; this would occur earlier than envisaged under Scenario A for the stretch between Instow and Yelland, but would be a variation on the 'Hold the Line' policy for Home Farm Marsh stretch assessed under Scenario A.

Along the Penhill Point to Bickington stretch, implementation of 'Managed Realignment' would involve breaching existing defences and allowing the estuary to reclaim land back to the backing higher ground in this area. This is unlikely to increase flood risk to people and property, but would allow the intertidal mudflats and salt marsh to adapt to erosion pressures predicted to be caused in this area as sea levels rise and the estuary attempts to widen.

Along the upper Taw Estuary, there would be a general policy of 'No Active Intervention' along much of this stretch, with the estuary being allowed to adapt naturally to rising sea levels. This would provide additional flood storage in the upper estuary as well as space for salt marsh to transgress in to. In places along this stretch, in particular along parts of the east bank, 'Managed Realignment' would occur to support this natural adaptation of the estuary, whilst ensuring flood risk to the railway line continues to be reduced.

Along Crow Neck and Crow Point, a policy of 'No Active Intervention' under this scenario would prevent any intervention to manage the natural roll back of the spit in to the estuary, or to provide a secondary defence line to support any natural defence function this feature provides to the inner estuary; although it is currently uncertain how much (if any) defence function is currently provided by this feature to the inner estuary, and therefore, as in Scenario A, further study in the short term is required to determine this importance (or otherwise).

For all these areas, the move to fewer defences within the Taw/Torridge Estuary under Scenario B, compared to Scenario A, includes a significant degree of uncertainty over the impacts of increasing the floodable areas of the estuary, particularly in the outer estuary area, on the wider sediment transport and water circulation patterns. These impacts would need to be investigated in more detail early in the first epoch prior to implementing any such policies.

(d) Saunton Down to Baggy Point (Croyde Bay)

Possible Policy Unit and Number	Scenario A			Scenario B		
	0-20	20-50	50-100	0-20	20-50	50-100
7c29 – Croyde Sands	NAI	NAI	NAI	NAI	NAI	NAI
7c30 – Middleborough Hill (Croyde Bay north)	HTL	NAI	NAI	NAI	NAI	NAI
7c31 – Middleborough Hill (Croyde Bay north) to Baggy Point	NAI	NAI	NAI	NAI	NAI	NAI

The difference between Scenario A and Scenario B is that there would be no (limited) maintenance of the short length of defence along the Middleborough Hill part of Croyde Bay in the short term. Without any

maintenance, there is an increased risk of the seawall failing towards the end of the short term period, rather than during the medium period as envisaged in Scenario A.

As such, due to the earlier failure of defences under Scenario B compared to Scenario A, measures would need to be developed and implemented more quickly than in Scenario A to adapt the cliff top area (i.e. plan and implement relocation of people, property and infrastructure in the short term rather than the medium term).

(e) Baggy Point to Morte Point (Woolacombe Bay)

Possible Policy Unit and Number	Scenario A			Scenario B		
	0-20	20-50	50-100	0-20	20-50	50-100
7c32 – Baggy Point to Napps Cliff (Putsborough)	NAI	NAI	NAI	NAI	NAI	NAI
7c33 – Putsborough Sands and Vention	HTL	HTL	NAI	NAI	NAI	NAI
7c34 – Vention to Woolacombe Beach (Woolacombe Sands)	NAI	NAI	NAI	NAI	NAI	NAI
7c35 – Woolacombe Beach	NAI	NAI	NAI	NAI	NAI	NAI
7c36 – Woolacombe to Morte Point	NAI	NAI	NAI	NAI	NAI	NAI

Unlike Scenario A, which would support private funds to improve defences in the short term and then maintain them in the medium (and into the long-term) so long as they are linear (seawall/revetment type) defences; Scenario B would not permit any maintenance or improvement of defences along the Putsborough/Vention frontage at any time.

As such, under this scenario, the various seawalls and revetments along this stretch would deteriorate and fail during the short and medium term, causing loss of properties and infrastructure (i.e. car park) as a result. A naturally functioning coast and dune system would then exist in the long term, which will be subject to erosion at similar rates to the dunes along Woolacombe Sands, largely as a result of storm wave events.

(f) Morte Point to Foreland Point

Possible Policy Unit and Number	Scenario A			Scenario B		
	0-20	20-50	50-100	0-20	20-50	50-100
7d01 – Morte Point to Lee (west)	NAI	NAI	NAI	NAI	NAI	NAI
7d02 – Lee	HTL	HTL	HTL	HTL	NAI	NAI
7d03 – Lee (east) to Ilfracombe (west)	NAI	NAI	NAI	NAI	NAI	NAI
7d04 – Ilfracombe	HTL	HTL	HTL	HTL	HTL	HTL
7d05 – Ilfracombe (east – Larkstone Beach) to Hele Beach (west)	NAI	NAI	NAI	NAI	NAI	NAI
7d06 – Hele Beach	HTL	HTL	HTL	NAI	NAI	NAI
7d07 – Hele Beach (east) to Watermouth Slipway	NAI	NAI	NAI	NAI	NAI	NAI
7d08 – Watermouth Slipway	HTL	HTL	HTL	NAI	NAI	NAI
7d09 – Watermouth Slipway to Combe Martin	NAI	NAI	NAI	NAI	NAI	NAI
7d10 – Combe Martin	HTL	HTL	HTL	HTL	HTL	HTL
7d11 – Combe Martin to Lynmouth	NAI	NAI	NAI	NAI	NAI	NAI
7d12 – Lynmouth	HTL	HTL	HTL	HTL	HTL	HTL
7d13 – Lynmouth to Foreland Point	NAI	NAI	NAI	NAI	NAI	NAI

The only differences between Scenario A and Scenario B is the move to 'No Active Intervention' at areas currently defended at Lee, Hele and Watermouth Slipway, based on the assumption that it is very unlikely that continued defence provision in these areas would be likely to attract public funds to undertake works in the future, which would involve the need to replace existing defences with much larger ones such that they are better able to provide protection in the long term as sea levels rise and wave exposure increases.

Under Scenario B, there would be a need to relocate people and property to higher ground a short way in land so that it is out of the area of flood risk. This is unlikely to increase erosion risk in these areas as the geology is hard and resistant to erosion. This change in policy in these areas may also allow the small pocket beaches to roll back landwards onto low-lying land behind, although this will ultimately be constrained by the rising topography inland and so coastal squeeze would occur naturally.

(g) Foreland Point to Hurlstone Point

Possible Policy Unit and Number	Scenario A			Scenario B		
	0-20	20-50	50-100	0-20	20-50	50-100
7d14 – Foreland Point to Gore Point	NAI	NAI	NAI	NAI	NAI	NAI
7d15 – Gore Point to Porlock Weir	NAI	NAI	NAI	NAI	NAI	NAI
7d16 – Porlock Weir	HTL	HTL	HTL	HTL	NAI	NAI
7d17 – Porlock Weir to Hurlstone Point	MR	MR	MR	NAI	NAI	NAI

Under Scenario B, the existing defences would be maintained in the short term to prolong the life of these structures whilst measures to adapt to the transition in policy to 'No Active Intervention' are put in place. As it becomes increasingly difficult technically and economically to continue to maintain these defences to an adequate level, then maintenance would be withdrawn and the defences allowed to deteriorate and fail during the medium term, such that a naturally functioning coast would exist in the long term, with sediment transport being enabled along the Porlock Bay frontage from west to east. This would support the stability of the shingle ridge further east.

The shingle ridge itself would also be allowed to continue to respond naturally to sea level rise and increased wave exposure. However, unlike in Scenario A, no secondary defences would be constructed and maintained to protect Bossington and Porlock, and as such, flood risk to these areas would increase over time as the ridge rolls back and becomes increasingly susceptible to overwashing and breaching.

(h) Hurlstone Point to Hinkley Point

Possible Policy Unit and Number	Scenario A			Scenario B		
	0-20	20-50	50-100	0-20	20-50	50-100
7d18 – Hurlstone Point to Minehead (west)	NAI	NAI	NAI	NAI	NAI	NAI
7d19 – Minehead	HTL	HTL	HTL	HTL	HTL	HTL
7d20 – The Warren (Minehead Golf Course)	HTL	MR	MR	HTL	MR	MR
7d21 – Dunster Beach	HTL	MR	MR	HTL	MR	MR
7d22 – Dunster Beach (east) to Ker Moor	MR	HTL	HTL	MR	HTL	HTL
7d23 – Blue Anchor	HTL	HTL	NAI	HTL	HTL	NAI
7d24 – Blue Anchor to Watchet	NAI	NAI	NAI	NAI	NAI	NAI
7d25 – Watchet to Doniford	HTL	HTL	HTL	HTL	HTL	HTL
7d26 – Doniford to St Audries Bay	HTL	HTL	HTL	NAI	NAI	NAI
7d27 – St Audries Bay	NAI	NAI	NAI	NAI	NAI	NAI
7d28 – St Audries Bay to Lilstock	NAI	NAI	NAI	NAI	NAI	NAI
7d29 – Lilstock	HTL	NAI	NAI	NAI	NAI	NAI
7d30 – Lilstock to Hinkley Point	NAI	NAI	NAI	NAI	NAI	NAI

The only differences between Scenario A and Scenario B, is for a policy of 'No Active Intervention' to be adopted for all three epochs between Doniford and St Audries Bay, and also at Lilstock.

Between Doniford and St Audries Bay, this would see the existing rock revetment along the Doniford Holiday Camp frontage be allowed to deteriorate and fail, likely towards the end of the short term period, with coastal erosion then resuming in this area at rates similar to adjacent undefended cliffs. This will provide some additional sediment to the shoreline that is likely to then be transported eastwards.

At Lilstock, unlike in Scenario A, there would be no maintenance of the embankment and revetment defences in the short term, and as such, failure of the defences is likely to occur earlier in the short term than envisaged in Scenario A. However, this merely means that adaptation measures to be developed under Scenario A, would need to be implemented earlier under this Scenario.

(i) Hinkley Point to Brean Down

Possible Policy Unit and Number	Scenario A			Scenario B		
	0-20	20-50	50-100	0-20	20-50	50-100
7d31 – Hinkley Point	HTL	HTL	HTL	HTL	HTL	HTL
7d32 – Hinkley Point to Stolford	HTL	HTL	MR	MR	MR	MR
7d33 – Stolford	HTL	HTL	MR	MR	MR	MR
7d34 – Stolford to Wall Common	MR	MR	MR	MR	MR	MR
7d35 – Steart Village	HTL	HTL	MR	HTL	NAI	NAI
7d36 – Steart Village (east) to Fenning Island	MR	MR	MR	HTL	NAI	NAI
7d37 – Fenning Island to Combwich	MR	MR	MR	HTL	NAI	NAI
7d38 – Combwich	HTL	HTL	HTL	HTL	HTL	HTL
7d39 – Combwich to Bridgwater (Parrett west)	HTL	HTL	HTL	MR	MR	MR
7d40 – Bridgwater (upper Parrett Estuary)	HTL	HTL	HTL	HTL	HTL	HTL
7d41 – Bridgwater to Dunball	HTL	HTL	HTL	HTL	HTL	HTL
7d42 – Dunball to River Brue	HTL	MR	MR	HTL	MR	MR
7d43 – Burnham-on-Sea and Berrow	HTL	HTL	HTL	HTL	HTL	HTL
7d44 – Berrow (north) to Brean (north)	HTL	MR	MR	MR	MR	MR
7d45 – Brean (north) to Brean Down	HTL	MR	MR	HTL	HTL	NAI
7d46 – Brean Down (south side)	NAI	NAI	NAI	NAI	NAI	NAI

Under Scenario B, policy of 'Managed Realignment' between Hinkley Point and Stolford would be implemented in the short term. As the existing defences need to be replaced with much larger structures in this epoch, rather than constructing new defences along the existing alignments (as is the case under Scenario A), new defences would be constructed in a more sustainable, realigned position. A continued policy of 'Managed Realignment' in the medium and long term would see the realigned defence positions being maintained, but also provide opportunity for further realignment of defences to occur if necessary, as sea level rise accelerates.

Along the eastern half of the Steart Peninsula, as the defences at Steart village towards Fenning Island reach the end of their effective life, they would not be replaced with new, larger structures. Instead, there would be no further maintenance of the defences as the policy moves to one of 'No Active Intervention'. This will have implications for people and property in this area, and measures to adapt to the change in policy would be required; these measures would need to be developed in the short term whilst defences are being maintained. In the medium to long term, the gravel ridge along this stretch will be able to adapt landwards as sea levels, and fronting areas of salt marsh would also be able to adapt in a similar way. The move towards a policy of 'No Active Intervention' between Fenning Island and Combwich in the medium to long term would be required to support the like policy on the open coast of Steart Peninsula. However, in doing so, there would be a need to consider the implications of this in developing and implementing any realignment in that area. In this regard, only Option 1 (the smallest proposed realignment extent) of the 4 options identified to date as part of the ongoing Steart Managed Realignment Project would be appropriate to implement under this scenario. In the long-term, under Scenario B, Steart Peninsula would become a natural area largely free from human intervention. As a result, and given that this area interacts with the wider outer estuary system, there is potential for significant impacts of 'No Active Intervention' in this area upon other parts of this system. For example, in the long term a new channel could be cut through the Steart Peninsula; this would significantly alter the hydrodynamic and sedimentary regime of the whole area. Also, natural realignment of this section could potentially impact upon the right bank of the River Parrett around Huntspill River, however, other studies have shown that this issue is best dealt with by managing the right bank of Parrett rather than management along this stretch (Atkins, April 2009).

Within the Parrett Estuary, as a result of the changes at Steart Peninsula under this scenario, and realignment along the right bank occurs in the medium to long term, it may not be economically viable to maintain defences in existing positions in the long term along the left bank between Combwich and Bridgwater. There is potential for realignment along all or parts of this stretch, and realignment in this area could provide increased flood storage and habitat creation potential. Studies (Environment Agency, 2009) suggest that realignment in this area could also potentially result in the inner estuary channel swinging in an anti-clockwise direction, which would increase the rate of erosion along Stert Island (by reducing protection against wave action), which in turn could increase the vulnerability of the beach at Burnham-on-Sea to erosion. However, this reduction in protection to Burnham-on-Sea provided by Stert Island is likely to naturally reduce as sea levels rise, and as such is not justifiable for continuing to defend the current alignment in this area of the Parrett Estuary.

Along the right bank of the Parrett Estuary, the potential impacts of 'No Active Intervention' along the Steart Peninsula would be addressed by realigning defences along this stretch. Whilst 'Managed Realignment' of the Pawlett Ham area has already been identified as a possible site for this (Environment Agency, 2009), the section along Pawlett Levels would also be realigned in the medium to long term under this scenario.

Whilst under this scenario the long-term situation would see a more naturally functioning outer estuary, there are many potential changes to the regime of the Parrett that this scenario could result in, and these potential changes and their interaction with the open coastline are not well understood; therefore the impacts of any changes within the estuary on this frontage are difficult to quantify and so require much greater study. Therefore, short term policies of 'Hold the Line' under this scenario would maintain defences whilst these issues are investigated fully.

In order to support the policies for the outer Parrett Estuary considered under Scenario B, the flood risk to the developed areas in the upper estuary such as Bridgwater, would need to be minimised by ongoing maintenance and improvement of defences, and ultimately, construction of a surge barrier.

Unlike Scenario A, the policy of 'Managed Realignment' along the Berrow to Brean frontage is considered to occur in the short term under Scenario B. This would involve investigating and implementing realignment in the short term (rather than implementing realignment in the medium term under Scenario A), and as such, measures to facilitate the relocation of more seaward properties along this stretch would need to occur sooner than envisaged under Scenario A.

Between Brean and Brean Down, there would be a move towards 'No Active Intervention' in the long term; as the existing defence reaches the end of its effective life it will not be replaced. In the short to medium term under a 'Hold the Line' policy, the defence would be maintained, and in preparation for the move to 'No Active Intervention', a set-back defence will need to be constructed during the medium term to provide protection against the risk of flooding to the wider Somerset Levels that would otherwise occur as a result of this long-term policy. As a result of this policy, and the same move to 'No Active Intervention' on the west bank of the Axe Estuary in the long-term, there is potential for the Axe Estuary to alter course and discharge to the south of Brean Down. This in turn could have implications for sediment circulation within this part of Bridgwater Bay, although further detailed study would be required to determine the nature and extent of any such impacts.

(j) Brean Down to Anchor Head (Weston Bay)

Possible Policy Unit and Number	Scenario A			Scenario B		
	0-20	20-50	50-100	0-20	20-50	50-100
7e01 – Brean Down (north side) to Axe Estuary (west)	NAI	NAI	NAI	NAI	NAI	NAI
7e02 – Axe Estuary west bank (mouth to near Diamond Farm)	HTL	HTL	HTL	HTL	HTL	NAI
7e03 – Axe Estuary east bank (near Diamond Farm to Uphill)	HTL	HTL	HTL	HTL	MR	HTL
7e04 – Axe Estuary east bank (Uphill to mouth)	HTL	HTL	HTL	HTL	MR	HTL
7e05 – Uphill to Weston-super-Mare (south)	MR	MR	MR	NAI	NAI	MR
7e06 – Weston-super-Mare	HTL	HTL	HTL	HTL	HTL	HTL

Unlike Scenario A, the seawall defences along the southern part of Weston Bay, between the mouth of the River axe and the southern end of the Weston-super-Mare defences, would only by maintained in the short term to prolong their effective life rather than replaced (as envisaged in Scenario A). This would then allow measures to be developed and implemented in the medium term for new defences to be built in a position such that flood risk to Uphill continues to be reduced, but in a more sustainable position.

Along the east bank of the Axe Estuary, there is potential for realignment of defences in this area to provide flood defences in more sustainable locations, as well as providing additional flood storage capacity to benefit other parts of the estuary/river system. Undertaking realignment of defences within this part of the estuary would result in inundation of parts of the low-lying hinterland. The realigned defence positions would be maintained in the long-term under a 'Hold the Line' policy.

Under Scenario B, defences along the west bank of the Axe Estuary would be maintained in the short to medium term, but would not be maintained in the long term once the defences on the adjacent open coast between Brean and Brean Down are no longer maintained. Here, the policy would therefore become one of 'No Active Intervention' in the long term in line with the adjacent open coast policy.

As a result of these polices, the estuary channel would likely realign to a more natural position as a result of the realigned embankments on the east bank in the medium to long term reducing the constraint currently imposed on the estuary in this area. In the long term however, once the west bank defences become unmaintained, and the adjacent open coast is allowed to erode back towards the estuary channel, the channel could potentially alter course and discharge into the northern end of Bridgwater Bay on the south side of Brean Down. The future channel configuration will influence future patterns of erosion, sediment transport and deposition within the intertidal area. It is not, however, possible to predict how the channel configuration may change in the future. Acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the estuary, increasing the potential for sediment reworking both by waves and currents.

Along the stretch between Uphill and Weston-super-Mare, there is a short stretch of undefended dunes that provide a natural defence against flood risk. These would be subject to ongoing monitoring, but no actual management intervention is envisaged under this scenario. These dunes are likely to be increasingly ineffective as a natural form of defence as sea level rise accelerates in the long term, therefore a policy of 'Managed Realignment' in this epoch would see secondary defences built inland to provide additional flood protection to Uphill and Weston-super-Mare.

'POLICY SCENARIO C' ASSESSMENT SUMMARY

This section provides a summary of the impacts of alternative policy options and scenarios for Policy Scenario C, which is based upon an assumption that a primary driver for future coastal management is to continue to provide defence against flooding and erosion to property and infrastructure in as many areas as feasibly possible.

The impacts discussed are based upon changes from the impacts assessed for Policy Scenario A.

(a) Lundy

No change from policy scenario A.

(b) Hartland Point to Westward Ho!

Possible Policy Unit and Number	Scenario A			Scenario C		
	0-20	20-50	50-100	0-20	20-50	50-100
7c03 – Hartland Point to Clovelly	NAI	NAI	NAI	NAI	NAI	NAI
7c04 – Clovelly	HTL	HTL	HTL	HTL	HTL	HTL
7c05 – Clovelly to Rock Nose	NAI	NAI	NAI	NAI (HTL at Bucks Mills)	NAI (HTL at Bucks Mills)	NAI (HTL at Bucks Mills)

Under this Scenario C, much of the impacts are already discussed within the Scenario A assessment. The only change from Scenario A that is assessed here is the assumption that continued defence of Bucks Mills within unit 7c05 can occur.

There are small localised defences at Bucks Mills comprising gabions and seawall. These are shore parallel structures that do not significantly impede sediment transport from west to east. A the adjacent undefended cliffs are not predicted to experience large scale recession over the next 100 years, if the defences are retained along more or less existing alignments then the current situation is not likely to alter very much in the long term. Sea level rise may result in some coastal squeeze in front of the defences, although natural narrowing of the shoreline fronting the undefended cliffs will be on a similar scale.

(c) Westward Ho! to Saunton Down

Possible Policy Unit and Number	Scenario A			Scenario C		
	0-20	20-50	50-100	0-20	20-50	50-100
7c06 – Westward Ho!	HTL	HTL	HTL	HTL	HTL	HTL
7c07 – Northam Burrows	MR	MR	MR	HTL	HTL	HTL
7c08 – Skern Salt Marsh to Appledore (west)	HTL	MR	MR	HTL	HTL	HTL
7c09 – Appledore	HTL	HTL	HTL	HTL	HTL	HTL
7c10 – Appledore to Northam	HTL	HTL	HTL	HTL	HTL	HTL
7c11 – Northam and Bideford	HTL	HTL	HTL	HTL	HTL	HTL
7c12 – Upper Torridge Estuary (east and west banks between Bideford and Weare Gifford)	HTL	HTL	HTL	HTL	HTL	HTL
7c13 – East-the-Water to Torridge Bridge (A39)	HTL	HTL	HTL	HTL	HTL	HTL
7c14 – Torridge Bridge (A39) to Instow	HTL	HTL	HTL	HTL	HTL	HTL
7c15 – Instow	HTL	HTL	HTL	HTL	HTL	HTL
7c16 – Instow to Yelland	HTL	HTL	MR	HTL	HTL	HTL
7c17 – Home Farm Marsh (Yelland to Fremington)	HTL	HTL	HTL	HTL	HTL	HTL
7c18 – Fremington to Penhill Point	NAI	NAI	NAI	NAI	NAI	NAI
7c19 – Penhill Point to A39 Road Bridge (Bickington)	HTL	HTL	HTL	HTL	HTL	HTL
7c20 – Upper Taw Estuary (east and west banks between A39 to tidal limit near Bishops Tawton)	HTL	HTL	HTL	HTL	HTL	HTL
7c21 – A39 Road Bridge to West Ashford (Barnstaple)	HTL	HTL	HTL	HTL	HTL	HTL
7c22 – West Ashford to Braunton (east bank of River Caen)	MR	MR	MR	MR	MR	MR
7c23 – Braunton to Horsey Island (west bank of River Caen)	MR	MR	MR	MR	MR	MR
7c24 – Horsey Island	MR	MR	MR	HTL	HTL	HTL
7c25 – Horsey Island to Crow Point	MR	MR	MR	HTL	HTL	HTL
7c26 – Crow Point & Crow Neck	MR	MR	MR	HTL	HTL	HTL
7c27 – Braunton Burrows	NAI	NAI	NAI	NAI	NAI	NAI
7c28 – Saunton Down	NAI	NAI	NAI	NAI	NAI	NAI

Unlike Scenario A, existing shoreline positions along more areas would be maintained under Scenario C; rather than being subject to managed realignment.

Along Northam Burrows, where there are presently few defences, there would need to be construction in the short term of significant defences. These would need to include a large seawall or revetment defence at the back of the Pebble Ridge to prevent the natural roll back of the ridge, supported by construction of groynes along the front of this linear defence to reduce the rate of sediment moved northwards along this shoreline towards the mouth of the estuary. Intervention in this way would be expensive and increasingly technically difficult to maintain in the long term as sea levels rise and wave exposure increases further. The seawall or revetment defence would need to be very large to provide adequate protection to the low-lying hinterland

against the risk of flooding, and it is much less economically viable than the options considered in Scenario A. Also, by constructing hard defences along this stretch, and constraining the ability of the ridge to adapt to rising sea levels, it will be very likely that the fronting pebble ridge will narrow and steepen, and could even disappear in places (due to lack of new sediment inputs).

A policy of 'Hold the Line' along the Skern Salt Marsh would involve maintenance and eventual re-building of the existing defences along this stretch such that they continue to provide adequate levels of protection against flood risk to the low-lying hinterland of Northam Burrows from this area. The retention of defences along the existing alignment would be likely to increase the risk of the fronting intertidal mudflats and salt marsh narrowing as sea levels rise; although this may be mitigate by increased sediment supply in the outer Taw/Torridge Estuary, though much uncertainty remains about this.

Continuing to 'Hold the Line' between Instow and Yelland, and between Horsey Island and Crow Point in the long term under this scenario will mean that the estuary along this stretch will remain constrained by defences. To achieve this policy, defences in these areas will need to be maintained and eventually re-built, likely towards the end of the first, or during the first half of the second epoch. These will need to be much larger structures such that they are able to provide adequate levels of flood protection in the long term as sea levels rise.

Along Crow Neck and Crow Point, in order to achieve the policy of 'Hold the Line' under this scenario, groynes would need to be constructed to encourage build-up and retention of beach along this stretch, such that a more robust, natural defence against breaching is provided. This would need to be supported by construction of a seawall or revetment defence at the back of the spit in order to prevent beach roll back and provide additional defence function. In the long term, however, the constraint that these defences would impose upon the ability of the spit to roll back and adapt as sea levels rise, could result in the beach here narrowing.

The mouth of the estuary will also attempt to widen in response to an increased tidal prism as sea levels rise. The policies to 'Hold the Line' along both Crow Neck and along the northern shore of Northam Burrows, will constrain the ability of the mouth to widen, and so this will put increased erosion pressure upon both of these areas, which will likely make continued defence provision in these areas technically more difficult to achieve.

As in Scenario A however, and affecting all of the areas within the Taw/Torridge Estuary, there is a high level of uncertainty with regard to how the estuary will evolve as sea level rise. In general the trend of slow infilling is expected to continue, with sediments from alongshore and the nearshore being moved into the estuary. The estuary will therefore remain a net sink for sediment and as demand for sediment increase; this could result in increased erosion of the open coast shorelines as more sediment is moved into the estuaries. It is, however, very difficult to quantify such impacts, without further study.

(d) Saunton Down to Baggy Point (Croyde Bay)

Possible Policy Unit and Number	Scenario A			Scenario C		
	0-20	20-50	50-100	0-20	20-50	50-100
7c29 – Croyde Sands	NAI	NAI	NAI	NAI	NAI	NAI
7c30 – Middleborough Hill (Croyde Bay north)	HTL	NAI	NAI	HTL	HTL	HTL
7c31 – Middleborough Hill (Croyde Bay north) to Baggy Point	NAI	NAI	NAI	NAI	NAI	NAI

In Scenario A, it is assumed that no public funds are available to maintain the existing short length of seawall defence located along the northern part of Croyde Bay. Scenario C tests the impact of maintaining defences in this area, should alternative (private) funds be available for this purpose.

If alternative funds are available, then the seawall would need to be re-built during the short term period and then maintained in the medium to long term. In order to ensure that the re-built defence was adequate to provide the required level or protection in the longer term, as sea levels rise and wave exposure increases, the re-built defences would need to be much larger than the present defence, which in turn will be much more costly to construct and maintain.

Continued defence in this area under Scenario C would be unlikely to have a significant impact upon coastal processes, as they are largely backed by hard, resistant rock that would erode only a small amount in any case.

The only impact would likely be to reduce slightly the amount of potential sediment supplied from cliff erosion to the wider Croyde Bay.

(e) Baggy Point to Morte Point (Woolacombe Bay)

Possible Policy Unit and Number	Scenario A			Scenario C		
	0-20	20-50	50-100	0-20	20-50	50-100
7c32 – Baggy Point to Napps Cliff (Putsborough)	NAI	NAI	NAI	NAI	NAI	NAI
7c33 – Putsborough Sands and Vention	HTL	HTL	NAI	HTL	HTL	HTL
7c34 – Vention to Woolacombe Beach (Woolacombe Sands)	NAI	NAI	NAI	NAI	NAI	NAI
7c35 – Woolacombe Beach	NAI	NAI	NAI	NAI	NAI	NAI
7c36 – Woolacombe to Morte Point	NAI	NAI	NAI	NAI	NAI	NAI

For the short and medium term, Scenario C is largely as per Scenario A, in that replacement of seawalls and revetments in the short term, if (private) funds are available, with like linear defences would be supported, with subsequent maintenance during the medium term.

Unlike Scenario A, however, Scenario C would permit further replacement and improvement of defences along the Putsborough/Vention frontage in the long term as required in order to address any outflanking risks caused by erosion of undefended cliffs and dunes adjacent to the defences.

In order to be effective however, any defence provision in the long term is likely to require armouring of the entire stretch of coast with very large and expensive seawall and revetment defences, which would need to be supported with shoreline control structures (i.e. 'T' head groynes) in order to retain sufficient fronting beach material such that the linear defences are not at risk of undermining. Introduction of shoreline control structures would also interrupt sediment transport processes in the wider Morte Bay, which in turn would be likely to adversely affect Woolacombe Sands to the north by reducing the amount of sand along this stretch and result in greater erosion pressure in this area.

(f) Morte Point to Foreland Point

No change from policy scenario A.

(g) Foreland Point to Hurlstone Point

Possible Policy Unit and Number	Scenario A			Scenario C		
	0-20	20-50	50-100	0-20	20-50	50-100
7d14 – Foreland Point to Gore Point	NAI	NAI	NAI	NAI	NAI	NAI
7d15 – Gore Point to Porlock Weir	NAI	NAI	NAI	HTL	HTL	HTL
7d16 – Porlock Weir	HTL	HTL	HTL	HTL	HTL	HTL
7d17 – Porlock Weir to Hurlstone Point	MR	MR	MR	MR	MR	MR

The only difference between Scenario A and Scenario C is that the section between Gore Point and Porlock Weir would be subject to a policy of 'Hold the Line' in order to allow the outflanking risk to Porlock Weir itself to be managed so long as the defences there are to be maintained under this scenario. In order to achieve this, beach management activities of recycling and re-profiling would occur to control the natural tendency of the ridge to roll back landwards as sea levels rise.

The ridge would need to be allowed to roll back however in order to retain sufficient beach sediment to manage, and as such, construction of hard defences at the southern end adjacent to Porlock Weir is likely to be required in the medium to long term in order to allow the risk of outflanking to be adequately managed. Any such defences here would need to be large in order to be adequate for dealing with the risks posed by higher sea levels, in line with equally large defences required at Porlock Weir, which would be constructed in the short term to replace the existing defences as they reach the end of their effective life.

(h) Hurlstone Point to Hinkley Point

Possible Policy Unit and Number	Scenario A			Scenario C		
	0-20	20-50	50-100	0-20	20-50	50-100
7d18 – Hurlstone Point to Minehead (west)	NAI	NAI	NAI	NAI	NAI	NAI
7d19 – Minehead	HTL	HTL	HTL	HTL	HTL	HTL
7d20 – The Warren (Minehead Golf Course)	HTL	MR	MR	HTL	HTL	HTL
7d21 – Dunster Beach	HTL	MR	MR	HTL	HTL	HTL
7d22 – Dunster Beach (east) to Ker Moor	MR	HTL	HTL	HTL	HTL	HTL
7d23 – Blue Anchor	HTL	HTL	NAI	HTL	HTL	HTL
7d24 – Blue Anchor to Watchet	NAI	NAI	NAI	NAI	NAI	NAI
7d25 – Watchet to Doniford	HTL	HTL	HTL	HTL	HTL	HTL
7d26 – Doniford to St Audries Bay	HTL	HTL	HTL	HTL	HTL	HTL
7d27 – St Audries Bay	NAI	NAI	NAI	NAI	NAI	NAI
7d28 – St Audries Bay to Lilstock	NAI	NAI	NAI	NAI	NAI	NAI
7d29 – Lilstock	HTL	NAI	NAI	HTL	NAI	NAI
7d30 – Lilstock to Hinkley Point	NAI	NAI	NAI	NAI	NAI	NAI

Under Scenario C, the existing shoreline position would be retained for all three epochs along the Blue Anchor Bay frontage between the Warren and Blue Anchor. In order to achieve this, the existing, largely natural shoreline, will need to become increasingly armoured over the medium to long-term in order to reduce the risk of wide-spread flooding over both the low-lying hinterland and also causing 'backdoor' flooding to Minehead from the Dunster Beach and the Warren frontage. It is envisaged that this would be achieved by constructing a large armoured embankment at the back of the cobble/shingle ridge along much of this shoreline (and armouring the existing embankment along the Warren) in order to prevent ridge roll back and reduce flood risk. This would likely be supported by construction of a more extensive groyne system along much of the frontage in order to help retain beach material in front of the revetment. However, as sea level rises and wave exposure increases, the beach along the frontage will narrow and likely become permanently submerged by the end of the third epoch.

The recently completed scheme along the low-lying part of Blue Anchor would be maintained in the first two epochs, and in the long-term, as these structures reach the end of their effective life, these are likely to need to be replaced with larger structures than presently exist in order that adequate levels of defence are provided in the future as sea levels rise and wave exposure increases. Along the eastern side of Blue Anchor, defences would need to be replaced in the short term as also required in Scenario A. However, unlike Scenario A, these defences would be maintained and upgraded further in the long-term (along with the adjacent defences), such that they continue to reduce the risk of erosion and outflanking in this area.

This scenario would be extremely costly in comparison to Scenario A, and would need to be justified largely on the flood risk reduction to Minehead in the west and key infrastructure within the extensive low-lying hinterland.

(i) Hinkley Point to Brean Down

Possible Policy Unit and Number	Scenario A			Scenario C		
	0-20	20-50	50-100	0-20	20-50	50-100
7d31 – Hinkley Point	HTL	HTL	HTL	HTL	HTL	HTL
7d32 – Hinkley Point to Stolford	HTL	HTL	MR	HTL	HTL	MR
7d33 – Stolford	HTL	HTL	MR	HTL	HTL	HTL
7d34 – Stolford to Wall Common	MR	MR	MR	MR	MR	MR
7d35 – Steart Village	HTL	HTL	MR	HTL	HTL	HTL
7d36 – Steart Village (east) to Fenning Island	MR	MR	MR	HTL	HTL	HTL
7d37 – Fenning Island to Combwich	MR	MR	MR	HTL	HTL	HTL
7d38 – Combwich	HTL	HTL	HTL	HTL	HTL	HTL
7d39 – Combwich to Bridgwater	HTL	HTL	HTL	HTL	HTL	HTL

(Parrett west)						
7d40 – Bridgwater (upper Parrett Estuary)	HTL	HTL	HTL	HTL	HTL	HTL
7d41 – Bridgwater to Dunball	HTL	HTL	HTL	HTL	HTL	HTL
7d42 – Dunball to River Brue	HTL	MR	MR	HTL	MR	MR
7d43 – Burnham-on-Sea and Berrow	HTL	HTL	HTL	HTL	HTL	HTL
7d44 – Berrow (north) to Brean (north)	HTL	MR	MR	HTL	HTL	HTL
7d45 – Brean (north) to Brean Down	HTL	MR	MR	HTL	HTL	HTL
7d46 – Brean Down (south side)	NAI	NAI	NAI	NAI	NAI	NAI

Scenario C assesses the impacts of continuing to 'Hold the Line' along more sections of this stretch of coast than envisaged under Scenario A. Along the Stolford and Steart Village frontages, defences would also need to be replaced in the short term and maintained into the long term (as under Scenario A). However, unlike Scenario A, as these defences reach the end of their effective life during the long term period, the defences would be replaced again along largely the existing alignment with much larger structures better able to cope with increased sea levels and greater wave exposure that would be experienced, particularly as fronting beaches and inter-tidal areas are eroded where they are unable to adapt due to the continued presence of the defences in these areas.

To 'Hold the Line' from Steart Village, around Fenning Island, up to Combwich within the Parrett Estuary under this Scenario C, the existing defences would also need to be re-built with much larger structures than presently exist, and maintained/improved in the medium and long term in line with defences at Steart Village. Retention of the seaward facing defences would result in the increased loss of fronting intertidal mudflats and salt marsh as sea levels rise. Within the Parrett Estuary however, retention of defences (rather than realignment as envisaged under Scenario A) reduces the potential for changes in this part of the estuary to impact adversely on the low-water channel; which could swing anti-clockwise if realignment occurs here, potentially impacting upon defences at Burnham-on-Sea.

Along the northern part of this stretch, between Berrow and Brean Down, in order to effectively 'Hold the Line' in the medium to long term, dune and beach management activities alone will not be sufficient, particularly where the dunes are already narrow and eroding (although there is some accretion of the foreshore – suggesting sediment possibly is eroding from the dunes to the foreshore); and especially as under this Scenario C the more seaward properties would remain and need to be protected (under Scenario A these seaward properties would be relocated to allow more sand to enter the system). As such, under this scenario the type of defence currently present between Brean and Brean Down, would need to be extended along the majority of the Berrow to Brean frontage in the medium term; likely at a similar time as the existing revetment defence between Brean and Brean Down reaches the end of its effective life and also needs to be upgraded. The defences built would need to be very large to cope with rising sea levels and increased wave exposure that would result from erosion and narrowing of the fronting inter-tidal flats; narrowing that would be exacerbated by the construction of hard defences along this stretch, which would also see the loss of beach in this area in the long term as it is prevented from adapting to rising sea levels.

However, it is unlikely that this policy would be economically viable, given that the seaward part of Brean has developed on top of high dunes that provide a natural defence of the Somerset Levels, and any potential increase in flood risk from erosion of these dunes in the long term, would be more sustainably managed by construction of a set back defence rather than much larger, very much more expensive, hard defences supported by shoreline control structures along the shoreline. Such shoreline control structures could also impact upon the clockwise sediment circulation cell that exists between the mouth of the Parrett Estuary and Brean Down, with a north to south sediment transport pathway along the shoreline.

(j) Brean Down to Anchor Head (Weston Bay)

Possible Policy Unit and Number	Scenario A			Scenario C		
	0-20	20-50	50-100	0-20	20-50	50-100
7e01 – Brean Down (north side) to Axe Estuary (west)	NAI	NAI	NAI	NAI	NAI	NAI
7e02 – Axe Estuary west bank	HTL	HTL	HTL	MR	MR	MR

(mouth to near Diamond Farm)						
7e03 – Axe Estuary east bank (near Diamond Farm to mouth)	HTL	HTL	HTL	MR	MR	MR
7e04 – Axe Estuary mouth to Uphill	HTL	HTL	HTL	HTL	HTL	HTL
7e05 – Uphill to Weston-super-Mare (south)	MR	MR	MR	HTL	HTL	HTL
7e06 – Weston-super-Mare	HTL	HTL	HTL	HTL	HTL	HTL

Under Scenario C, the policy within the Axe Estuary seeks to undertake 'Managed Realignment' to provide flood defences in more sustainable locations, as well as providing additional flood storage capacity to benefit other parts of the estuary/river system. Undertaking realignment of defences within the estuary would result in inundation of parts of the low-lying hinterland. The channel would then likely realign to a more natural position as a result of the realigned embankments reducing the constraint currently imposed on the estuary. The future channel configuration will influence future patterns of erosion, sediment transport and deposition within the intertidal area. It is not, however, possible to predict how the channel configuration may change in the future. Acceleration in the rate of sea level rise would increase water depths, tidal prism and current velocities in the estuary, increasing the potential for sediment reworking both by waves and currents.

Managed Realignment along the west bank of the Axe Estuary is only possible under this Scenario C due to supportive policies to 'Hold the Line' of existing defences along both the open coast between Brean and Brean Down, as well as to retain the position of the seawall that extends from the mouth of the Axe Estuary to Uphill within the southern part of Weston Bay.

Along the stretch of coast between Uphill and Weston-super-Mare, the currently undefended dunes would be subject to beach and dune management in the short to medium term to maintain the existing shoreline position. However, this will become increasingly difficult as sea levels rise and exposure to wave action increases. Therefore, in order to achieve a 'Hold the Line' policy under this scenario, construction of hard defences along the front of the dunes would be required in the medium to long term. Whilst this would reduce the risk of erosion and flooding to the hinterland, it would exacerbate narrowing and loss of beaches in this area.

Annex F.3 – Objectives Appraisal

Introduction

The following tables present the appraisal of 'Policy Scenario A, B and C' throughout the SMP area in terms of the impacts upon the various features and objectives that have been identified.

LUNDY ISLAND (Section A)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B and C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Lundy Island	• Landing Beach is the only sea approach to the island; an important asset to sustain the boat trips between North Devon and Lundy. • Access road between landing beach and the main village is the only route onto the island and is suffering erosion. • Properties apart from lighthouse at North West Point and Surf Point tend to be located further inland on higher land. Lighthouses are important to sustain navigation through the Bristol Channel.	• To avoid loss due to erosion of key community, recreational and amenity facilities. • To avoid loss due to erosion of commercial and economic assets and activities. • To minimise the impact of policies on marine operations and activities.	Lundy Island is a popular tourist destination and this helps generate and sustain the Islands economy. The majority of properties used by islanders and tourists are in the mid-southern region of the island and are not at risk from erosion. The cliff geology which is comprised of granite means there is unlikely to be a net loss of land from the majority of the island over the next 100 years. Although key infrastructure is at risk from erosion at Landing Beach due to local geology in this area being slate and shale which is more susceptible to erosion. Lundy Island is a plateau of rock 100m high, and Landing Beach is the only safe sea approach to the island, with the linking access road providing the only access to the village. Defences at Landing Beach and along the access road will therefore need consideration. The defences may locally conflict with the sensitive landscape of the Lundy Heritage Coast and may potentially impact on the Lundy SSSI, SAC, Marine Nature Reserve and archaeology. Rising sea levels and hard defences may also squeeze the beach. Although the beaches elsewhere on the lee of the island should be retained. The lighthouses maybe at risk from sea level rise in the next 100 years and this may have implications for navigation through the Bristol Channel, although modern technology may mitigate the significance of this impact. Internationally and nationally important habitats and species are supported on Lundy Island and the net area and distribution of these features may change in accordance with natural processes.	**Scenarios A, B & C:** Improvement of coastal defence assets will protect long-term access to the island. No loss to the access road due to erosion. No impact to properties or the lighthouse on Lundy Island.	**Scenarios A, B & C:** Improvement of coastal defence assets will see long-term access to the island protected. This will preserve the island's economy and community. . No loss to the access road due to erosion. No impact to properties or the lighthouse on Lundy Island.	**Scenarios A,B & C:** Improvement of coastal defence assets will see the access road, jetty and therefore access to the island protected. This will preserve the island's economy and community. The maintenance of defences is suggested at Landing Beaches only. Therefore cliff recession of up to 10m is possible in the south-east of the island, due to erosion of the soft slate cliffs. No impact to properties or the lighthouse on Lundy Island.
Lundy Beaches	• Where beaches are accessible they may be used by tourists.	• To avoid loss due to erosion of key community, recreational and amenity facilities.		**Scenarios A, B & C:** reduction in spatial extent of the island's pocket beaches due to erosion potentially effecting usage by tourists.	**Scenarios A, B & C:** reduction in spatial extent of the island's pocket beaches due to erosion potentially effecting usage by tourists.	**Scenarios A, B & C:** Loss of some pocket beaches around the island potentially effecting usage by tourists.
Lundy SAC	• The internationally designated habitats include: the reef, sandbanks which are slightly covered by sea water all the time, and submerged/ partially submerged sea caves. • Internationally designated species includes the grey seal.	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenarios A, B & C:** The maintenance of defences at Landing Beach will see a reduction in the volume of sediment released from the backing cliffs and a slight decrease in designated sandbank features. In other areas of the island, where there are no coastal defences, sandbank features will continue to show a slight increase in volume. Assuming an onshore-offshore sediment pathway. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenarios A, B & C:** The maintenance of defences at Landing Beach will see a reduction in the volume of sediment released from the backing cliffs and a marginal decrease in designated sandbank features. In other areas of the island, where there are no coastal defences, sandbank features will continue to show a slight increase in volume. Assuming an onshore-offshore sediment pathway If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenarios A, B & C:** The maintenance of defences at Landing Beach will see a reduction in the volume of sediment released from the backing cliffs and a decrease in designated sandbank features. In other areas of the island, where there are no coastal defences, sandbank features will continue to show a slight increase in volume. Assuming an onshore-offshore sediment pathway. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Lundy SSSI	• Designated for its important populations of breeding sea birds, notable plant species including the island's endemic Lundy Cabbage *Coincya wrightii* and grey seals.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the majority of Lundy SSSI features of designation. Including the Lundy Cabbage and breeding populations of sea birds. However a reduction in spatial extent of the island's pocket beaches due to erosion potentially affects usage by grey	**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the majority of Lundy SSSI features of designation. Including the Lundy Cabbage and breeding populations of sea birds. However a reduction in spatial extent of the island's pocket beaches due to erosion potentially	**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the majority of Lundy SSSI features of designation. Including the Lundy Cabbage and breeding populations of sea birds. However a reduction in spatial extent of the island's pocket beaches due to erosion potentially affects usage by grey seals.

LUNDY ISLAND (Section A)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B and C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
				seals.	affects usage by grey seals.	
Lundy Marine Nature Reserve	• Designated to protect the rich marine ecology and provide an opportunity for research. Including England's first No take Zone where no fishing is permitted.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the features of designation. However, lack of access to the Island may decrease awareness of the reserve and reduce research opportunities.	**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the features of designation. However, lack of access to the Island may decrease awareness of the reserve and reduce research opportunities.	**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the features of designation. However, lack of access to the Island may decrease awareness of the reserve and reduce research opportunities.
UNESCO Biosphere Reserve Lundy SSSI	• Lundy Island is within the Transition Zone of the UNESCO Biosphere Reserve. The Reserve raises awareness of nature conservation and sustainable development in the area surrounding its core Conservation Area at Braunton Burrows.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.** • **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the features of designation. The continued access to Lundy will promote awareness of the UNESCO Biospheres work.	**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the features of designation. The continued access to Lundy will promote awareness of the UNESCO Biospheres work.	**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the features of designation. The continued access to Lundy will promote awareness of the UNESCO Biospheres work.
Lundy Nature Conservation Zone & Lundy Woodland Trust Site Lundy Marine Nature Reserve	• Local non-statutory designations on the island.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the features of designation.	**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the features of designation.	**Scenarios A, B & C:** Neither the maintenance of defences at Landing Beach, or the NAI for the rest of the island will alter the features of designation.
Lundy Heritage Coast & Coastal Preservation Area UNESCO Biosphere Reserve	• The area is designated for its rich landscape. The Heritage Coast and Coastal Preservation Area aims to conserve the best qualities of the landscape by helping to guide and manage change.	• To avoid conflict with Heritage Coast Management Plan Objectives.		**Scenarios A, B & C:** changes in landscape due to increasing size of coastal defence assets.	**Scenarios A, B & C:** changes in landscape due to increasing size of coastal defence assets.	**Scenarios A, B & C:** changes in landscape due to increasing size of coastal defence assets.
Historic environment features Lundy Nature Conservation Zone & Lundy Woodland Trust Site	• Two protected ship wrecks on the lee side of the island. • 13 Scheduled Monuments, many within proximity to the cliffs, and may be affected by erosion.	• To avoid adverse impacts on scheduled and other nationally, regionally and locally important historic environment sites.		**Scenarios A, B & C:** No predicted losses to historic environment features. No predicted impact to the ship wrecks.	**Scenarios A, B & C:** No predicted losses to historic environment features. No predicted impact to the ship wrecks.	**Scenarios A, B & C:** there is the potential loss of 5 schedule monuments comprising of Marison Castle in lee of Landing Beach, 2 remains of Batterys and Brazen Ward in the North East of the island and a Battery in the central western area. No predicted impact to the ship wrecks.
Agricultural land	• The majority of the island is farmed and although this is low grade farmland (grade 4 and 5) there is no alternative for the island; due to the geology of the island it is unlikely erosion will affect net area.	• To avoid loss due to erosion to agricultural land (Grade 3 and above).		**Scenarios A, B & C:** No loss to Grade 3 and above agricultural land.	**Scenarios A, B & C:** No loss to Grade 3 and above agricultural land.	**Scenarios A, B & C:** No loss to Grade 3 and minimal loss to low grade agricultural land.

HARTLAND POINT TO WESTWARD HO! (Section B)				
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A,B and C**

				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
Infrastructure	• There is risk of occasional landslips removing up to 50m per event along parts of this section. Depending upon where such events occur, minor roads and car parks may be at risk. • The South West Coast path hugs the coastline and depending on the proximity of the path to the cliffs there may be a risk of losing sections to erosion however the path should be able to be redirected as necessary.	• To avoid loss of property due to erosion. • To avoid loss due to erosion of, and manage risk of flooding to, key community, recreational and amenity facilities.	This section of coast represents the southern extent of Barnstaple or Bideford Bay. The majority is cliffed, and at some points the cliffs are up to 150m high. To the west it is rural with farmland and woodland interspersed by a few small settlements at Clovelly, Buck's Mills and Peppercombe. In contrast the coastline east towards Westward Ho! is urban and low-lying and susceptible to flooding. South West Coast Path policy is to allow natural processes to occur and realign the path inland as necessary. This stretch of coast is largely undefended, where there are settlements fronting the sea at Clovelly, Buck's Mills and Westward Ho there are varying levels of sea defence. Sea level rise may result in steepening and narrowing of beaches which are valued by residents and tourists. This stretch of coast is nationally important for its geology and geomorphology. It is important to be able to observe these natural processes which should be enabled as cliff recession is generally slow due to the cliff geology. The coast has designated habitats of local, national and international importance; these habitats are likely to experience erosion; although this is unlikely to affect the integrity of the sites. The beach at Westward Ho! is subject to draw-down in front of the defences putting more pressure on this sea wall. Potentially, residents in coastal areas of low- lying ground or on cliffs susceptible to erosion may experience effects of sea level rise and increased frequency of flooding and erosion over the next 100 years and if the risk is perceived high enough people may choose to move inland, devaluing coastal properties at risk of flooding or erosion. Some properties may become blighted due to the risks.	**Scenarios A, B & C:** Risk of occasional landslips removing up to 50m per event along parts of this section of coast. These episodic events are difficult to predict. With the exception of defended areas at Clovelly (7c04), Sections of the South West Coastal Path will need to be relocated inland.	**Scenarios A, B & C:** Risk of occasional landslips removing up to 50m per event along parts of this section of coast. These episodic events are difficult to predict. With the exception of defended areas at Clovelly (7c04), Sections of the South West Coastal Path will need to be relocated inland.	**Scenarios A, B & C:** Loss of a beach access road at Peppercombe due to erosion. Risk of occasional landslips removing up to 50m per event along parts of this section of coast. These episodic events are difficult to predict. With the exception of defended areas at Clovelly (7c04), Sections of the South West Coastal Path will need to be relocated inland.
Critical infrastructure	• There are numerous substations and power lines along the coast that are at risk of flooding as sea levels rise which could leave wider areas than the coast without power	• To ensure critical services remain operational		**Scenarios A, B & C:** There are no power lines or substations along this section of coast that are at risk from erosion or flooding.	**Scenarios A, B & C:** There are no power lines or substations along this section of coast that are at risk from erosion or flooding.	**Scenarios A, B & C:** There are no power lines or substations along this section of coast that are at risk from erosion or flooding.
Clovelly	• A picturesque small settlement nestled within a small valley discharging to the sea, sustaining a healthy tourist industry. It has both residential and holiday properties, some properties are located right on the sea wall and may be at high risk from flooding. • Clovelly has a beach fronting defences in the form of breakwaters, concrete groynes and a seawall. These are unlikely to impact on wider coastal processes as Hartland Point itself forms the most dominant control. • Small historic harbour with fishing fleet	• To avoid loss of property due to erosion. • To avoid loss due to erosion of, and manage risk of flooding to, key community, recreational and amenity facilities. • To minimise the impact of policies on marine operations and activities.		**Scenarios A, B & C:** Maintenance of coastal defences to provide an adequate level of protection to properties and harbour infrastructure at risk from erosion and flooding. This will also ensure the fishing fleet remains operational and the tourist industry remains unaffected.	**Scenarios A, B & C:** Upgrading of coastal defences to provide an adequate level of protection to properties and harbour infrastructure at risk from erosion and flooding. This will also ensure the fishing fleet remains operational and the tourist industry remains unaffected.	**Scenarios A, B & C:** Maintenance of coastal defences to provide an adequate level of protection to commercial and residential properties and harbour infrastructure at risk from erosion and flooding. This will also ensure the fishing fleet remains operational and the tourist industry remains unaffected.
Buck's Mills	• A picturesque small settlement nestled within a small valley discharging to the sea. Properties are located on the cliff and may be at risk from erosion. • Buck's Mills is defended by stone gabions and a sea wall. These are unlikely to impact on wider coastal processes as Hartland Point itself forms the most dominant control. • There is access to the beach at Buck's Mills. • The beach and bay at Buck's Mills provide fishing opportunities for mackerel and bass amongst other species.	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To minimise the impact of policies on marine operations and activities.		**Scenarios A, B & C:** Deterioration of coastal defence assets. This will interrupt access but not completely limit it. Fishing opportunity will remain depending on stock. The valley is at risk from fluvial flooding rather than coastal flooding which will affect the majority of property in Buck's Mill in addition to tourist infrastructure.	**Scenarios A, B & C:** loss of the slipway, thereby reducing access to the sea and limiting fishing opportunities due to erosion. Potential loss of residential and commercial properties also due to erosion and flooding. The valley is at risk from fluvial flooding rather than coastal flooding which will affect the majority of property in Buck's Mill in addition to tourist infrastructure.	**Scenarios A, B & C:** loss of the slipway, thereby reducing access to the sea and limiting fishing opportunities due to erosion. Potential loss of residential and commercial properties also due to erosion and flooding. The valley is at risk from fluvial flooding rather than coastal flooding which will affect the majority of property in Buck's Mill in addition to tourist infrastructure
Tintagel-Marsland-Clovelly Coast SAC	• The internationally designated habitats include: European dry heath; old sessile oak woods with *Ilex* and *Blechum* in the British Isles; and vegetated sea cliffs of the Atlantic and Baltic Coasts.	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenarios A, B & C:** Potential small loss of heath and old sessile oak woods with *Ilex* and *Blechum* in the British Isle due to coastal erosion. Unlikely to affect the integrity of the Tintagel-Marsland-Clovelly Coast SAC.	**Scenarios A, B & C:** Potential small loss of heath and old sessile oak woods with *Ilex* and *Blechum* in the British Isle due to coastal erosion. Unlikely to affect the integrity of the Tintagel-Marsland-Clovelly Coast SAC.	**Scenarios A, B & C:** Potential small loss of heath and old sessile oak woods with *Ilex* and *Blechum* in the British Isle due to coastal erosion. Unlikely to affect the integrity of the Tintagel-Marsland-Clovelly Coast SAC.

HARTLAND POINT TO WESTWARD HO! (Section B)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A,B and C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
				If this policy is taken forward, then a Habitats Regulations assessment would be required.	If this policy is taken forward, then a Habitats Regulations assessment would be required.	If this policy is taken forward, then a Habitats Regulations assessment would be required.
Marsland to Clovelly SSSI (geological, geomorphological and biological interest)	• There are geological review sites at Hartland Point, and between Clovelly and Mouth Mill. These display unrivalled exposures of Upper carboniferous rocks through the Bude and Crackington formations. The coast is also important for its coastal geomorphology including features of hogs back cliffs and wave cut platforms. The cliffs also support a mosaic of habitats including grassland, heathland, and woodland/scrub. Other features include parkland, lichens, breeding birds and vascular plants.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.** • **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenarios A, B & C:** Continuation of natural processes is key to the integrity of the SSSI. NAI will continue to maintain these geological features. Potential changes in coastal geomorphology affecting designated features of the Marsland to Clovelly SSSI. Potential small loss of grassland, heathland and woodland/scrub due to coastal erosion affecting designated features of the Marsland to Clovelly SSSI.	**Scenarios A, B & C:** Continuation of natural processes is key to the integrity of the SSSI. NAI will continue to maintain these geological features. Potential changes in coastal geomorphology affecting designated features of the Marsland to Clovelly SSSI. Potential small loss of grassland, heathland and woodland/scrub due to coastal erosion affecting designated features of the Marsland to Clovelly SSSI.	**Scenarios A, B & C:** Continuation of natural processes is key to the integrity of the SSSI. NAI will continue to maintain these geological features. Potential changes in coastal geomorphology affecting designated features of the Marsland to Clovelly SSSI. Potential small loss of grassland, heathland and woodland/scrub due to coastal erosion affecting designated features of the Marsland to Clovelly SSSI.
Mermaids Pool to Rowdens Gut Geological SSSI	• This geological review site is the only complete sequence available through the Bideford formation and is of considerable importance for its palaeoenvironmental and palaeogeographical study.	• **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenarios A, B & C:** Continuation of natural processes is key to the integrity of the Mermaids Pool to Rowdens Gut SSSI. The NAI will continue to maintain these geological features. Small changes in coastal geomorphology affecting designated features of the Mermaids Pool to Rowdens Gut SSSI.	**Scenarios A, B & C:** Continuation of natural processes is key to the integrity of the Mermaids Pool to Rowdens Gut SSSI. The NAI will continue to maintain these geological features. Small changes in coastal geomorphology affecting designated features of the Mermaids Pool to Rowdens Gut SSSI.	**Scenarios A, B & C:** Continuation of natural processes is key to the integrity of the Mermaids Pool to Rowdens Gut SSSI. The NAI will continue to maintain these geological features. Small changes in coastal geomorphology affecting designated features of the Mermaids Pool to Rowdens Gut SSSI.
Hobby to Peppercombe SSSI	• Designated for its extensive oak *Quercus petraea* woodlands and sea cliffs (also a SAC feature) breeding birds and lichens. The cliffs are composed of much folded carboniferous sandstones and shales of the Bude and Crackington Formations	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.** • **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenarios A, B & C:** Continuation of natural processes is key to the integrity of the Hobby to Peppercombe SSSI. The NAI will continue to maintain these geological features. No loss of oak *Quercus petraea* woodland or lichens in this epoch.	**Scenarios A, B & C:** Continuation of natural processes is key to the integrity of the Hobby to Peppercombe SSSI. The NAI will continue to maintain these geological features. Potential small loss of oak *Quercus petraea* woodland and lichens due to coastal erosion.	**Scenarios A, B & C:** Continuation of natural processes is key to the integrity of the Hobby to Peppercombe SSSI. The NAI will continue to maintain these geological features. Potential small loss of oak *Quercus petraea* woodland and lichens due to coastal erosion.
North Devon AONB; Hartland Heritage Coast;	• The area is designated for its rich landscape which encompasses landscape, people and nature. The AONB and Heritage Coast aims	• To avoid conflict with AONB Management Plan, Heritage Coast and Coastal Preservation Area objectives.		**Scenarios A, B & C:** Minor changes in landscape due to deteriorating coastal defence	**Scenarios A, B & C:** Minor changes in landscape due to deteriorating coastal defence	**Scenarios A, B & C:** Minor changes in landscape due to deteriorating coastal defence assets increased

HARTLAND POINT TO WESTWARD HO! (Section B)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A,B and C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
and Coastal Preservation Area	to conserve the best qualities of the landscape by helping to guide and manage change.			assets from increased erosion and flooding; minimal impact on the North Devon AONB, Hartland Heritage Coast and Coastal Preservation Area.	assets increased erosion and flooding; minimal impact on the North Devon AONB, Hartland Heritage Coast and Coastal Preservation Area. Potential for deteriorating coastal defence structures to become unsightly (except at Clovelly). within the North Devon AONB, Hartland Heritage Coast and Coastal Preservation Area.	erosion and flooding; minimal impact on the North Devon AONB, Hartland Heritage Coast and Coastal Preservation Area. Potential for deteriorating coastal defence structures to become unsightly (except at Clovelly). within the North Devon AONB, Hartland Heritage Coast and Coastal Preservation Area.
Historic Environment	• There are 3 Conservation Areas including Hartland, Clovelly and Buck's Mills. Clovelly and Buck's Mills which may be at risk of flooding. • There are 4 Scheduled Monuments including: Windbury Head Camp, a round barrow cemetery, Clovelly Dykes hillfort and earthworks at Buck's Mills. Windbury Head Camp is in close proximity to the cliff edge. • Numerous Grade II Listed Buildings and archaeological sites which are at risk of erosion. E.g. Embury Beacon Right on the cliff edge	• To avoid adverse impacts on scheduled and other nationally, regionally and locally important historic environment sites.		**Scenarios A, B & C:** No loss to Conservation Area, Schedule Monuments, Listed Buildings or archaeological sites due to erosion.	**Scenarios A, B & C:** Potential partial loss of 1 Schedule Monument; Gallantry Bower, due to erosion. The Conservation Areas at Clovelly and Buck's Mill are at risk from erosion and flooding. The Conservation Area at Hartland is inland and therefore not susceptible to erosion or flooding. No loss of Listed Buildings or archaeological sites due to erosion.	**Scenarios A, B & C:** Potential partial loss of 2 Schedule Monuments; Gallantry Bower and Windbury Head, due to erosion. The Conservation Areas at Clovelly and Buck's Mill are at risk from erosion and flooding. The Conservation Area at Hartland is inland and therefore not susceptible to erosion or flooding. No loss of Listed Buildings or archaeological sites due to erosion.
Agriculture	• Farmland stretches inland form the cliff top, therefore any erosion will affect the net area. The majority of land is medium to low grade (Grade 3 to 4).	• To avoid loss due to erosion of agricultural land (Grade 3 and above).		**Scenarios A, B & C:** Minimal loss of medium and low grade agricultural land.	**Scenarios A, B & C:** Minimal loss of medium and low grade agricultural land.	**Scenarios A, B & C:** Minimal loss of medium and low grade agricultural land.

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B and C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Westward Ho!	• Residential area with property and community services protected by a sea wall but the low-lying areas are at risk of flooding as sea levels rise. • Traditional seaside resort with a range of visitor attractions, holiday properties, holiday parks and commercial facilities that are likely to be at risk of flooding. • The 2-3 mile long sands are a blue flag beach (2008) and have associated good water quality status which is an important tourist attraction. • South West Coastal Path is protected by the sea wall as it passes through Westward Ho! and may be at risk of erosion and overtopping, especially as sea levels rise.	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. • To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To minimise the impact of policies on marine operations and activities. • **To achieve compliance with Water Framework Directive objectives.**	This section of coast encompasses the northern half of Barnstaple/Bideford Bay, incorporating the Taw-Torridge Estuary. This is a very sensitive ecological and landscape area with interesting coastal geomorphology (including a pebble ridge) as well as being a busy residential and commercial area. Potential areas of conflict include how the pebble ridge is managed: whether it is allowed to undergo natural processes or whether it will be maintained as a flood defence. It	**Scenario A, B & C:** Protection of properties, community, recreational and amenity facilities from erosion. Protection of the promenade and slipway from erosion. Tourist amenities (including a holiday camp, a park and a caravan site) and the South West Coastal Path are not at risk from erosion in this epoch. Loss of small sections of the beach through coastal	**Scenario A, B & C:** Protection of properties, community, recreational and amenity facilities from erosion. Protection of tourist amenities (including a holiday camp, a park and a caravan site), promenade and slipway from erosion. Protection sections of the South West Coastal Path. Reduction in the spatial extent of the beach through coastal squeeze.	**Scenario A, B & C:** Protection of properties, community, recreational and amenity facilities from erosion. Protection of tourist amenity (including holiday camp, park and caravan site), promenade, coast guard station and slipway from erosion. Protection sections of the South West Coastal Path. Reduction in the spatial extent of the beach through coastal squeeze.

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B and C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
			currently protects the low-lying ground at Westward Ho!, Appledore, Northam and Bideford; a landfill site; a Country Park and Golf Course; and habitats of national importance. The future evolution of the estuary mouth is difficult to predict, the southern section could experience either stability or erosion and breaching, depending on the response to sea level rise. The spits at the mouth of the estuary are considered to provide flood protection to the inner estuary including Instow and Fremington and therefore their management is a key consideration. The estuary has numerous types and varying levels of sea defence as well as areas of reclaimed land. All low-lying land around the estuary is at risk from flooding and this may conflict with areas of future development and infrastructure as well as guide areas of potential managed realignment. The Taw-Torridge estuary will be subject to sea level rise and that this is likely to occur quicker than muddy sediment can accrete. In addition, the estuary is a major sink for sand. Therefore, over time, the net area and distribution of internationally and nationally designated habitats may change. Opportunities to create intertidal habitat need to be identified to compensate for loss of intertidal habitat due to coastal squeeze similar to that at Landcross. These areas of potential realignment may conflict with plans to develop in the Taw-Torridge floodplain. A potential area for managed realignment is at Horsey Island, although any realignment poses a threat to freshwater habitats and the current grazing regime and a new defence line would have to be set back to protect Braunton.	squeeze.		
Northam Burrows	• Northam Burrows Country Park, The Royal North Devon Golf Course resides on the spit at Westward Ho! Three car parks, minor roads and the South West Coast Path provide access to the area for recreation and amenity. This area is protected on the seaward side by the pebble ridge and at its vulnerable north eastern tip by rock armour. Sea level rise and erosion will affect the effectiveness of these defences. • The North Devon Golf course hosts Championship level tournaments attracting many visitors to the region, it was established in 1864 making it the first golf course in England as well as the oldest ladies club. • The South West Coast Path and Tarka Trail following the estuary and coastline are likely to be subject to erosion and/or flooding, but should be able to be redirected as required.	• To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities.		**Scenario A:** Protection of residential properties at Northam Burrows. The Golf Course, car parks, minor roads and the Caravan Park are at risk from coastal flooding. Limited risk to car parks and minor roads from erosion in this epoch. Potential impact to local economy through a reduction in tourist numbers. Potential loss or damage to section of the South West Coastal Path due to flooding. **Scenario B:** A number of residential properties, the Golf Course, car parks, minor roads and the Caravan Park are at risk from coastal flooding. Limited risk to car parks and minor roads from erosion in this epoch. Potential impact to local economy through a reduction in tourist numbers. Potential loss or damage to section of the South West Coastal Path due to flooding. **Scenario C:** Protection of assets listed above from erosion and flooding.	**Scenario A:** Protection of residential properties at Northam Burrows. The Golf Course, car parks, minor roads and the Caravan Park are at risk from coastal flooding. Potential impact to local economy through a reduction in tourist numbers. Loss of section of a minor road providing vehicular access to the northern sections of Northam Burrows due to erosion and flooding. Loss of large sections of the South West Coastal Path due to erosion and flooding. Sections of it will need to be relocated inland. **Scenario B:** A number of residential properties, the Golf Course, car parks, minor roads and the Caravan Park are at risk from coastal flooding. Potential impact to local economy through a reduction in tourist numbers. Loss of section of a minor road providing vehicular access to the northern sections of Northam Burrows due to erosion and flooding Loss of large sections of the South West Coastal Path due to erosion and flooding. Sections of it will need to be relocated inland. **Scenario C:** Protection of assets listed above from erosion and flooding through the application of coastal defences.	**Scenario A:** Protection of residential properties at Northam Burrows. The Golf Course, car parks, minor roads and the Caravan Park are at risk from coastal flooding. Loss of section of a minor road, providing vehicular access to the northern sections of Northam Burrows, the information centre and the car park due to erosion and flooding. Potential impact to local economy through a reduction in tourist numbers. Loss of large sections of the South West Coastal Path due to erosion and flooding. Sections of it will need to be relocated inland. **Scenario B:** A number of residential properties, the Golf Course, car parks, minor roads and the Caravan Park are at risk from coastal flooding. Potential impact to local economy through a reduction in tourist numbers. Loss of section of a minor road, providing vehicular access to the northern sections of Northam Burrows, the information centre and the car park due to erosion and flooding. Loss of large sections of the South West Coastal Path due to erosion and flooding. Sections of it will need to be relocated inland. **Scenario C:** Protection of assets listed above from erosion and flooding through the application of coastal defences.
Appledore, Bideford and Instow	• Once the major port for the area, it is also an important residential area with opportunities for housing development. Between East–the-	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property.		**Scenario A & C:** Protection of residential and commercial properties, community,	**Scenario A:** Protection of residential and commercial properties, community,	**Scenario A:** Protection of residential and commercial properties, community, recreation

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B and C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
	Water and west of Bideford, 1,411- 2,043 houses over the period 2001-2011 are planned. Due to sea level rise these may be at risk from flooding. • Appledore is a fishing port with a commercial shipyard nearby which is a major employer in the area. Instow is a small harbour on the Taw –Torridge estuary and supports the North Devon Yacht Club and has a local beach. • Properties located on the sea defence walls along the estuary are at risk from flooding and erosion. • The A39, A386 and cycle path may be at risk from flooding . • Low lying villages along the River Torridge are at risk of flooding including Annery Kiln. • Provides a wide range of community services and tourist facilities including boat trips to Lundy. • The Tarka Trail starts at the Torridge estuary mouth and follows the river inland and is at risk from flooding.	• To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To minimise the impact of policies on marine operations and activities (such as maintaining navigable routes for Bideford and Appledore).	There is an opportunity to integrate the sustainable management of the coastline with the aims of the Biosphere Reserve. Braunton Burrows are expected to remain generally stable in the next century with accretion occurring. However this will be countered by increased erosion of the dune face as sea levels rise. A breach of the dunes is considered unlikely because of their sizeable extent. South West Coast Path policy is to allow natural processes to occur and realign the path inland as necessary. This is likely to also be applied to the Tarka Trail. Potentially, residents in coastal areas of low- lying ground or on cliffs susceptible to erosion may experience effects of sea level rise and increased frequency of flooding and erosion over the next 100 years and if the risk is perceived high enough people may choose to move inland, devaluing coastal properties at risk of flooding or erosion. Some properties may become blighted due to the risks.	recreation and tourist amenity facilities, roads (A39, A386 and cycle path), shipyard and harbour infrastructure at Appledore, Bideford, East-the-Water, and Instow from flooding. The Yacht Club, at Instow, facilities will be protection from flooding. The risk of flooding to villages along the Torridge and the development opportunity at East-the-Water will be reduced. Protection of sections of the Tarka Trail from flooding. **Scenario B:** potential damage or even loss of residential and commercial properties, community, recreation and tourist amenity facilities, and roads (A39, A386 and cycle path), at East-the-Water to the Torridge Bridge due to increased risk of flooding. The Yacht Club, at Instow, facilities are at risk from flooding. There is a risk of flooding to villages along the Torridge and the development opportunity at East-the-Water is potentially at risk from flooding depending on its location. Potential loss or damage to section of the Tarka Trail due to flooding. **Scenario C:** as scenario A.	recreation and tourist amenity facilities, roads (A39, A386 and cycle path), shipyard and harbour infrastructure at Appledore, Bideford, East-the-Water, and Instow from flooding. The Yacht Club, at Instow, facilities will be protection from flooding. The risk of flooding to villages along the Torridge and the development opportunity at East-the-Water will be reduced. Potential loss or damage to section of the Tarka Trail due to flooding at Skern Salt Marsh (7c08). **Scenario B:** potential damage or even loss of residential and commercial properties, community, recreation and tourist amenity facilities, and roads (A39, A386 and cycle path), at East-the-Water to the Torridge Bridge due to increased risk of flooding. The Yacht Club, at Instow, facilities are at risk from flooding. There is a risk of flooding to villages along the Torridge and the development opportunity at East-the-Water is potentially at risk from flooding depending on its location. Potential loss or damage to section of the Tarka Trail due to flooding. **Scenario C:** As Scenario A except: the Tarka Trail at Skern Salt Marsh would be protected with the loss of salt marsh due to coastal squeeze.	and tourist amenity facilities, roads (A39, A386 and cycle path), shipyard and harbour infrastructure at Appledore, Bideford, East-the-Water, and Instow from flooding. The Yacht Club, at Instow, facilities will be protection from flooding. The risk of flooding to villages along the Torridge and the development opportunity at East-the-Water will be reduced. Potential loss or damage to section of the Tarka Trail due to flooding at Skern Salt Marsh (7c08). **Scenario B:** potential damage or even loss of residential and commercial properties, community, recreation and tourist amenity facilities, and roads (A39, A386 and cycle path), at East-the-Water to the Torridge Bridge due to increased risk of flooding. The Yacht Club, at Instow, facilities are at risk from flooding. There is a risk of flooding to villages along the Torridge and the development opportunity at East-the-Water is potentially at risk from flooding depending on its location. Potential loss or damage to section of the Tarka Trail due to flooding. **Scenario C:** As Scenario A except: the Tarka Trail at Skern Salt Marsh would be protected with the loss of salt marsh due to coastal squeeze.
Braunton/Saunton	• The residential and tourist area of Braunton including low lying properties between Sandy Lane Farm and White House are set back	• To avoid loss of property and manage risk of flooding to people and property. • To avoid loss due to erosion of and manage		**Scenario A:** potential loss or damage of residential and commercial properties,	**Scenario A:** potential loss or damage of residential and commercial properties,	**Scenario A:** potential loss or damage of residential and commercial properties,

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B and C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
	behind the sand dunes. It is likely the dunes provide significant protection from flooding, although it may be susceptible to backdoor flooding from the Taw-Torridge Estuary. Approximately 185 new dwellings are allocated in the local plan for development in Braunton by 2011 and may be at risk of flooding. • The Great Sea Wall (main line of defence) and Toll Road bank (secondary defence) protect Braunton and the grazing marshes from flooding, these are in poor repair since the 1910 flood making the area susceptible to flooding as sea levels rise. • The A361 and cycle path may be at risk from flooding. • Popular beach at and Saunton supporting many activities including bathing and surfing. • Velator Quay along the River Caen is an important road-waterway interface well used by boaters and as parking for walkers and cyclists	risk of flooding to key community, recreational and amenity facilities.		community, recreational and tourist amenity facilities at Braunton, Chivenor, Wrafton and a number of smaller settlements due to flooding. This is a result of the lack of maintenance of flood defences (The Great Sea Wall and Toll Road Bank) under this scenario. Increased flood risk may reduce the productivity of the grazing marsh. The development opportunity at Braunton is potentially at risk from flooding depending on its location. Potential damage to a number of roads including the A361, the cycle path and Velator Quay due to flooding. The beach at Saunton Sands will see a reduction in extent due to erosion. Potential loss or damage to section of the South West Coastal Path due to flooding. **Scenario B:** As above except there is a potential increase flood risk to the inner estuary, due to roll back of Crow Neck and Crow Point. **Scenario C:** Protection of assets listed above through defences at Crow Neck and Crow Point that may improve flood defence standard to the inner estuary. Long-term impacts of these defences require further study. The beach at Saunton Sands will see a reduction in extent due to erosion.	community, recreational and tourist amenity facilities at Braunton, Chivenor, Wrafton and a number of smaller settlements due to flooding. This is a result of the lack of maintenance of flood defences (The Great Sea Wall and Toll Road Bank) under this scenario. Increased flood risk may reduce the productivity of the grazing marsh. The development opportunity at Braunton is potentially at risk from flooding depending on its location. Potential damage to a number of roads including the A361, the cycle path and Velator Quay due to flooding. The beach at Saunton Sands will see a reduction in extent due to erosion. Potential loss or damage to section of the South West Coastal Path due to flooding. **Scenario B:** As above except there is a potential increase flood risk to the inner estuary, due to roll back of Crow Neck and Crow Point. **Scenario C:** Protection of assets listed above through defences at Crow Neck and Crow Point . This would see the narrowing of the fronting beach and a potential reduction in flood defence standard to the inner estuary. Long-term impacts of these defences require further study. The beach at Saunton Sands will see a reduction in extent due to erosion.	community, recreational and tourist amenity facilities at Braunton, Chivenor, Wrafton and a number of smaller settlements due to flooding. This is a result of the lack of maintenance of flood defences (The Great Sea Wall and Toll Road Bank) under this scenario. Increased flood risk may reduce the productivity of the grazing marsh. The development opportunity at Braunton is potentially at risk from flooding depending on its location. Potential damage to a number of roads including the A361, the cycle path and Velator Quay due to flooding. The beach at Saunton Sands will see a reduction in extent due to erosion. Potential loss or damage to section of the South West Coastal Path due to flooding. **Scenario B:** As above except there is a potential increase flood risk to the inner estuary, due to roll back of Crow Neck and Crow Point. **Scenario C:** Protection of assets listed above through defences at Crow Neck and Crow Point. This would see the narrowing of the fronting beach and a potential reduction standard to flood defence to the inner estuary. Long-term impacts of these defences require further study. The beach at Saunton Sands will see a reduction in extent due to erosion.
Barnstaple	• Historic market town with both residential	• To avoid manage risk of flooding to people		**Scenario A:** Protection of	**Scenario A:** Protection of	**Scenario A:** Protection of

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B and C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
	and commercial properties. It has a range of community • There are approximately 7,200 new homes planned for Barnstaple (4,800 within the urban area, 2,400 outside the town) and 50 ha of employment land. These may be at risk of flooding where in proximity to the River Taw. • There are plans for a new waste incinerator at the Shapland & Petter site. • The Tarka Trail follows the River Taw from the estuary mouth inland to the source and could be at risk from flooding.	and property. • To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To minimise the impact of policies on marine operations and activities.		residential and commercial properties and community, recreational and tourist amenity facilities at Barnstaple, Pottington, Pilton, Sticklepath, Bishop's Tawton and a number of smaller settlements from flooding. The development opportunity planned for Barnstaple is potentially at risk from flooding depending on its location. The site of the proposed incinerator may at risk from flooding. Protection of the Tarka Trail from flooding. **Scenario B:** As above except potential loss or damage to section of the Tarka Trail and the cycle path due to flooding. **Scenario C:** As scenario A.	residential and commercial properties and community, recreational and tourist amenity facilities at Barnstaple, Pottington, Pilton, Sticklepath, Bishop's Tawton and a number of smaller settlements from flooding. The development opportunity planned for Barnstaple is potentially at risk from flooding depending on its location. The site of the proposed incinerator may at risk from flooding. Protection of the Tarka Trail from flooding. **Scenario B:** As above except potential loss or damage to section of the Tarka Trail and the cycle path due to flooding. **Scenario C:** As scenario A.	residential and commercial properties and community, recreational and tourist amenity facilities at Barnstaple, Pottington, Pilton, Sticklepath, Bishop's Tawton and a number of smaller settlements from flooding. The development opportunity planned for Barnstaple is potentially at risk from flooding depending on its location. The site of the proposed incinerator may at risk from flooding. Protection of the Tarka Trail from flooding. **Scenario B:** As above except potential loss or damage to section of the Tarka Trail and the cycle path due to flooding. **Scenario C:** As scenario A.
Critical infrastructure	• There are numerous substations and power lines along the coast that are at risk of flooding as sea levels rise which could leave wider areas than the coast without power • Ashford sewage works are on low lying ground and are at risk of flooding which could cause pollution.	• To ensure critical services remain operational		**Scenario A, B & C:** Protection of the substations at Bideford, the south side of the Estuary at Estuary Business Park, and Barnstaple. Ashford sewage works are not at risk from flooding.	**Scenario A:** Protection of the substations at Bideford, the south side of the Estuary at Estuary Business Park, and Barnstaple. Ashford sewage works are not at risk from flooding. **Scenario B:** As above except the substations on the south side of the estuary at Estuary Business Park (7c16) is at risk from flooding. **Scenario C:** As scenario A.	**Scenario A:** Protection of the substations at Bideford and Barnstaple. Potential damage or loss of the substations on the south side of the Estuary at Estuary Business Park from flooding. Ashford sewage works are not at risk from flooding. **Scenario B:** Protection of the substations at Bideford and Barnstaple. Potential damage or loss of the substations on the south side of the estuary at Estuary Business Park from flooding. Ashford sewage works are not at risk from flooding. **Scenario C:** Protection of the substations at Bideford, the south side of the estuary at Estuary Business Park, and Barnstaple.

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B and C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
						Ashford sewage works are not at risk from flooding.
Landfill sites	• Northam Burrows: currently there are no direct pathways for people to be affected by this landfill site, However due to sea level rise and the decreasing level of protection provided by the pebble ridge it is likely to become more frequently flooded and more likely for contamination to percolate in low levels into the wider estuary. If the area became eroded the contents would circulate into the estuary, beaches and the sea.	• **To achieve compliance with Water Framework Directive objectives.** • **To prevent pollution from contaminated sources.**		**Scenario A:** Protection of the former landfill site at Northam Burrows from flooding. **Scenario B:** increased risk of flooding to the former landfill site causing potential pollution of the estuary. **Scenario C:** as scenario A.	**Scenario A & C:** Protection of the former landfill site at Northam Burrows from flooding. **Scenario B:** increased risk of flooding to the former landfill site causing potential pollution of the estuary. **Scenario C:** as scenario A.	**Scenario A & C:** Protection of the former landfill site at Northam Burrows from flooding. **Scenario B:** increased risk of flooding to the former landfill site causing potential pollution of the estuary. **Scenario C:** as scenario A.
	• The old Yelland Power Station site contains ash beds, asbestos and possibly heavy metal contamination which is at risk of flooding			**Scenario A, B & C:** Protection of the old Yelland Power Station from flooding.	**Scenario A:** Protection of the old Yelland Power Station from flooding. **Scenario B:** Increased risk of flooding of the old Yelland Power station and risk of reactiving contaminated ash bed. **Scenario C:** as scenario A.	**Scenario A:** Protection of the old Yelland Power Station from flooding. **Scenario B:** Increased risk of flooding of the old Yelland Power station and risk of reactiving contaminated ash bed. **Scenario C:** as scenario A.
Braunton Burrows UNESCO Biosphere Reserve Status	• Braunton Burrows SAC is the core area for the Biosphere Reserve. There is a buffer zone encompassing the Taw–Torridge Estuary and a further transition zone which stretches out to Lundy Island. The Reserve seeks to sustain both people and nature.	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B & C:** Natural processes will continue to develop the Biosphere Reserve's dune formations. However, the site may be impacted by defence decisions at Northam Burrows.	**Scenario A, B & C:** Natural processes will continue to develop the Biosphere Reserve's dune formations. However, the site may be impacted by defence decisions at Northam Burrows.	**Scenario A, B & C:** Natural processes will continue to develop the Biosphere Reserve's dune formations. However, the site may be impacted by defence decisions at Northam Burrows.
Braunton Burrows SAC	• Braunton Burrows is internationally designated for its fixed dunes with herbaceous vegetation (grey dunes), dunes with *Salix repens* ssp. *argenta (Salicon arenariae),* humid dune slacks, mudflats and sandflats not covered by sea water at low tide, shifting dunes along the shoreline with *Ammophila arenaria* (white dunes). • It is likely over time that the net area and distribution of these habitats and the species supported will vary in accordance with natural processes.	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B & C:** Natural processes will continue to develop the Braunton Burrows SAC dune formations. However, the site may be impacted by defence decisions at Northam Burrows. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B & C:** Natural processes will continue to develop the Braunton Burrows SAC dune formations. However, the site may be impacted by defence decisions at Northam Burrows. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B & C:** Natural processes will continue to develop the Braunton Burrows SAC dune formations. However, the site may be impacted by defence decisions at Northam Burrows. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Westward Ho! Cliffs SSSI	• Designated for its coastal geomorphology and quaternary deposits, including multiple shore platforms and a classic succession of raised beaches and head deposits.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.** • **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenario A, B & C:** Holding the line may prevent erosion of geological features. With the exception of the western end of this section which comprises of undefended cliffs. Natural processes will continue and will return the undefended areas of the SSSI to favourable status.	**Scenario A, B & C:** Holding the line may prevent erosion of geological features. With the exception of the western end of this section which comprises of undefended cliffs. Natural processes will continue and will return the undefended areas of the SSSI to favourable status.	**Scenario A, B & C:** Holding the line may prevent erosion of geological features. With the exception of the western end of this section which comprises of undefended cliffs. Natural processes will continue and will return the undefended areas of the SSSI to favourable status.

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B and C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Braunton Burrows SSSI	• Braunton is one of the largest sand dunes in the UK with flooded slacks grassland and scrub behind a wide sandy foreshore. • It is likely over time that the net area and distribution of these habitats and the species supported will vary in accordance with natural processes.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B & C:** Natural processes will continue to develop the Braunton Burrows SSSI dune formations.	**Scenario A, B & C:** Natural processes will continue to develop the Braunton Burrows SSSI dune formations.	**Scenario A, B & C:** Natural processes will continue to develop the Braunton Burrows SSSI dune formations.
Northam Burrows SSSI	• Northam Burrows has a wide range of coastal habitats including supporting rare and local plants and overwintering birds. It includes the pebble ridge which is an important landform feature. • It is likely over time that the net area and distribution of the intertidal habitats that are crucial to supporting the internationally and nationally important populations of migratory, breeding and overwintering birds will vary in accordance with the natural processes. The pebble ridge will undergo further change if unmanaged, exposing freshwater habitats behind to flooding.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.** • **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenarios A & B:** Small changes in coastal geomorphological features. Any breach in the pebble ridge would be expected to reseal by littoral processes. **Scenario C:** Coastal squeeze will see a reduction in the volume of the pebble ridge. However, there will be no reduction in spatial extent of the SSSI.	**Scenario A:** reduction in spatial extent of Northam Burrow SSSI as the pebble ridge rolls back to the retreat line. **Scenario B:** Changes in coastal geomorphological features. Any breach in the pebble ridge would not be resealed and there would be an increased flood risk to the SSSI. **Scenario C:** Further reductions in the volume of the pebble ridge will promote scouring of any defence structures. However, there will be no reduction in spatial extent of Northam Burrows SSSI providing the defences are maintained.	**Scenario A:** reduction in spatial of the Northam Burrow SSSI as the pebble ridge rolls back to the retreat line. **Scenario B:** Changes in coastal geomorphological features. The location of the breach may see the alteration in flow of the Estuary through it. **Scenario C:** Further reductions in the volume of the pebble ridge will promote scouring of any defence structures. However, there will be no reduction in spatial extent of Northam Burrow SSSI providing the defences are maintained.
Taw-Torridge Estuary SSSI	• Designated for its tidal mudflats, sandbanks and saltmarshes and overwintering and migratory birds. • It is likely over time that the net area and distribution of the intertidal habitats that are crucial to supporting the internationally and nationally important populations of migratory, breeding and overwintering birds will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat which will have to be compensated.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenarios A, B & C:** large areas of Taw-Torridge SSSI are at risk from flooding. This is likely to alter the intertidal habitat which will impact on species and habitats.	**Scenarios A, B & C:** large areas of Taw-Torridge SSSI are at risk from flooding. This is likely to alter the intertidal habitat which will impact on species and habitats.	**Scenarios A, B & C:** large areas of Taw-Torridge SSSI are at risk from flooding. This is likely to alter the intertidal habitat which will impact on species and habitats.
Braunton Swanpool SSSI	• Designated for its reedbed and herb rich marshy grasslands. It is currently protected from erosion by the dunes and may be at risk of back door flooding from the Taw Torridge estuary.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenarios A, B & C:** Braunton Swanpool SSSI is at risk from flooding. Increased exposure to saline conditions may impact on herb rich marshy grasslands and result in a change in the nature conservation value of the SSSI.	**Scenarios A, B & C:** Braunton Swanpool SSSI is at risk from flooding. Increased exposure to saline conditions may impact on herb rich marshy grasslands and result in a change in the nature conservation value of the SSSI..	**Scenarios A, B & C:** Braunton Swanpool SSSI is at risk from flooding. Increased exposure to saline conditions may impact on herb rich marshy grasslands and result in a change in the nature conservation value of the SSSI.
Greenaways and	• Designated for its herb rich marshy grasslands	• **To avoid adverse impacts on, conserve and**		**Scenarios A, B & C:**	**Scenarios A, B & C:**	**Scenarios A, B & C:** Greenaways

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B and C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Freshways Marshes SSSI	and rich water-plant communities. • The marsh behind the ridge is susceptible to inundation as the ridge is decreasing in width and rolling back. Over time although it is beneficial to create intertidal habitats, there will be a potential loss of freshwater plant species present in the marsh area.	**where practical enhance the designated interest of nationally designated conservation sites.**		Greenaways and Freshways Marshes SSSI is at risk from flooding. Increased exposure to saline conditions may impact on herb rich marshy grasslands and other freshwater plant species. This could result in a change in the nature conservation value of the SSSI.	Greenaways and Freshways Marshes SSSI is at risk from flooding. Increased exposure to saline conditions may impact on herb rich marshy grasslands and other freshwater plant species. This could result in a change in the nature conservation value of the SSSI.	and Freshways Marshes SSSI is at risk from flooding. Increased exposure to saline conditions may impact on herb rich marshy grasslands and other freshwater plant species. This could result in a change in the nature conservation value of the SSSI.
Fremington Quay Cliffs SSSI (Geological)	• The cliffs are designated for their exposure of uninterrupted marine sedimentation around Devonian-Carboniferous boundary.	• **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenarios A, B & C:** Continuation of natural processes is key to the integrity of Fremington Quay Cliffs SSSI. Theses scenarios (NAI) will continue to maintain these geological features. However, along sections where HTL is the preferred policy this will not allow for further exposures.	**Scenarios A:** Continuation of natural processes is key to the integrity of Fremington Quay Cliffs SSSI. Theses scenarios (NAI) will continue to maintain these geological features. However, along sections where HTL is the preferred policy this will not allow for further exposures. **Scenario B:** MR will allow the continuation of natural processes which will maintain these geological features. **Scenarios C:** as scenario A.	**Scenario A & B:** MR will allow the continuation of natural processes which will maintain these geological features. **Scenarios C:** Continuation of natural processes is key to the integrity of Fremington Quay Cliffs SSSI. Theses scenarios (NAI) will continue to maintain these geological features. However, along sections where HTL is the preferred policy this will not allow for further exposures.
Kenwith Valley Local Nature Reserve	• Designated for its lake, new woodlands and traditional grasslands.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenarios A, B & C:** Kenwith Valley LNR is at risk from flooding. Increased exposure to saline conditions may result in a change in the conservation value of the SSSI.	**Scenarios A, B & C:** Kenwith Valley LNR is at risk from flooding. Increased exposure to saline conditions may result in a change in the conservation value of the SSSI.	**Scenarios A, B & C:** Kenwith Valley LNR is at risk from flooding. Increased exposure to saline conditions may result in a change in the conservation value of the SSSI.
Fremington Local Nature Reserve	• Designated for its grassland site adjacent to the estuary and woodlands beside Griggs Field in Fremington.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenarios A, B & C:** Fremington LNR is at risk from flooding. Increased exposure to saline conditions may result in a change in the conservation value of the SSSI.	**Scenarios A, B & C:** Fremington LNR is at risk from flooding. Increased exposure to saline conditions may result in a change in the conservation value of the SSSI.	**Scenarios A, B & C:** Fremington LNR is at risk from flooding. Increased exposure to saline conditions may result in a change in the conservation value of the SSSI.
County Wildlife Sites	• There are County Wildlife Sites located at South Yeo Fields, Allenstyle Wood, Mill Leat (Fremington), Saltpill duckpond and Horsey Island for their local nature conservation importance.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenarios A & B:** All of the CWS listed are at risk from flooding with the exception of Allenstyle Wood. **Scenarios C**: a reduction in the flood risk at listed sites.	**Scenarios A & B:** All of the CWS listed are at risk from flooding with the exception of Allenstyle Wood. **Scenarios C**: a reduction in the flood risk at listed sites.	**Scenarios A & B:** All of the CWS listed are at risk from flooding with the exception of Allenstyle Wood. **Scenarios C**: a reduction in the flood risk at listed sites.
Locally important sites	• Locally important wildlife sites include Skern Bay, Braunton Great Field, Braunton Marsh, Islay Marsh (RSPB) and Home Farm (Gaia Trust)	•		**Scenarios A & B:** A number of locally important sites are at risk from flooding. **Scenarios C**: a reduction in the flood risk at listed sites.	**Scenarios A & B:** A number of locally important sites are at risk from flooding. **Scenarios C**: a reduction in the flood risk at listed sites.	**Scenarios A & B:** A number of locally important sites are at risk from flooding. **Scenarios C**: a reduction in the flood risk at listed sites.

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B and C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
North Devon AONB, North Devon Heritage Coast and Coastal Preservation Area	• The area is designated for its rich landscape which encompasses landscape, people and nature. The AONB, Heritage Coast and Coastal Preservation Area aims to conserve the best qualities of the landscape by helping to guide and manage change.	To avoid conflict with AONB Management Plan, Heritage Coast and Coastal Preservation Area Objectives.		**Scenario A:** Minor changes in landscape within AONB Heritage Coast and Coastal Preservation Area due to increased erosion and flooding. Potential for deteriorating coastal defence structures to become unsightly within AONB Heritage Coast and Coastal Preservation Area. **Scenario B:** Minor changes in landscape within AONB Heritage Coast and Coastal Preservation Area due to increased erosion and flooding. Also potential for deteriorating coastal defence structures to become unsightly. **Scenario C:** As Scenario A	**Scenarios A:** Minor changes in landscape within AONB Heritage Coast and Coastal Preservation Area due to increased erosion and flooding. Potential for deteriorating coastal defence structures to become unsightly within AONB Heritage Coast and Coastal Preservation Area. Larger defences or more structures may be required to maintain an acceptable standard of flood and erosion protection in some areas, thus potentially resulting in a change of views and a change in landscape character. **Scenario B:** Minor changes in landscape within AONB Heritage Coast and Coastal Preservation Area due to increased erosion and flooding. Also potential for deteriorating coastal defence structures to become unsightly. **Scenario C:** As Scenario A	**Scenarios A:** Minor changes in landscape due to increased erosion and flooding. Potential for deteriorating coastal defence structures to become unsightly within AONB Heritage Coast and Coastal Preservation Area. Larger defences or more structures may be required to maintain an acceptable standard of flood and erosion protection in some areas, thus potentially resulting in a change of views and a change in landscape character. **Scenario B:** Minor changes in landscape within AONB Heritage Coast and Coastal Preservation Area due to increased erosion and flooding. Also potential for deteriorating coastal defence structures to become unsightly. **Scenario C:** As Scenario A
Transportation network	• Major road links including the A361 following the North bank of the River Taw, the A386 on the west bank of the River Torridge are on low-lying ground and may be at risk from flooding. • The B3233 is on low-lying ground and may also be at risk from flooding. • The Barnstaple to Exeter railway line, following the Taw Estuary, is vulnerable to flooding.	To ensure critical road and rail linkages are maintained.		**Scenario A:** Protection of sections of the A361, A386 and B3233 in addition to a number of access roads and the Barnstaple to Exeter railway line from flooding. **Scenario B:** Sections of the A361, A386 and B3233 in addition to a number of access roads and the Barnstaple to Exeter railway line are at risk from flooding. **Scenario C:** As Scenario A.	**Scenario A:** Protection of sections of the A361, A386 and B3233 in addition to a number of access roads and the Barnstaple to Exeter railway line from flooding. **Scenario B:** Sections of the A361, A386 and B3233 in addition to a number of access roads and the Barnstaple to Exeter railway line are at risk from flooding. **Scenario C:** As Scenario A.	**Scenario A:** Protection of sections of the A361, A386 and B3233 in addition to a number of access roads and the Barnstaple to Exeter railway line from flooding. **Scenario B:** Sections of the A361, A386 and B3233 in addition to a number of access roads and the Barnstaple to Exeter railway line are at risk from flooding. **Scenario C:** As Scenario A.
Chivenor Military Camp/ Braunton Burrows	• A strategically important Royal Marine Base at Chivenor within Taw-Torridge Estuary is at risk from flooding.	• To minimise the impact of policies on military operations and activities.		**Scenarios A, B & C:** The airfield at Chivenor and its associated infrastructure,	**Scenarios A, B & C:** The airfield at Chivenor and its associated infrastructure,	**Scenarios A, B & C:** The airfield at Chivenor and its associated infrastructure, which includes the

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B and C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
	• The Ministry of Defence also lease and look after part of Braunton Burrows and are unlikely to be affected.			which includes the Royal Marine Base, are at risk from flooding. Ministry of Defence land on Braunton Burrows is at risk from flooding.	which includes the Royal Marine Base, are at risk from flooding. Ministry of Defence land on Braunton Burrows is at risk from flooding.	Royal Marine Base, are at risk from flooding. Ministry of Defence land on Braunton Burrows is at risk from flooding.
Historic environments	• There are 14 Conservation Areas including: Bideford, Appledore, Northam, Westleigh, Instow, Fremington, Lake, Barnstaple, Landkey, Ashford, Marwood, Heanton Punchardon, Guineaford and Braunton. Where any parts of these are on low-lying land, they may be at risk from flooding. • There are 6 Scheduled Monuments within the Study area including Barnstaple Castle, Godsbrough Castle Earthwork, Kenwith Castle, Lenwood Bowl Barrow, The Castle Knowle, Spreacombe Manor Well Chapel (Braunton). Where these are located on low-lying land, they may be at risk from flooding. • There are three Registered Park and Gardens including: Saunton Court, Tapeley Park and Youlston Park. Saunton Court may be susceptible to erosion whilst Tapeley Park is at risk of flooding. • Industrial historic environments of the Rolle Canal at Landcross and Monkleigh are being restored and are at risk of flooding as sea levels rise.	• To avoid adverse impacts on scheduled and other nationally, regionally and locally important historic environment sites.		**Scenario A, B & C:** Protection of Conservation Areas at Instow, Bideford, East-the – water, Fremington, Bickington and , Barnstaple, Tawstock and Braunton from flooding. **Scenario A, B & C:** Of the 6 Schedule Monument listed in the key issues 1, Barnstaple Castle, is at risk from potential damage due to flooding. This will be protected under these scenarios. **Scenario A, B & C:** Tapeley Park is at risk from flooding. Saunton Court, Tapeley Park and Youlston Park. Saunton Court are not at risk from damage cause by erosion. **Scenario A, B & C:** Grade II Listed Building at Braunton Marsh at risk from flooding.	**Scenario A:** Protection of Conservation Areas at Instow, Fremington, Bickington and Barnstaple from flooding. **Scenario B:** Protection of the Conservation Area at the above except at Fremington and Braunton. **Scenario C:** As scenario A. **Scenario A, B & C:** Of the 6 Schedule Monument listed in the key issues 1, Barnstaple Castle, is at risk from potential damage due to flooding. This will be protected under these scenarios. **Scenario A, B & C:** Tapeley Park is at risk from flooding. Saunton Court, Tapeley Park and Youlston Park. Saunton Court are not at risk from damage cause by erosion. **Scenario A, B & C:** Grade II Listed Building at Braunton Marsh at risk from flooding.	**Scenario A:** Protection of Conservation Areas at Instow, Fremington, Bickington and Barnstaple from flooding. **Scenario B:** Protection of the Conservation Area at the above except at Fremington and Braunton. **Scenario C:** As scenario A. **Scenario A, B & C:** Of the 6 Schedule Monument listed in the key issues 1, Barnstaple Castle, is at risk from potential damage due to flooding. This will be protected under these scenarios. **Scenario A, B & C:** Tapeley Park is at risk from flooding. Saunton Court, Tapeley Park and Youlston Park. Saunton Court are not at risk from damage cause by erosion. **Scenario A, B & C:** Grade II Listed Building at Braunton Marsh at risk from flooding.
Agricultural land	• The land classification varies from Grade 5 to Grade 2, although the lower grades tend to be within the estuary itself or immediately adjacent to the estuary. • Northam Burrows is common land of over 600ha regularly used for grazing by the commoners; this low lying ground is at risk of flooding and erosion.	• To avoid loss due to erosion of and/or manage risk of flooding to agricultural land (Grade 3 and above).		**Scenario A, B & C:** Minimal loss of higher grade agricultural land adjacent to the Estuary due to erosion. However, areas of agricultural land are at risk from flooding. However, high grade agricultural land (Grade 2) at Braunton is at risk from flooding. No loss of grazing land on Northam Burrows due to erosion but increase risk of flooding.	**Scenario A, B & C:** Minimal loss of higher grade agricultural land adjacent to the Estuary due to erosion. However, areas of agricultural land are at risk from flooding. However, high grade agricultural land (Grade 2) at Braunton is at risk from flooding. Loss of grazing land on Northam Burrows due to erosion and increase risk of flooding.	**Scenario A, B & C:** Minimal loss of higher grade agricultural land adjacent to the Estuary due to erosion. However, areas of agricultural land are at risk from flooding. However, high grade agricultural land (Grade 2) at Braunton is at risk from flooding. Loss of grazing land on Northam Burrows due to erosion and increase risk of flooding.

WESTWARD HO! TO SAUNTON DOWN (Section C)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B and C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)

SAUNTON DOWN TO MORTE POINT (Section D)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B & C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
Isolated cliff top properties, including a Farm, and several cliff top hotels at Woolacombe and Barricane beach	• There are several residential and business properties and the risk of erosion to these properties and land is dependent upon the local cliff geology. • Minor roads providing access to properties may be at risk from erosion, depending upon local geology.	• To avoid loss of property due to erosion. • To ensure critical road linkages are maintained (as long as required).	This section of coast forms the northern part of Bideford Bay. It contains the embayments of Croyde and Morte Bay which contain wide sandy beaches and dune systems. This is predominantly a cliffed section of coast with a small area of low-lying land along the coastal fringe at Woolacombe. With the exception of Putsborough sands, there are no coastal defences. It is also a very popular stretch of coast for visitors to enjoy the beaches.	**Scenario A:** protection of properties north of Croyde. **Scenario B:** Failure of the coastal defence and the loss of properties north of Croyde. **Scenario C:** As Scenario A. Residential properties, roads, amenities and infrastructure are at risk from fluvial flooding at Croyde Village and Woolacombe.	**Scenario A & B:** Loss of some properties north of Croyde. **Scenario C:** protection of properties north of Croyde. Residential properties, roads, amenities and infrastructure are at risk from flooding at Croyde Village and Woolacombe.	**Scenario A & B:** Loss of some properties north of Croyde. **Scenario C:** protection of properties north of Croyde. Residential properties, roads, amenities and infrastructure are at risk from flooding at Croyde Village and Woolacombe.
Tourist facilities	• The beaches at Rockham Bay, Croyde, Putsborough Woolacombe and Barricane Bay are of vital importance to the tourist industry of North Devon. Many cafes, camping parks, guesthouses, hotels and holiday parks are reliant upon the associated visiting population. • The South West Coastal Path also runs along the most of this frontage and is at risk from erosion – but there is potential for this to be relocated. • As this is an important tourist destination, access, parking and basic facilities are required at various locations along the coast, and if located near the cliff edge may be subject to erosion, but potentially these could be relocated if land was available.	• To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities.	This stretch of coast has numerous geological exposures of national interest. The headland cliffs of Baggy Point and Morte Point are hard and erosion resistant although cliff failure may occur in locations over time. Sea level rise may result in shoreline retreat within the Bays, although the dunes at the back of Croyde Bay are sufficiently wide for erosion to not pose a threat to their integrity. Whilst at Putsborough, where the dunes are narrower, a net loss of dune width is likely to occur. South West Coast Path policy is to allow natural processes to occur and realign the path inland as necessary. Potentially, residents in coastal areas of low- lying ground or on cliffs susceptible to erosion may experience effects of sea level rise and increased frequency of flooding and erosion over the next 100 years and if the risk is perceived high enough people may choose to move inland, devaluing coastal properties at risk of flooding or erosion. Some properties may become blighted due to the risks.	**Scenario A, B, & C:** No reduction in beach width or loss of cafes, camping parks, guesthouses, hotels and holiday parks due to erosion in this epoch. Tourist infrastructure and amenities at risk from flooding at Croyde and Woolacombe. Damage to these assets will impact on the tourism industry.	**Scenario A, B, & C:** No reduction in beach width or loss of cafes, camping parks, guesthouses, hotels and holiday parks due to erosion in this epoch. Tourist infrastructure and amenities at risk from flooding at Croyde and Woolacombe. Damage to these assets will impact on the tourism industry.	**Scenario A & B**. Loss of the caravan park at Putsborough Sands, Slipway, and sections of the South West Coastal Path due to erosion. There is also a reduction in beach width at Rockham Bay, Croyde, Putsborough Woolacombe and Barricane Bay due to erosion. The loss of these assets will impact on the tourist industry. **Scenario C:** Protection of the caravan park at Putsborough Sands, Slipway, and sections of the South West Coastal Path from erosion. Reduction in beach width at Rockham Bay, Croyde, Putsborough Woolacombe and Barricane Bay due to erosion. The loss of these assets will impact on the tourist industry. Tourist infrastructure and amenities at risk from flooding at Croyde and Woolacombe. Damage to these assets will impact on the tourism industry.

SAUNTON DOWN TO MORTE POINT (Section D)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Critical infrastructure	• There are numerous substations and power lines along the coast that are at risk of flooding as sea levels rise which could leave wider areas than the coast without power	• To ensure critical services remain operational		**Scenario A, B, & C:** There are no power lines or substations along this section of coast that are at risk from flooding or erosion.	**Scenario A, B, & C:** There are no power lines or substations along this section of coast that are at risk from flooding or erosion.	**Scenario A, B, & C:** There are no power lines or substations along this section of coast that are at risk from flooding or erosion.
Saunton to Baggy Point Coast SSSI (geological and biological)	• Designated for its geological exposures (Lower Pilton Beds with fossils), geomorphology and botanical interest.	• To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs. • **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A:** coastal defences will prevent natural processes maintain these geological features. **Scenario B:** continuation of natural processes is key to the integrity of Saunton to Baggy Point Coast SSSI. This scenario (NAI) will continue to maintain these geological features. **Scenario C:** As Scenario A.	**Scenario A & B:** continuation of natural processes is key to the integrity of Saunton to Baggy Point Coast SSSI. This scenario (NAI) will continue to maintain these geological features. **Scenario C:** coastal defences will prevent natural processes maintain these geological features.	**Scenario A & B:** continuation of natural processes is key to the integrity of Saunton to Baggy Point Coast SSSI. This scenario (NAI) will continue to maintain these geological features. **Scenario C:** coastal defences will prevent natural processes maintain these geological features.
Barricane beach SSSI (geological)	• Designated for the Upper Devonian (Frasnian –Fammenian) Morte Slates and are highly fossiliferous.	• **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of Barricane beach SSSI. These scenarios (NAI) will continue to maintain these geological features	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of Barricane beach SSSI. These scenarios (NAI) will continue to maintain these geological features	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of Barricane beach SSSI. These scenarios (NAI) will continue to maintain these geological features
Mill Rock SSSI (geological)	• Designated for its well preserved fragments of Upper Devonian fish.	• **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of Mill Rock SSSI. These scenarios (NAI) will continue to maintain these geological features	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of Mill Rock SSSI. These scenarios (NAI) will continue to maintain these geological features	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of Mill Rock SSSI. These scenarios (NAI) will continue to maintain these geological features
Morte Point SSSI (biological)	• Designated for its maritime heath and coastal cliffs.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C:** No changes in Heath and coastal cliffs of the Morte Point SSSI due to erosion.	**Scenario A, B, & C:** No changes in Heath and coastal cliffs of the Morte Point SSSI due to erosion.	**Scenario A, B, & C:** No changes in Heath and coastal cliffs of the Morte Point SSSI due to erosion.
Middleborough Hill and Woolacombe Down County Wildlife Sites	• There are two County Wildlife Sites including Middleborough Hill and Woolacombe Down, which may due to their location be vulnerable to erosion and flooding.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenario A, B, & C:** No changes in designated habitats of Middleborough Hill and Woolacombe Down CWS due to erosion.	**Scenario A, B, & C:** No changes in designated habitats of Middleborough Hill and Woolacombe Down CWS due to erosion.	**Scenario A, B, & C:** No changes in designated habitats of Middleborough Hill and Woolacombe Down CWS due to erosion.

SAUNTON DOWN TO MORTE POINT (Section D)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B & C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
North Devon AONB and North Devon Heritage Coast	• The area is designated for its rich landscape which encompasses landscape, people and nature. The AONB aims to conserve the best qualities of the landscape by helping to guide and manage change.	• To avoid conflict with AONB Management Plan, Heritage Coast and Coastal Preservation Area Objectives.		**Scenario A, B, & C:** Potential changes in landscape through increased erosion within North Devon AONB and North Devon Heritage Coast.	**Scenarios A:** Minor changes in landscape due to increased erosion and flooding within North Devon AONB and North Devon Heritage Coast. Potential for deteriorating coastal defence structures to become unsightly. Larger defences or more structures may be required to maintain an acceptable standard of flood and erosion protection in some areas, thus potentially resulting in a change of views and a change in landscape character within North Devon AONB and North Devon Heritage Coast. **Scenario B:** Minor changes in landscape due to increased erosion and flooding. Potential for deteriorating coastal defence structures to become unsightly within North Devon AONB and North Devon Heritage Coast. **Scenario C:** As Scenario A	**Scenarios A & B:** Minor changes in landscape due to increased erosion and flooding North Devon AONB and North Devon Heritage Coast Potential for deteriorating coastal defence structures to become unsightly. **Scenario C:** Minor changes in landscape due to increased erosion and flooding within North Devon AONB and North Devon Heritage Coast. Potential for deteriorating coastal defence structures to become unsightly. Larger defences or more structures may be required to maintain an acceptable standard of flood and erosion protection in some areas, thus potentially resulting in a change of views and a change in landscape character within North Devon AONB and North Devon Heritage Coast.
Voluntary Marine Conservation Area	• Voluntary, non-statutory Marine Conservation Area between Combe Martin and Croyde, but potential precursor to a Marine Conservation Zone under the Marine Bill,	To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenario A, B, & C:** Planned activities or NAI along the shoreline are unlikely to impact on this marine area.	**Scenario A, B, & C:** Planned activities or NAI along the shoreline are unlikely to impact on this marine area.	**Scenario A, B, & C:** Planned activities or NAI along the shoreline are unlikely to impact on this marine area.
Historic environments	• Woolacombe is the only designated Conservation Area; areas adjacent to the cliffs may be vulnerable to erosion. • There are a number of Listed Buildings and archaeological sites along this stretch of coastline, but no Scheduled Monuments. These are susceptible to flooding or erosion.	• To avoid adverse impacts on scheduled and other nationally, regionally and locally important historic environment sites.		**Scenario A, B, & C:** Sections of the Conservation Area at Woolacombe are at risk from flooding. None of the listed buildings are at risk from flooding.	**Scenario A, B, & C:** Sections of the Conservation Area at Woolacombe are at risk from flooding. None of the listed buildings are at risk from flooding.	**Scenario A, B, & C:** Sections of the Conservation Area at Woolacombe are at risk from flooding. None of the listed buildings are at risk from flooding.
Agricultural land	• Grade 3 farmland on Saunton Down and Baggy Point stretches inland from the cliff tops including some areas of Grade 2 land; therefore any erosion at these locations may affect the net area of this medium to high grade farmland.	• To avoid loss due to erosion of and/or manage risk of flooding to agricultural land (Grade 3 and above).		**Scenario A, B, & C:** Small areas of Grade 3 and above agricultural land at risk from flooding.	**Scenario A, B, & C:** Small areas of Grade 3 and above agricultural land at risk from flooding.	**Scenario A, B, & C:** Loss of Grade 2 and 3 agricultural land due to erosion.

MORTE POINT TO MINEHEAD (Section E)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Ilfracombe	• Small port/harbour with properties on the sea front that are at the greatest risk of flooding. • Ilfracombe's picturesque qualities, wide range of services and activities provide an excellent tourist location, some of these facilities particularly those based on cliff tops may be at risk from erosion or flooding, • Hele, Capstone, Wildermouth and Tunnels beach are nearby. • Fishing fleet is based at Ilfracombe. • 420 new dwellings have been planned for Ilfracombe to be implemented by 2011.	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. • To minimise the impact of policies on marine operations and activities.	This section of coast is predominantly rural and undeveloped lying within Exmoor National Park. The population is concentrated amongst several small towns and villages including: Lee, Ilfracombe, Hele, Combe Martin, Lynton and Lynmouth, Porlock and Minehead. At these locations coastal defences generally take the form of seawalls and structures associated with harbour development. This section of coast has nationally important geological features Improvements to coastal defences may pose a threat to these features and may interfere with potential sediment transport pathways along the shoreline. This section of coast also has international and national nature conservation interest and key features over time will be subject to natural processes of erosion and flooding, but this should not affect the integrity of these sites. Although the coastline is hard rock there are local variations and several cliff top holiday parks and camp sites may be at risk from erosion. The management of Porlock is undertaken by the National Trust, who has a policy of allowing Porlock Ridge to rollback in response to sea level rise. The ridge is likely to rollback landwards and breach more frequently in response to sea level rise and future climate change. The management of the landfill site in this area is a consideration. South West Coast Path policy is to allow natural processes to occur and realign the path inland as necessary. Potentially, residents in coastal areas of low- lying ground or on cliffs susceptible to erosion may experience effects of sea level rise and increased frequency of flooding and erosion over the next 100 years and if the risk is perceived high enough people may choose to move inland, devaluing coastal properties at risk	**Scenario A, B, & C:** Protection of residential properties, roads amenities, and infrastructure from flooding at Ilfracombe, Hele and Watermouth Cove. The above are not at risk from erosion. Protection of these assets will ensure Ilfracombe remains an excellent tourist location. No predicted loss in beach width at Hele, Capstone, Wildermouth and Tunnels beach due to erosion in this epoch. The development opportunity planned for Ilfracombe is potentially at risk from flooding depending on its location.	**Scenario A, B, & C:** Protection of residential properties, roads amenities, and infrastructure from flooding at Ilfracombe, Hele and Watermouth Cove. The above are not at risk from erosion. Protection of these assets will ensure Ilfracombe remains an excellent tourist location. No predicted loss in beach width at Hele, Capstone, Wildermouth and Tunnels beach due to erosion in this epoch. The development opportunity planned for Ilfracombe is potentially at risk from flooding depending on its location.	**Scenario A, B, & C:** protection of harbour infrastructure, amenity facilities and beach width due to erosion. This will allow for the continuing function of the fishing fleet at Ilfracombe. Protection of these assets will also ensure Ilfracombe remains an excellent tourist location. **Scenario A, B, & C:** Residential properties, roads, amenities and infrastructure are at risk from flooding at Ilfracombe, Hele and Watermouth Cove. Permanent loss of some community, recreational and amenity facilities due to erosion. Reduction in beach width due to erosion at Hele, Capstone, Wildermouth and Tunnels beach. The development opportunity planned for Ilfracombe is potentially at risk from flooding depending on its location.
Combe Martin	• Small coastal town nestled within a steep valley leading down to the sea with a beach frontage. Although there is a sea wall, some properties on the beach front are at risk from flooding. • Popular tourist destination with many attractions and tourist associated businesses.	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. • To minimise the impact of policies on marine operations and activities.		**Scenario A, B, & C:** Protection of residential properties, roads, amenities and infrastructure at risk from flooding at Combe Martin. Protection of these assets will benefit the tourism industry.	**Scenario A, B, & C:** Protection of residential properties, roads, amenities and infrastructure at risk from flooding at Combe Martin. Protection of these assets will benefit the tourism industry.	**Scenario A, B, & C:** protection of community, recreational and amenity facilities from erosion Reduction of beach width along this section of coast due to erosion. **Scenario A, B, & C:** Residential properties, roads, amenities and infrastructure are at risk from flooding at Combe Martin.
Watermouth and Berrynabor	• Between Watermouth and Berrynabor there are several cliff top holiday parks and camping sites which maybe at risk from cliff erosion.	• To avoid loss due to erosion of commercial and economic assets and activities.		**Scenario A:** Protection of the holiday park, caravan site and camp site from flooding at Watermouth Cove. Berrynabor is at risk from fluvial flooding. **Scenario B:** Deterioration of flood defence structures will see the holiday park, caravan site and camp site at risk from flooding. Berrynabor is at risk from fluvial flooding.	**Scenario A:** Protection of the holiday park, caravan site and camp site from flooding at Watermouth Cove. Berrynabor is at risk from fluvial flooding. **Scenario B:** Failure of flood defence structures will see the holiday park, caravan site and camp site at risk from flooding. Berrynabor is at risk from fluvial flooding.	**Scenario A:** Protection of the holiday park, caravan site and camp site from flooding at Watermouth Cove. Berrynabor is at risk from fluvial flooding. **Scenario B:** lack of flood defence structures will see the holiday park, caravan site and camp site at risk from flooding. Berrynabor is at risk from fluvial flooding.

MORTE POINT TO MINEHEAD (Section E)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
			of flooding or erosion. Some properties may become blighted due to the risks.	**Scenario C:** As scenario A.	**Scenario C:** As scenario A.	**Scenario C:** As scenario A.
Lynton & Lynmouth	• Lynmouth is a small port with large marina offering a wide range of tourist activities and has tourism related infrastructure. A cliff railway runs between Lynmouth and Lynton for recreational use. The low-lying parts of Lynmouth are at risk from flooding. • There are beaches at Lee bay - Lynton, Woody Bay, Heddons Mouth and Sillery Sands and Lynmouth which are important local attractions for amenity, bathing and other recreational activities.	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. • To minimise the impact of policies on marine operations and activities.		**Scenario A, B, & C:** protection of residential properties, local and tourist infrastructure from flooding. Erosion risk at Lynmouth port/marina is dependant on the operational life of the port infrastructure. Loss of beach width due to erosion (Sillary Sands). No reduction in width at Lee bay, Lynton, Woody Bay, Heddons Mouth and Lynmouth through erosion.	**Scenario A, B, & C:** protection of residential properties, local and tourist infrastructure from flooding. Erosion risk at Lynmouth port/marina is dependant on the operational life of the port infrastructure. Loss of beach width due to erosion (Sillary Sands). No reduction in width at Lee bay, Lynton, Woody Bay, Heddons Mouth and Lynmouth through erosion.	**Scenario A, B, & C:** protection of residential properties, local and tourist infrastructure from flooding. Erosion risk at Lynmouth port/marina is dependant on the operational life of the port infrastructure. Loss of beach width due to erosion (Sillary Sands). No reduction in width at Lee bay, Lynton, Woody Bay, Heddons Mouth and Lynmouth through erosion.
Porlock, Porlock Weir, Porlockford, West Porlock and Bossington	• Low-lying ground at Porlock, Porlock Weir, Porlockford and Bossington is at risk from flooding. • Landfill site at risk of flooding with potential to cause contamination • Small harbour and beach at Porlock Weir (recommended by the Marine Conservation Society). The beach and wider bay is an important local attraction.	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. • **To achieve compliance with Water Framework Directive objectives.** • **To prevent pollution from contaminated sources.**		**Scenario A, B, & C:** Protection of residential properties, tourist and local infrastructure at Porlock Weir, Porlock, Allerton and Bossington. In addition, the risk of flooding at the landfill site will be reduced. **Scenario A:** Erosion of the gravel barrier is not predicted to impact on local infrastructure. Secondary defences will reduce the risk of flooding of residential properties, tourist and local infrastructure at Porlock Weir, Porlock, Allerton and Bossington. The Quay at Porlock Weir is unlikely to experience substantial erosion in this epoch. This is also to the case of the beach. It is unlikely to experience substantial rollback in this epoch. **Scenario B (7d17):** Erosion of the gravel barrier is not predicted to impact on local infrastructure. The lack of secondary flood defence will see an increase the flood risk to Porlock Weir, Porlock, Allerton and Bossington. The Quay at Porlock Weir is	**Scenario A:** Protection of residential properties, tourist and local infrastructure at Porlock Weir, Porlock, Allerton and Bossington. In addition, the risk of flooding at the landfill site will be reduced. **Scenario B :** Overall reduction in flood protection to residential properties, tourist and local infrastructure at Porlock Weir, Porlock, Allerton and Bossington. **Scenario C:** As scenario C. **Scenario A (7d17):** Erosion of the gravel barrier is not predicted to impact on local infrastructure. Secondary defences will reduce the risk of flooding of residential properties, tourist and local infrastructure at Porlock Weir, Porlock, Allerton and Bossington. The Quay at Porlock Weir is unlikely to experience substantial erosion in this epoch. This is also to the case of the beach. It is unlikely to experience substantial rollback in this epoch. **Scenario B (7d17):** Erosion of the gravel barrier is not predicted to impact on local infrastructure. The lack of secondary flood defence will see an increase the	**Scenario A:** Protection of residential properties, tourist and local infrastructure at Porlock Weir, Porlock, Allerton and Bossington. In addition, the risk of flooding the landfill site will be reduced. **Scenario B (7d16):** overall reduction in flood protection to residential properties, tourist and local infrastructure at Porlock Weir, Porlock, Allerton and Bossington. **Scenario C (7d16):** As scenario C. **Scenario A (7d17):** Erosion of the gravel barrier is not predicted to impact on local infrastructure. Secondary defences will reduce the risk of flooding of residential properties, tourist and local infrastructure at Porlock Weir, Porlock, Allerton and Bossington. The Quay at Porlock Weir is will erode in this epoch. This is also to the case of the beach. **Scenario B (7d17):** Erosion of the gravel barrier is not predicted to impact on local infrastructure. The lack of secondary flood defence will see an increase the

MORTE POINT TO MINEHEAD (Section E)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
				unlikely to experience substantial erosion in this epoch. This is also to the case of the beach. IT is unlikely to experience substantial rollback in this epoch. **Scenario C (7d17):** As scenario A.	flood risk to Porlock Weir, Porlock, Allerton and Bossington. The Quay at Porlock Weir is unlikely to experience substantial erosion in this epoch. This is also to the case of the beach. IT is unlikely to experience substantial rollback in this epoch. **Scenario C (7d17): A**s scenario A.	flood risk to Porlock Weir, Porlock, Allerton and Bossington. The Quay at Porlock Weir is will erode in this epoch. This is also to the case of the beach. **Scenario C (7d17):** As scenario A.
Minehead (West of Harbour)	• The western side of Minehead towards Higher Town is on high ground and not at risk from flooding. (This is not the case to the east of Minehead - Section F). However, Quay Street and the Lifeboat station are at risk from flooding. • The A39 west of Minehead withstands flood risk. (This is not the case to the east of Minehead - Section F).	• To manage risk of flooding to people and property. • To ensure critical road and rail linkages are maintained.		**Scenario A, B, & C:** Reduced risk of flooding at Quay Street and the Lifeboat station.	**Scenario A, B, & C:** Protection of the road at Quay Street from erosion. Reduced risk of flooding at Quay Street and the Lifeboat station.	**Scenario A, B, & C:** Protection of the road at Quay Street, lock infrastructure, pipeline and harbour infrastructure from erosion. Reduced risk of flooding at Quay Street and the Lifeboat station.
Critical infrastructure	• There are numerous substations and power lines along the coast that are at risk of flooding as sea levels rise which could leave wider areas than the coast without power	• To ensure critical services remain operational		**Scenario A, B, & C:** reduced risk of flooding at two substations in Minehead.	**Scenario A, B, & C:** reduced risk of flooding at two substations in Minehead.	**Scenario A, B, & C:** reduced risk of flooding at two substations in Minehead.
South West Coast Path	• South West Coast Path runs along this entire stretch of coastline and may be susceptible to erosion, although if this occurs it will be relocated inland. It is also likely to be flooded where it passes low-lying areas.	• To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities.		**Scenario A, B, & C:** Loss or damage to sections of the South West Coastal Path due to Flooding	**Scenario A, B, & C:** Loss or damage to sections of the South West Coastal Path due to Flooding	**Scenario A, B, & C:** Loss or damage to sections of the South West Coastal Path due to Flooding
Exmoor National Park	• The aim of the park is to conserve and enhance the natural beauty, wildlife and historic environment of the National Park and promote opportunities for the understanding and enjoyment of the Park by the public.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C: (7d16):** Protection of land at risk from flooding at Porlock and surrounding areas. **Scenario A, B & C (7d17):** Erosion of the gravel barrier will slightly reduce the area of Exmoor National Park.	**Scenario A (7d16):** Protection of land at risk from flooding at Porlock and surrounding areas. **Scenario B (7d16):** Overall reduction in flood protection at Porlock and surrounding area. **Scenario C (7d16):** As scenario C. **Scenario A, B & C (7d17):** Erosion of the gravel barrier will slightly reduce the area of Exmoor National Park.	**Scenario A (7d16):** Protection of land at risk from flooding at Porlock and surrounding areas. **Scenario B (7d16):** Overall reduction in flood protection at Porlock and surrounding area. **Scenario C (7d16):** As scenario C. **Scenario A, B & C (7d17):** Erosion of the gravel barrier will slightly reduce the area of Exmoor National Park.
North Devon AONB and Exmoor Heritage Coast	• These areas are designated for their rich landscape which encompasses landscape, people and nature. The AONB and Heritage Coast aims to conserve the best qualities of the landscape by helping to guide and manage change.	• To avoid conflict with AONB and Heritage Coast Management Plan Objectives.		**Scenario A, B, & C:** Potential changes in landscape value of the North Devon AONB and Heritage Coast through increased erosion.	**Scenario A, B, & C:** Potential changes in landscape value of the North Devon AONB and Heritage Coast through increased erosion.	**Scenario A, B, & C:** Potential changes in landscape value of the North Devon AONB and Heritage Coast through increased erosion. All sections. Heritage Coast Potential changes in landscape

MORTE POINT TO MINEHEAD (Section E)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
						through increased erosion.
Exmoor Heath and Coast SAC	• Designated for its blanket bogs; alkaline fens; European dry heaths; Northern Atlantic wet heaths with *Erica tetralix*; old sessile oak woods with *Ilex* and *Blechum*; and vegetated sea cliffs.	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** No predicted changes in conservation value of the Exmoor Heath and Coast SAC due to flooding or erosion.	**Scenario A, B, & C:** No predicted changes in conservation value of the Exmoor Heath and Coast SAC due to flooding or erosion.	**Scenario A, B, & C:** potential changes in conservation value of the Exmoor Heath SAC's vegetated sea cliffs. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Exmoor Coastal Heaths SSSI	• Designated for its extensive heathland communities, woodland, scrub, acidic and maritime grassland and the important butterfly and bird species it supports.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C:** No predicted changes in conservation value of the Exmoor Coastal Heaths SSSI due to flooding.	**Scenario A, B, & C:** No predicted changes in conservation value of the Exmoor Coastal Heaths SSSI due to flooding.	**Scenario A, B, & C:** Minor losses of designated features in low lying areas. No predicted changes in nature conservation value of the Exmoor Coastal Heaths SSSI due to flooding.
Morte Point SSSI	• Designated for its maritime heath, coastal cliffs foreshore habitats and geological exposures of Upper Devonian Rocks.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.** • **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Morte Point SSSI. NAI will continue to maintain these geological features.	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Morte Point SSSI. NAI will continue to maintain these geological features.	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Morte Point SSSI. NAI will continue to maintain these geological features.
Hele Samsons and Combe Martin Bay SSSI (Geological)	• Designated for its exposures of Middle Devonian Ilfracombe beds, consisting of sandstone, mudstone and occasional limestone with fossils.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.** • **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Hele Samsons and Combe Martin Bay SSSI. NAI will continue to maintain these geological features.	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Hele Samsons and Combe Martin Bay SSSI. NAI will continue to maintain these geological features.	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Hele Samsons and Combe Martin Bay SSSI. The NAI will continue to maintain these geological features.
Napps Cave SSSI	• This cave is designated due to its size and abundance of agonite crystals as well as its inhabitants of greater and lesser horseshoe bats.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.** • **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Napps Cave SSSI. NAI will continue to maintain these geological features.	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Napps Cave SSSI. NAI will continue to maintain these geological features.	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Napps Cave SSSI. NAI will continue to maintain these geological features.
West Exmoor Coast and Woods SSSI	• Designated for its ancient sessile oak woodlands; maritime plant communities; rich bird population; and geological and geomorphological features of interest.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.** • **To allow natural processes and maintain visibility of geological exposures throughout geological SSSIs.**		**Scenario A, B, & C:** No predicted changes in conservation value of West Exmoor Coast and Woods SSSI due to flooding	**Scenario A, B, & C:** No predicted changes in conservation value of West Exmoor Coast and Woods SSSI due to flooding	**Scenario A, B, & C:** Potential changes in conservation value of West Exmoor Coast and Woods SSSI from erosion. Continuation of natural processes is key to the integrity of the SSSI. The NAI will continue to maintain these geological features.
Porlock Ridge and Saltmarsh SSSI	• Designated for its saltmarsh, extensive shingle ridge which is undergoing geomorphological change and the overwintering and migratory birds. The marsh behind the ridge is susceptible to	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.** • **To allow natural processes and maintain**		**Scenario A:** The gravel ridge will continue to roll back, however secondary defences limit this geomorphologic change.	**Scenario A:** The gravel ridge will continue to roll back, however secondary defences limit this geomorphologic change.	**Scenario A:** The gravel ridge will continue to roll back, however secondary defences limit this geomorphologic change.

MORTE POINT TO MINEHEAD (Section E)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
	inundation as the ridge is decreasing in width and rolling back. Over time although it is beneficial to create intertidal habitats, there will be an adverse effect on freshwater plant species present in the marsh area.	**visibility of geological exposures throughout geological SSSIs.**		**Scenario B:** The gravel ridge will roll back unabated. This will increase the spatial extent of the SSSI's designated saltmarsh. This will result in conservation changes as saline inundation affects freshwater plants. **Scenario C:** As scenario A.	**Scenario B:** The gravel ridge will roll back unabated. This will increase the spatial extent of the SSSI's designated. This will result in conservation changes as saline inundation effects freshwater plants. **Scenario C:** As scenario A.	**Scenario B:** The gravel ridge will roll back unabated. This will increase the spatial extent of the SSSI's designated. This will result in conservation changes as saline inundation effects freshwater plants. **Scenario C:** As scenario A.
The Dunkery and Horner Wood NNR	• Designated for its ancient oak woodlands supporting noteworthy birds, bats and plants; and for its range of heathland habitats supporting noteworthy invertebrates, birds and plants.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C:** No predicted changes in conservation value of the Dunkery and Horner Wood NNR due to flooding	**Scenario A, B, & C:** No predicted changes in conservation value of the Dunkery and Horner Wood NNR due to flooding	**Scenario A, B, & C:** No predicted changes in conservation value of the Dunkery and Horner Wood NNR due to flooding
Hilsborough LNR	• This LNR is located on high ground near Ilfracombe, but its net area and key features may be at risk from cliff erosion.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenario A, B, & C:** Not at risk from erosion or flooding.	**Scenario A, B, & C:** Not at risk from erosion or flooding. .	**Scenario A, B, & C:** A reduction in the total area of the LNR due to erosion. Not at risk from erosion or flooding. .
County Wildlife Sites	• There are 49 County Wildlife Sites and one LNR within this section of coast; those located directly on the coastline may be at risk from erosion and areas that are low-lying are likely to be at risk from flooding.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenario A:** CWS sites at Hawk Combe, Holnicote and Bossington Wood are at risk from flooding depending on the positioning of the secondary defences. **Scenario B:** CWS sites at Hawk Combe, Holnicote and Bossington Wood are at risk from flooding. **Scenario C:** As scenario A.	**Scenario A:** CWS sites at Hawk Combe, Holnicote and Bossington Wood are at risk from flooding depending on the positioning of the secondary defences. **Scenario B:** CWS sites at Hawk Combe, Holnicote and Bossington Wood are at risk from flooding. **Scenario C:** As scenario A.	**Scenario A:** CWS sites at Hawk Combe, Holnicote and Bossington Wood are at risk from flooding depending on the positioning of the secondary defences. **Scenario B:** CWS sites at Hawk Combe, Holnicote and Bossington Wood are at risk from flooding. **Scenario C:** As scenario A. A reduction in area of a number of low laying CWSs due to erosion.
Regionally Important Geological Site (RIGS)	• There are 7 RIGS within this section of coast designated for their geological exposures or coastal geomorphology and due to increased sea levels are likely to change over time due to increased wave action causing erosion.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenario A, B, & C:** The RIGs will not experience any increase erosion during this epoch and no new exposures.	**Scenario A, B, & C:** The RIGs will not experience any increase erosion during this epoch and no new exposures.	**Scenario A, B, & C:** The RIGs will not experience any increase erosion during this epoch and no new exposures.
North Devon AONB and Heritage Coast	• The area is designated for its rich landscape which encompasses landscape, people and nature. The AONB and Heritage Coast aims to conserve the best qualities of the landscape by helping to guide and manage change.	• To avoid conflict with AONB Management Plan Objectives.		**Scenario A, B, & C:** Potential changes in landscape through increased erosion within the North Devon AONB and Heritage Coast	**Scenario A, B, & C:** Potential changes in landscape through increased erosion within the North Devon AONB and Heritage Coast	**Scenario A, B, & C:** Potential changes in landscape within North Devon AONB through increased erosion. All sections. Heritage Coast Potential changes in landscape through increased erosion.
Historic	• There are 12 Conservation Areas	• To avoid adverse impacts on scheduled and		**Scenario A, B, & C:** Protection	**Scenario A, B, & C:** Protection of	**Scenario A, B, & C:** Protection

MORTE POINT TO MINEHEAD (Section E)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
environments	including: Morte Hoe, Lee, Ilfracombe Combe Martin, Berrynabor, Lynton, Lynmouth, Porlock, Lynch, Minehead Selworthy and Allerford. Low-lying heritage sites are likely to be at risk of flooding. • There are 17 Scheduled Monuments where these are located within low-lying areas they are at risk from flooding. • There is a number of Listed Buildings and archaeological sites along this stretch at risk from flooding. • This stretch of coast includes 5 Registered Parks and Gardens including St Audries, Arlington Court, Nettlecombe Court and Crowcombe Court. As these are on relatively high ground they are not susceptible to flooding.	other nationally, regionally and locally important historic environment sites.		of the Conservation Areas at Ilfracombe, Lynton, Porlock, Bossington and Minehead due to flooding. Under Scenario B Bossington would be at risk of flooding due to the lack of secondary defences. None of the Schedule Monuments or Registered Parks and Gardens listed are at risk from flooding or erosion. **Scenario A, B, & C:** Protection of Listed Buildings at Lee, Lynton and Porlock.	the Conservation Areas at Ilfracombe, Lynton, Porlock, Bossington and Minehead due to flooding. Under Scenario B Bossington would be at risk of flooding due to the lack of secondary defences. None of the Schedule Monuments or Registered Parks and Gardens listed are at risk from flooding or erosion. **Scenario A, B, & C:** Protection of Listed Buildings at Minehead. Listed Buildings are protected at Lee, Lynton and Porlock under scenario A and C but not under B, where NAI may see potential damage to the Listed Buildings.	of the Conservation Areas at Ilfracombe, Lynton, Porlock, Bossington and Minehead due to flooding. Under Scenario B Bossington would be at risk of flooding due to the lack of secondary defences. None of the Schedule Monuments or Registered Parks and Gardens listed are at risk from flooding or erosion. **Scenario A, B & C:** Potential partial loss of 2 Schedule Monuments comprising Hillborough Fort and Wind Hill. **Scenario A, B, & C:** Protection of Listed Buildings at Minehead. Listed Buildings are protected at Lee, Lynton and Porlock under scenario A and C but not under B, where NAI may see potential damage to the Listed Buildings.
Agricultural land	The land is generally low grade (4 to 5) and therefore is not considered for policy setting, although there is a small area west of Ilfracombe that is Grade 2 land which may be at risk from erosion to be considered.	• To avoid loss due to erosion of and/or manage risk of flooding to agricultural land (Grade 3 and above).		**Scenario A, B, & C:** No loss of Grade 3 or above agricultural land except at Porlock.	**Scenario A, B, & C:** No loss of Grade 3 or above agricultural land except at Porlock.	**Scenario A, B, & C:** No loss of Grade 3 or above agricultural land except at Porlock.

MINEHEAD TO HINKLEY POINT (Section F)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Minehead (east of Harbour)	• Eastern parts of the town, including residential and commercial properties; tourist attractions including the holiday park and Minehead and West Somerset Golf Club, are at risk of flooding. This is in part related to the risk of flooding from the low-lying land to the east of Minehead at Dunster. • Beach at Minehead Terminus is recommended by the Marine Conservation Society. There is also a beach on The Strand at Minehead, both are important attractions for residents and visitors. • Minehead has harbour infrastructure. • West Somerset railway is important infrastructure defended in part by a sea	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. • To ensure critical road and rail linkages are maintained. To minimise the impact of policies on marine operations and activities	Minehead to Hinkley Point includes Blue Anchor bay and the western fringe of Bridgwater Bay and the Severn Estuary. The coastline is undulating with both cliffed and low-lying sections. Most of this coastline is undefended, although several areas along this section have groynes and seawalls including: Minehead, Dunster, Blue Anchor, Watchet, Lilstock, Doniford and Hinkley Point. Other structures associated with harbour development also provide some defence. All interfere with potential sediment transport pathways along the shoreline. This section of coast has nationally	**Scenario A, B, & C:** protection of residential properties, roads, railways (and railway facilities) amenities and infrastructure, including tourist infrastructure, from flooding. There will be a reduction in the spatial extent of the beaches at Minehead Terminus and The Strand through coastal squeeze. The harbour is not at risk from erosion in this epoch. The spatial extent of the West Somerset Golf Club is at risk due to erosion. In addition it is at risk from flooding.	**Scenario A, B, & C:** protection of residential properties, roads, railways (and railway facilities) amenities and infrastructure, including tourist infrastructure, from flooding. Protection of the esplanade and slipway at Minehead from erosion. There will be a reduction in the spatial extent of the beaches at Minehead Terminus and The Strand through coastal squeeze. The harbour is not at risk from erosion in this epoch. The spatial extent of the West Somerset Golf Club is at risk due	**Scenario A, B, & C:** protection of residential properties, roads, railways (and railway facilities) amenities and infrastructure including tourist infrastructure from flooding. Protection of harbour assets, place of worship, section of Quay street, the esplanade, slipway and a number of properties on the seafront. from erosion. There will be a reduction in the spatial extent of the beaches at Minehead Terminus and The Strand through coastal squeeze. The spatial extent of the West

MINEHEAD TO HINKLEY POINT (Section F)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B & C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
	wall along Blue Anchor although it is susceptible to flooding where there is low-lying ground. Flooding is likely to affect several stations including: Dunster, Blue Anchor, Doniford Halt and Watchet. • Several holiday parks located on low lying ground on the coast are at risk of flooding • The A39 is a major link road providing access to Minehead and along the north coast; and this is at risk from flooding in low-lying areas. The West Somerset Coast Path follows the coastline from Steart village to Minehead where it joins the start of the South West Coast Path and is at risk of flooding and erosion, although it is likely to be re-routed as required.		important geological features therefore improvements to coastal defence e.g. Blue Anchor may pose a threat to these features. Between Minehead and Blue Anchor are low-lying areas of former saltmarsh that have developed following enclosure by a gravel storm ridge. This ridge is eroding and rolling back and the low-lying land behind is susceptible to flooding, although this would be beneficial for habitat creation, this has to be considered alongside potential flood risk to the eastern side of Minehead. Between Warren Point and Dunster the ridge is backed by dunes that formed prior to the development of the pebble ridge and these are likely to prevent the complete breakdown of the ridge in this area if the ridge is breached.	**Scenario A, B, & C:** Protection of the West Somerset Coastal Path from flooding along low-lying sections of this coast with the exception of Dunster Beach (east) to Ker moor where scenarios A and B call for MR.	to erosion. In addition it is at risk from flooding. **Scenario A, B, & C:** Protection of the West Somerset Coastal Path from flooding along low-lying sections of this coast with the exception of Dunster Beach and the Warren at Minehead where scenarios A and B call for MR.	Somerset Golf Club is at risk due to erosion. In addition it is at risk from flooding. **Scenario A, B, & C:** Protection of the West Somerset Coastal Path from flooding along low-lying sections of this coast with the exception of Dunster Beach and the Warren at Minehead where scenarios A and B call for MR.
Dunster	• Dunster Beach Holiday park has 230 Chalets on the beach front along one mile which are at risk from erosion and flooding • Beach at Dunster is popular with residents, tourists and users of the chalets. Several residential and commercial properties on low-lying ground behind Dunster beach which are at risk of flooding	• To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. To avoid loss of property due to erosion and/or manage risk of flooding to people and property.	The beach at Minehead was recharged in 1998; it is more or less stable with a slight tendency towards erosion, whereas the beach at Blue Anchor is relatively stable. Any work on defences may affect natural sources of sediment supply to these beaches which are an important local attraction. There is likely to be narrowing of the intertidal zone as sea levels rise increasing the amount of energy reaching the defences. The eastern side towards Hinkley Point is a part of the Severn Estuary which is an internationally important nature conservation site, which will require consideration during any alterations to improve flood defence.	**Scenario A, B, & C:** protection of residential properties, roads, West Somerset Railway Line (and associated facilities) community and tourist infrastructure from flooding. There will be a reduction in the spatial extent of the beaches at Dunster through coastal squeeze.	**Scenario A & B:** dependent on the location of the secondary defences, residential properties, roads, West Somerset Railway Line (and associated facilities) community and tourist infrastructure, are at risk from flooding. Secondary defence will protection the low lying hinterland from flooding. **Scenario C:** protection of residential properties, roads, West Somerset Railway Line (and associated facilities) community and tourist infrastructure from flooding. There will be a reduction in the spatial extent of the beaches at Dunster through coastal squeeze.	**Scenario A & B:** dependent on the location of the secondary defences, residential properties, roads, West Somerset Railway Line (and associated facilities) community and tourist infrastructure, are at risk from flooding. Secondary defence will protection the low lying hinterland from flooding. **Scenario C:** protection of residential properties, roads, West Somerset Railway Line (and associated facilities) community and tourist infrastructure from flooding. There will be a reduction in the spatial extent of the beaches at Dunster through coastal squeeze.
Blue Anchor	• Several residential and commercial properties on low-lying ground behind the sea wall along Blue Anchor • The B3191road at Blue Anchor is protected by a sea defence wall but is at risk of flooding with sea level rise • Beach at Blue Anchor West is popular with residents and tourists. Hotel at Blue Anchor is at risk from erosion, part of the garden has eroded significantly due to the dilapidated state of the sea defences.	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities.	Hinkley Point Power Station must be retained in situ for the life of the Strategy. This is likely to require further investment in coastal defences, which will impact on the geology and landscape of the shoreline. The site has been identified as a likely location new nuclear build. Potentially, residents in coastal areas of low- lying ground or on cliffs susceptible to erosion may experience effects of sea	**Scenario A, B, & C:** protection of residential properties, roads, West Somerset Railway Line (and associated facilities), community and tourist infrastructure from flooding. Protection of the gardens of the Blue Anchor Hotel from erosion. No reduction in spatial extent of the beach at Blue Anchor in this epoch.	**Scenario A, B, & C:** protection of residential properties, roads, West Somerset Railway Line (and associated facilities) community and tourist infrastructure from flooding. Protection of small sections of the B3191 and gardens of the Blue Anchor Hotel from erosion. There will be a reduction in the	**Scenario A, B:** residential properties, roads, West Somerset Railway Line (and associated facilities) community and tourist infrastructure are at risk from flooding. Loss sections of the B3191 and gardens of the Blue Anchor Hotel due to erosion. **Scenario C:** protection of

MINEHEAD TO HINKLEY POINT (Section F)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B & C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
			level rise and increased frequency of flooding and erosion over the next 100 years and if the risk is perceived high enough people may choose to move inland, devaluing coastal properties at risk of flooding or erosion. Some properties may become blighted due to the risks. This also has implications for the businesses that are reliant on coastal locations, such as tourism. Safety procedures will require implementation to protect loss of life from flooding and erosion.		spatial extent of the beaches at Blue Anchor through coastal squeeze.	residential properties, roads, West Somerset Railway Line (and associated facilities) community and tourist infrastructure from flooding. Protection of small sections of the B3191 and gardens of the Blue Anchor Hotel from erosion. There will be a reduction in the spatial extent of the beaches at Blue Anchor through coastal squeeze.
Watchet	• Several properties on the sea defence wall and the new development at East the Wharf are at risk of flooding. • Several cliff top properties at risk of erosion. • Camp site at Warren Bay may be susceptible to erosion and a net loss of land. • Beaches at Watchet and Lilstock are important resident and visitor attractions. • Watchet has harbour infrastructure, and supports the Watchet Sailing and Yacht Club. The West Somerset Railway Line is in close proximity to the coast and is susceptible to flooding and erosion. The railway station is set back from the defences but may be at risk of flooding as sea levels rise.	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities.		**Scenario A, B, & C:** protection of harbour infrastructure from erosion. Reduction in beach width at Watchet and Lilstock due to erosion. Properties in Watchet are at risk from fluvial flooding. The camp site at Warren Bay is not at risk from erosion. The West Somerset railway line is not at risk from flooding or erosion in this epoch	**Scenario A, B, & C:** protection of harbour infrastructure, place of worship, and a museum from erosion. In addition, the coastal defences would protect a small number of commercial and residential properties from erosion. Reduction in beach width at Watchet and Lilstock due to erosion. Properties in Watchet are at risk from fluvial flooding. The camp site at Warren Bay is not at risk from erosion. The West Somerset railway line is not at risk from flooding or erosion in this epoch	**Scenario A, B, & C:** protection of harbour infrastructure, sections of allotment gardens, place of worship, a museum, and small section of the West Somerset Railway from erosion. A number of commercial and residential properties will also be protected from erosion. Reduction in beach width at Watchet and Lilstock due to erosion. Properties in Watchet are at risk from fluvial flooding. The camp site at Warren Bay is not at risk from erosion.
Doniford	Doniford Holiday Park providing tourist facilities is at risk of erosion	To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities.		**Scenario A:** Protection of holiday park infrastructure from outflanking of localised defence structures and return to historic erosion rates as defences downstream fail. **Scenario B:** Loss of holiday park infrastructure from outflanking of localised defence structures and return to historic erosion rates as defence downstream fail. **Scenario C:** As scenario A.	**Scenario A:** Protection of holiday park infrastructure from outflanking of localised defence structures and return to historic erosion rates as defences downstream fail. **Scenario B:** Loss of holiday park infrastructure from outflanking of localised defence structures and return to historic erosion rates as defence downstream fail. **Scenario C:** As scenario A.	**Scenario A:** Protection of holiday park infrastructure from outflanking of localised defence structures and return to historic erosion rates as defences downstream fail. **Scenario B:** Loss of holiday park infrastructure from outflanking of localised defence structures and return to historic erosion rates as defence downstream fail. **Scenario C:** As scenario A.
Hinkley Point Power Station	There are two power stations at Hinkley Point (one is being decommissioned and the	To ensure critical services remain operational.		**Scenario A, B, & C:** protection of the power station from minor	**Scenario A, B, & C:** protection of the Power station and outfall pipes	**Scenario A, B, & C:** protection of the Power station and outfall

MINEHEAD TO HINKLEY POINT (Section F)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
	other is operational) and there are proposals for one or more new reactors. These power stations are an important strategic power supply and although this area is defended by a seawall and rock armour this area is susceptible to flooding with sea level rise, as are the pylons that connect the power station to the national grid.			erosion on the western edge of the site.	from erosion on the western edge of the site.	pipes from erosion on the western edge of the site.
Critical infrastructure	There are numerous substations and power lines along the coast that are at risk of flooding as sea levels rise which could leave wider areas than the coast without power	To ensure critical services remain operational		**Scenario A, B, & C:** protection of two substations at Watchet from flooding.	**Scenario A, B, & C:** protection of two substations at Watchet from flooding.	**Scenario A, B, & C:** protection of two substations at Watchet from flooding.
Severn Estuary Ramsar	• This designation includes the extensive variety of estuary habitats, communities and noteworthy populations of invertebrates, fish, over wintering and migratory birds. It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat which will have to be compensated.	**To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary Ramsar site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary Ramsar site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary Ramsar site. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Severn Estuary SPA	• This designation includes the internationally and nationally important populations of breeding, migratory and overwintering waders and water fowl using the Severn estuary. It is likely over time that the net area and distribution of the intertidal habitats that are crucial to supporting the internationally and nationally important populations of migratory, breeding and overwintering birds will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat which will have to be compensated to ensure the important bird populations are supported.	**To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SPA site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SPA site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SPA site. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Severn Estuary SAC	• Designated habitats include: estuaries; mudflats and sandflats not covered by seawater at low tide; Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*; sandbanks which are slightly covered by seawater all the time; and reefs.	**To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise

MINEHEAD TO HINKLEY POINT (Section F)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
	• Designated species include: sea lamprey *Petromyzon marinus;* river lamprey *Lampetra fluviatilis* and Twaite shad *Alosa fallax.* It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat which will have to be compensated.			rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SAC site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SAC site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SAC site. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Exmoor and Quantocks Oak Woods SAC	• Designated for old sessile oak woods with *Ilex* and *Blechnum* in the British Isles; and alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicon albae*). Designated species includes: Barbastelle *Barbestella barbestella*, Bechstein's bat *Myotis bechsteinii* and otter *Lutra lutra*	**To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** The Exmoor and Quantocks Oak Woods SAC is not risk from flooding or erosion.	**Scenario A, B, & C:** The Exmoor and Quantocks Oak Woods SAC is not risk from flooding or erosion.	**Scenario A, B, & C:** The Exmoor and Quantocks Oak Woods SAC is not risk from flooding or erosion.
Dunster Park and Heathlands SSSI	Designated for its lowland dry heath; dry lowland acid grassland; wood-pasture with veteran trees and black polar *Populus nigra;* and ancient semi-natural woodland; supporting invertebrates and birds. Areas of low-lying ground are susceptible to flooding with sea level rise.	**To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C:** Dunster Park and Heathlands is not risk from flooding or erosion.	**Scenario A, B, & C:** Dunster Park and Heathlands is not risk from flooding or erosion.	**Scenario A, B, & C:** Dunster Park and Heathlands is not risk from flooding or erosion.
Blue Anchor to Lilstock Coast SSSI	Notable for its geology and geomorphology. Geologically it is one of the thickest successions of the Jurassic period and is probably the best in North West Europe.	**To allow natural processes and maintain visibility of geological exposures throughout geological Sites of Special Scientific Interest (SSSIs)**		**Scenario A:** At Blue Anchor, Watchet to St Audries Bay (in localised areas) and Lilstock defences limit natural processes which are key to the integrity of the Blue Anchor to Lilstock Coast SSSI. At Blue Anchor to Watchet and St Audries Bay to Lilstock NAI will continue to maintain the geological features. **Scenario B:** At Blue Anchor, Watchet to Doniford (in localised areas) and Lilstock defences limit natural processes which are key to the integrity of the Blue Anchor to Lilstock Coast SSSI. At Blue Anchor to Watchet and Doniford to Lilstock NAI will continue to maintain the geological features. **Scenario C:** As scenario A	**Scenario A:** At Blue Anchor and Watchet to St Audries Bay (in localised areas) defences limit natural processes which are key to the integrity of the Blue Anchor to Lilstock Coast SSSI. At Blue Anchor to Watchet and St Audries Bay to Lilstock NAI will continue to maintain the geological features . **Scenario B:** At Blue Anchor, Watchet to Doniford (in localised areas) and Lilstock defences limit natural processes which are key to the integrity of the Blue Anchor to Lilstock Coast SSSI. At Blue Anchor to Watchet and Doniford to Lilstock NAI will continue to maintain the geological features. **Scenario C:** As scenario A	**Scenario A:** At Blue Anchor and Watchet to St Audries Bay (in localised areas) defences limit natural processes which are key to the integrity of the Blue Anchor to Lilstock Coast SSSI. At Blue Anchor to Watchet and St Audries Bay to Lilstock NAI will continue to maintain the geological features. **Scenario B:** At Blue Anchor, Watchet to Doniford (in localised areas) and Lilstock defences limit natural processes which are key to the integrity of the Blue Anchor to Lilstock Coast SSSI. At Blue Anchor to Watchet and Doniford to Lilstock NAI will continue to maintain the geological features. **Scenario C:** As scenario A
Bridgwater Bay SSSI and NNR	Designated for its succession of coastal habitats and the internationally and nationally	**To avoid adverse impacts on, conserve and where practical enhance the designated interest**		**Scenario A, B, & C:** The Bridgwater Bay SSSI and NNR is	**Scenario A, B, & C:** The Bridgwater Bay SSSI and NNR is at	**Scenario A, B, & C:** The Bridgwater Bay SSSI and NNR is

MINEHEAD TO HINKLEY POINT (Section F)						
Location/ feature	Key issues	Objectives that apply	Key Considerations	Assessment of Scenarios A, B & C		
				Short term (to 2025)	Medium term (to 2055)	Long term (to 2015)
(biological and geological)	important numbers of over wintering, passage and migrant waders and waterfowl.	**of nationally designated conservation sites.**		at risk from flooding and coastal squeeze through erosion and there is may be a predicted change in nature conservation value. The SSSI is at risk from flooding however, there is no predicted change in conservation value.	risk from flooding and coastal squeeze through erosion and there is may be a predicted change in nature conservation value. The SSSI is at risk from flooding however, there is no predicted change in conservation value.	at risk from flooding and coastal squeeze through erosion and there is may be a predicted change in nature conservation value. The SSSI is at risk from flooding however, there is no predicted change in conservation value.
Quantocks SSSI	Designated for its extensive dry dwarf shrub heath, wet dwarf shrub heath acidic flushes, ancient semi natural woodland and dense scrub.	**To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C:** The Quantocks SSSI is at risk from flooding. Potential change in conservation value through saline intrusion altering the habitat composition.	**Scenario A, B, & C:** The Quantocks SSSI is at risk from flooding. Potential change in conservation value through saline intrusion altering the habitat composition.	**Scenario A, B, & C:** The Quantocks SSSI is at risk from flooding. Potential change in conservation value through saline intrusion altering the habitat composition.
County Wildlife Sites	There are 29 CWSs, where located on low-lying ground they are susceptible to flooding	To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenario A, B & C:** Reduction in spatial extent of the CWS at the Blue Anchor Hotel Field, Cridlands Corpse, Blue Anchor to Lilstock Cliff and Hinkley Point from erosion. Protection of sections at the CWS at Blue Anchor to Lilstock Cliffs and Hinkley from erosion.	**Scenario A, B & C:** Reduction in spatial extent of the CWS at the Blue Anchor Hotel Field, Cridlands Corpse, Blue Anchor to Lilstock Cliff and Hinkley Point from erosion. Protection of sections at the CWS at Blue Anchor to Lilstock Cliffs and Hinkley from erosion.	**Scenario A, B & C:** Reduction in spatial extent of the CWS at the Blue Anchor Hotel Field, Cridlands Corpse, Blue Anchor to Lilstock Cliff and Hinkley Point from erosion. Protection of sections at the CWS at Blue Anchor to Lilstock Cliffs and Hinkley from erosion.
West Somerset Golf Course wildlife importance	The golf course is founded on relict sand dunes and has habitats and species that qualify as features for SSSI status.			**Scenario A, B & C:** Potential damage to the golf course due to flooding. Potential damage habitat and species through saline intrusion.	**Scenario A, B & C:** Potential damage to the golf course due to flooding. Potential damage habitat and species through saline intrusion.	**Scenario A, B & C:** Potential damage to the golf course due to flooding. Potential damage habitat and species through saline intrusion.
Quantocks Hills AONB	The area is designated for its rich landscape which encompasses landscape, people and nature. The AONB aims to conserve the best qualities of the landscape by helping to guide and manage change.	To avoid conflict with AONB Management Plan objectives.		**Scenario A, B & C:** No change to landscape. No defence structures and cliff will erode slowly revealing similar exposures.	**Scenario A, B & C:** No change to landscape. No defence structures and cliff will erode slowly revealing similar exposures.	**Scenario A, B & C:** No change to landscape. No defence structures and cliff will erode slowly revealing similar exposures.
Historic environments	• There are 7 areas Conservation Areas including Minehead, Alcombe, Dunster, Old Cleeve, Watchet, Holford and Stogursey. Of which Watchet, Dunster and Minehead may be at risk of flooding. • There are 16 Scheduled Monuments, some are located on relatively low-lying ground and are susceptible to flooding. There are three Registered Parks and Gardens including Dunster Castle, Halswell Park and Fairfield. With the exception of Dunster Castle these are located on relatively low-lying ground and are susceptible to flooding.	To avoid adverse impacts on scheduled and other nationally, regionally and locally important historic environment sites.		**Scenario A, B & C:** protection of the Conservation Areas at Dunster, Watchet and Dunster Castle from flooding. None of the Schedule Monuments or Registered Parks and Gardens present along this section of coast are at risk from erosion.	**Scenario A, B & C:** protection of the Conservation Areas at Watchet from flooding. Loss of a small section of the Registered Parks and Gardens at St Audries due to erosion. **Scenario A and B:** Potential damage to the Conservation Areas at Dunster and Dunster Castle from flooding. None of the Schedule Monuments present along this section of coast are at risk from erosion. **Scenario C:** protection of the	**Scenario A, B & C:** protection of the Conservation Areas at Watchet from flooding. Loss of a small sections of the Registered Parks and Gardens at St Audries due to erosion. **Scenario A and B:** Potential damage to the Conservation Areas at Dunster and Dunster Castle from flooding. None of the Schedule Monuments present along this section of coast are at risk from erosion. **Scenario C:** protection of the

MINEHEAD TO HINKLEY POINT (Section F)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B & C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
					Conservation Areas at Dunster, Watchet and Dunster Castle from flooding.	Conservation Areas at Dunster, Watchet and Dunster Castle from flooding.
Agricultural Land	• Predominantly Grade 3 agricultural land which due to its low-lying nature is susceptible to flooding.	To manage risk of flooding to agricultural land (Grade 3 and above).		**Scenario A, B & C:** Loss of varying amounts of Grade 3 agricultural land due to flooding and erosion depending on the scenario. Largest loss experience in scenario B and lowest in scenario C.	**Scenario A, B & C:** Loss of varying amounts of Grade 3 agricultural land due to flooding and erosion depending on the scenario. Largest loss experience in scenario B and lowest in scenario C.	**Scenario A, B & C:** Loss of varying amounts of Grade 3 agricultural land due to flooding and erosion depending on the scenario. Largest loss experience in scenario B and lowest in scenario C.

HINKLEY POINT TO BREAN DOWN (Section G)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Hinkley Point Power Station	• There are two power stations at Hinkley Point (one is being decommissioned and the other is operational) and there are proposals for one or more new reactors. These power stations are/will be an important strategic power supply and although this area is defended by a seawall and rock armour this area is susceptible to flooding with sea level rise, as are the pylons that connect the power station to the national grid.	• To ensure critical services remain operational.	This section of coast between Hinkley Point and Brean Down represents the southern and northern limits of Bridgwater Bay, into which the River Parrett drains. Hinkley Point and Brean Down are geological hard points within an otherwise soft geological area and provide important controls upon the evolution of the bay. This section of coast fronts the extensive low-lying area of the Somerset and Bleadon Levels and is susceptible to flooding as sea levels rise. The flood extent could be as far eastwards as Street affecting critical infrastructure including the A38, A39 and M5. The coast is defended at Burnham-on Sea, Bridgwater (within the Parrett Estuary) and Hinkley Point. There is also a section of defence immediately south of Brean Down. Due to a lack sediment supply to gravel ridges between Stolford and Steart, flood protection has been enhanced with gabions at Wall Common. This maintenance is unsustainable in the long term and therefore a policy of Managed Realignment is currently being developed. Although there will be a potential loss of freshwater/brackish habitats (e.g. coastal grazing marsh) through flooding, the creation of intertidal habitat compensates habitat being lost elsewhere due to coastal squeeze.	**Scenario A, B, & C:** protection of the power station from minor erosion on the western edge of the site.	**Scenario A, B, & C:** protection of the Power station and outfall pipes from erosion on the western edge of the site.	**Scenario A, B, & C:** protection of the Power station and outfall pipes from erosion on the western edge of the site.
Landfill	• There are landfill sites at Hinkley Point that are susceptible to flooding and this may lead to erosion of the landfill.	• **To achieve compliance with Water Framework Directive objectives.** • **To prevent pollution from contaminated sources.**		**Scenario A, B, & C:** The landfill sites at Hinkley Point are not susceptible to erosion or flooding.	**Scenario A, B, & C:** The landfill sites at Hinkley Point are not susceptible to erosion or flooding.	**Scenario A, B, & C:** The landfill sites at Hinkley Point are not susceptible to erosion or flooding.
Burnham-on-Sea and Highbridge	• Burnham-on-Sea is a low-lying residential area and coastal resort fronting a beach, it attracts many visitors and although defended by a wave return wall seawall and gabions it is at risk from flooding. • Burnham-on-Sea and Highbridge have plans to implement 2200 new dwellings by 2026. • Section of the A38 and M5 are at risk of flooding if the defences fail along the coast. • Highbridge and Burnham-on-Sea railway stations and the main railway line to Bristol are at risk of flooding. • Burnham-on-Sea has a motorboat and sailing club.	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. • To ensure critical road and rail linkages are maintained. • To minimise the impact of policies on marine operations and activities		**Scenario A, B, & C:** protection of residential and commercial properties, roads (A38 and M5), Mainline Railway (and associated facilities including the Highbridge and Burnham-on-Sea railway stations), community and tourist infrastructure and the Burnham-on-Sea sailing club are at risk from flooding. The development opportunities planned for Highbridge and Burnham-on-Sea are potentially at risk from flooding depending on its location.	**Scenario A, B, & C:** protection of residential and commercial properties, roads (A38 and M5), Mainline Railway (and associated facilities including the Highbridge and Burnham-on-Sea railway stations), community and tourist infrastructure and the Burnham-on-Sea sailing club are at risk from flooding. The development opportunities planned for Highbridge and Burnham-on-Sea are potentially at risk from flooding depending on its location.	**Scenario A, B, & C:** protection of residential and commercial properties, roads (A38 and M5), Mainline Railway (and associated facilities including the Highbridge and Burnham-on-Sea railway stations), community and tourist infrastructure and the Burnham-on-Sea sailing club are at risk from flooding. Protection of the fronting dunes from minor erosion The development opportunities planned for Highbridge and Burnham-on-Sea are potentially at risk from flooding depending on its location..
Brean and Berrow	• Major holiday park infrastructure including mobile homes, caravans and road covering approximately 5 miles of low lying coastline. It is occupied heavily in the	• To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities.		**Scenario A:** protection of residential and community, recreational and tourist infrastructure (holiday park	**Scenario A &B:** damage or even loss of some residential and community, recreational and tourist infrastructure (holiday park	**Scenario A &B:** damage or even loss of some residential and community, recreational and tourist infrastructure (holiday

HINKLEY POINT TO BREAN DOWN (Section G)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
	summer, and provides an all year round service. This tourist attraction is a significant employer in the area is of importance to the local economy. The area is at risk of flooding from sea level rise and back door flooding from the Axe Estuary. • Dune system provides flood protection to Brean and Berrow, Brean also has hard defences. • The beaches are an important amenity and recreational resource for residents and tourists • The Burnham and Berrow Golf Course is set amongst the sand dunes at Berrow and is a locally important recreational facility for residents and visitors.	• To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities.	The Bridgwater Bay and Severn Estuary areas form an internationally and nationally important nature conservation area. Bridgwater Bay is a sink for fine sediment and mud (Bridgwater Bay mudbelt) which together with saltmarsh form intertidal habitats supporting internationally important populations of birds. Where sea defence is maintained, this intertidal habitat is likely to be reduced in extent as a result of coastal squeeze caused by rising sea levels. The Parrett estuary is largely constrained along its length by defences, which protect against flooding. The mouth of the estuary has migrated northwards in recent centuries. The River Brue also discharges into the Parrett Estuary via the Huntspill River using a sluice control structure to control flood risk upstream. The future position of the mouth is uncertain but will be an important influence on the evolution of the adjacent shorelines. Presence of defences between Burnham-on-Sea and Brean has resulted in the lowering of the foreshore and prevents landward dune migration. North of the mouth of the Parrett Estuary is the cliffed headland of Brean Down. Onshore winds have resulted in the development of longitudinal dunes which are currently eroding and may breach in the next 100 years. These help protect the low-lying Somerset Levels. They are also susceptible to backdoor flooding from Weston Bay (Axe Estuary). The dunes are fronted by a sandy foreshore which seaward becomes the intertidal Berrow mudflats. All low-lying land around the Parrett Estuary is at risk from flooding and this may conflict with areas of future development and infrastructure. This will also cause overtopping of the Parrett Trail. Potentially, residents in coastal areas of low- lying ground or on cliffs susceptible to erosion may experience effects of sea	including mobile homes, caravans and road) and the Burnham and Berrow Golf Course from flooding. Potential change in the spatial extent if the Brean and Berrow dune system as flooding and wash over events increase. Potential reducing their flood defence capacity. No predicted change in spatial extent of the beaches due to erosion. They are at risk from flooding but this is unlikely to alter the beach's spatial extent. **Scenario B:** damage or even loss of some residential and community, recreational and tourist infrastructure (holiday park including mobile homes, caravans and road) and the Burnham and Berrow Golf Course from flooding. The amount of loss will be dependant on the location of the secondary defence under the MR scenario. Potential change in the spatial extent if the Brean and Berrow dune system as flooding and wash over events increase. Potential reducing their flood defence capacity. No predicted change in spatial extent of the beaches due to erosion. They are at risk from flooding but this is unlikely to alter the beach's spatial extent. **Scenario C:** as scenario A.	including mobile homes, caravans and road) and the Burnham and Berrow Golf Course from flooding. The amount of loss will be dependant on the location of the secondary defence under the MR scenario. Potential change in the spatial extent if the Brean and Berrow dune system as flooding and wash over events increase. Potential reducing their flood defence capacity. No predicted change in spatial extent of the beaches due to erosion. They are at risk from flooding but this is unlikely to alter the beach's spatial extent. **Scenario C:** protection of residential and community, recreational and tourist infrastructure (holiday park including mobile homes, caravans and road) and the Burnham and Berrow Golf Course from flooding. Potential change in the spatial extent if the Brean and Berrow dune system as flooding and wash over events increase. Potential reducing their flood defence capacity. No predicted change in spatial extent of the beaches due to erosion. They are at risk from flooding but this is unlikely to alter the beach's spatial extent. .	park including mobile homes, caravans and road) and the Burnham and Berrow Golf Course from flooding. The amount of loss will be dependant on the location of the secondary defence under the MR scenario. Potential change in the spatial extent if the Brean and Berrow dune system as flooding and wash over events increase. Potential reducing their flood defence capacity. No predicted change in spatial extent of the beaches due to erosion. They are at risk from flooding but this is unlikely to alter the beach's spatial extent. **Scenario C:** protection of residential and community, recreational and tourist infrastructure (holiday park including mobile homes, caravans and road) and the Burnham and Berrow Golf Course from flooding. Potential change in the spatial extent if the Brean and Berrow dune system as flooding and wash over events increase. Potential reducing their flood defence capacity. No predicted change in spatial extent of the beaches due to erosion. They are at risk from flooding but this is unlikely to alter the beach's spatial extent. .
Stolford, Steart, Combwich Stockland Bristol, Huntspill, Carrington, Bridgwater, Berrow, Brean	• Low-lying settlements which are at risk of flooding. • Sections of the A38, A39 and M5 may be at risk of flooding if the defences fail along the coast • Minor road leading to Steart is the only	• To avoid loss of property due to erosion and/or manage risk of flooding to people and property. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To avoid loss due to erosion of and manage		**Scenario A:** Stolford: Protection of residential and commercial properties and roads from flooding. Steart: Protection of residential and commercial properties and minor roads from flooding.	**Scenario A:** Stolford: Protection of residential and commercial properties and roads from flooding. Steart: Protection of residential and commercial properties and	**Scenario A:** Stolford: Protection of residential and commercial properties and roads from flooding. Steart: Protection of residential and commercial properties and roads from flooding.

HINKLEY POINT TO BREAN DOWN (Section G)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Lympsham and smaller settlements	access to the village including residential and commercial properties and is at risk of flooding • 7,700 new homes are planned at Bridgwater (6,200 within the urban area, 1,500 north of the town) and 54 ha of employment land, which are at risk of flooding. • Quays are located at Combwich and Dunball Wharf. • There are landfill sites at Brean, Burnham-on-Sea and Highbridge that are susceptible to flooding and possibly erosion where located on the coastline.	risk of flooding to industrial, commercial and economic assets and activities. • To ensure critical road and rail linkages are maintained. • To minimise the impact of policies on marine operations and activities • **To achieve compliance with Water Framework Directive objectives.** • **To prevent pollution from contaminated sources.**	level rise and increased frequency of flooding and erosion over the next 100 years and if the risk is perceived high enough people may choose to move inland, devaluing coastal properties at risk of flooding or erosion. Some properties may become blighted due to the risks. This also has implications for the businesses that are reliant on coastal locations, such as tourism. Safety procedures will require implementation to protect loss of life from flooding and erosion.	Steart Village to Combwich: Damage or even loss of residential and commercial properties and roads from flooding at Steart Village. Combwich to Burnham (Parrett Estuary): Protection of residential and commercial properties, roads (A38 and M5), Mainline Railway and associated facilities), the Quay at Combwich and infrastructure from flooding. The development opportunities planned for Bridgwater are potentially at risk from flooding depending on its location. The landfill sites at Brean, Burnham-on-Sea and Highbridge are susceptible to flooding. **Scenario B:** Stolford to Combwich damage or even loss of residential and commercial properties and roads from flooding. Exception to this is at Steart village and Fenning Island where protection of assets will be undertaken. Combwich to Burnham (Parrett Estuary): Protection of residential and commercial properties, roads (A38 and M5), Mainline Railway (and associated facilities) and infrastructure from flooding. With the exception of Combwich to Bridgwater where the damage or losses will be dependent on the location of secondary defences. The development opportunities planned for Bridgwater are potentially at risk from flooding depending on its location. The landfill sites at Brean, Burnham-on-Sea and Highbridge are susceptible to	roads from flooding. Steart Village to Combwich: Damage or even loss of residential and commercial properties and roads from flooding at Steart Village. Combwich to Burnham (Parrett Estuary): Protection of residential and commercial properties, roads (A38 and M5), Mainline Railway (and associated facilities) the Quay at Combwich and infrastructure from flooding. The development opportunities planned for Bridgwater are potentially at risk from flooding depending on its location. The landfill sites at Brean, Burnham-on-Sea and Highbridge are susceptible to flooding. **Scenario B:** Stolford to Combwich damage or even loss of residential and commercial properties and roads from flooding. Combwich to Burnham (Parrett Estuary): Protection of residential and commercial properties, roads (A38 and M5), West Somerset Railway Line (and associated facilities) and infrastructure from flooding. With the exception of Combwich to Bridgwater and Dunball to the River Brue where the damage or losses will be dependent on the location of secondary defences. The development opportunities planned for Bridgwater are potentially at risk from flooding depending on its location. The landfill sites at Brean, Burnham-on-Sea and Highbridge are susceptible to flooding. **Scenario C:** Protection of residential and commercial properties, roads (A38 and M5),	Steart Village to Combwich: Damage or even loss of residential and commercial properties and roads from flooding at Steart Village. Combwich to Burnham (Parrett Estuary); Protection of residential and commercial properties, roads (A38 and M5), Mainline Railway (and associated facilities) the Quay at Combwich and infrastructure from flooding. The development opportunities planned for Bridgwater are potentially at risk from flooding depending on its location. The landfill sites at Brean, Burnham-on-Sea and Highbridge are susceptible to flooding. **Scenario B:** Stolford to Combwich damage or even loss of residential and commercial properties and roads from flooding. Combwich to Burnham (Parrett Estuary): Protection of residential and commercial properties, roads (A38 and M5), Mainline Railway (and associated facilities) and infrastructure from flooding. With the exception of Combwich to Bridgwater and Dunball to the River Brue where the damage or losses will be dependent on the location of secondary defences. The development opportunities planned for Bridgwater are potentially at risk from flooding depending on its location. The landfill sites at Brean, Burnham-on-Sea and Highbridge are susceptible to flooding. **Scenario C:** Protection of residential and commercial properties, roads (A38 and M5), Mainline Railway (and associated

HINKLEY POINT TO BREAN DOWN (Section G)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
				flooding. **Scenario C:** Protection of residential and commercial properties, roads (A38 and M5), Mainline Railway (and associated facilities) and infrastructure from flooding. The development opportunities planned for Bridgwater are potentially at risk from flooding depending on its location. The landfill sites at Brean, Burnham-on-Sea and Highbridge are susceptible to flooding.	Mainline Railway (and associated facilities) and infrastructure from flooding. The development opportunities planned for Bridgwater are potentially at risk from flooding depending on its location. The landfill sites at Brean, Burnham-on-Sea and Highbridge are susceptible to flooding.	facilities), community and tourist infrastructure from flooding. The development opportunities planned for Bridgwater are potentially at risk from flooding depending on its location. The landfill sites at Brean, Burnham-on-Sea and Highbridge are susceptible to flooding.
Critical infrastructure	• There are numerous substations and power lines along the coast that are at risk of flooding as sea levels rise which could leave wider areas than the coast without power	• To ensure critical services remain operational		**Scenario A, B, & C:** Protection of substations in the Bridgwater area, Dunwear and Sedgemoor from flooding.	**Scenario A, B, & C:** Protection of substations in the Bridgwater area, Dunwear and Sedgemoor from flooding.	**Scenario A, B, & C:** Protection of substations in the Bridgwater area, Dunwear and Sedgemoor from flooding.
Footpaths	• The River Parrett Trail runs from the mouth to the source of the River Parrett and is susceptible to flooding. • The West Somerset Coast Path starts at Steart and follows the sea defences west beyond Hinkley Point.	• To manage risk of flooding to key community, recreational and amenity facilities.		**Scenario A, B, & C:** Potential loss of some parts of the River Parrett Trail and the West Somerset Coastal Path from flooding but can be re-routed.	**Scenario A, B, & C:** Potential loss of some parts of the River Parrett Trail and the West Somerset Coastal Path from flooding but can be re-routed.	**Scenario A, B, & C:** Potential loss of some parts of the River Parrett Trail and the West Somerset Coastal Path from flooding but can be re-routed.
Severn Estuary Ramsar	• This designation includes the extensive variety of estuary habitats, communities and noteworthy populations of invertebrates, fish, over wintering and migratory birds. • It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat which will have to be compensated.	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary Ramsar site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary Ramsar site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary Ramsar site. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Severn Estuary SPA	• This designation includes the internationally and nationally important populations of breeding, migratory and overwintering waders and water fowl using the Severn Estuary. • It is likely over time that the net area and distribution of the intertidal habitats that	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise

HINKLEY POINT TO BREAN DOWN (Section G)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
	are crucial to supporting the internationally and nationally important populations of migratory, breeding and overwintering birds will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat which will have to be compensated.			level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SPA site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SPA site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SPA site. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Severn Estuary SAC	• Designated habitats include: estuaries; mudflats and sandflats not covered by seawater at low tide; Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*; sandbanks which are slightly covered by seawater all the time; and reefs. • Designated species include: sea lamprey *Petromyzon marinus;* river lamprey *Lampetra fluviatilis* and Twaite shad *Alosa fallax.* • It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat which will have to be compensated.	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SAC site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SAC site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SAC site. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Bridgwater Bay SSSI and NNR (Biological and geological)	• Designated for its succession of coastal and freshwater habitats and the internationally and nationally important numbers of over wintering, passage and migrant waders and waterfowl. The site includes: River Parrett, Pawlett Hams, Wick Moor, Stert and Berrow flats.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C:** The Bridgwater Bay SSSI and NNR is at risk from flooding and coastal squeeze through erosion and there is may be a predicted change in nature conservation value. The SSSI is at risk from flooding however, there is no predicted change in conservation value.	**Scenario A, B, & C:** The Bridgwater Bay SSSI and NNR is at risk from flooding and coastal squeeze through erosion and there is may be a predicted change in nature conservation value. The SSSI is at risk from flooding however, there is no predicted change in conservation value.	**Scenario A, B, & C:** The Bridgwater Bay SSSI and NNR is at risk from flooding and coastal squeeze through erosion and there is may be a predicted change in nature conservation value. The SSSI is at risk from flooding however, there is no predicted change in conservation value.
Huntspill River NNR	• This river is wholly artificial and is designated for the river habitats and species it supports. Temporary flooding of Freshwater/brackish habitats is unlikely to affect the integrity of the site.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C:** The Huntspill River NNR is at risk from flooding however, there is no predicted change in conservation value.	**Scenario A, B, & C:** The Huntspill River NNR is at risk from flooding however, there is no predicted change in conservation value.	**Scenario A, B, & C:** The Huntspill River NNR is at risk from flooding however, there is no predicted change in conservation value.
Brean Down SSSI (biological and geological)	• This peninsula is designated for its Carboniferous limestone and maritime vegetation.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of Brean Down SSSI. These scenarios (NAI) will continue to maintain these geological	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of Brean Down SSSI. These scenarios (NAI) will continue to maintain these geological features.	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of Brean Down SSSI. These scenarios (NAI) will continue to maintain these geological

HINKLEY POINT TO BREAN DOWN (Section G)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
				features.		features.
Berrow Dunes SSSI	• Designated for its wide range of coastal habitats including saltmarsh, fore, grey and yellow dunes, stable grassland and dune slacks, scrub and a freshwater lagoon. The freshwater lagoon may be susceptible to flooding as sea levels rise.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B &C:** Protection of the dune to the south may limit their natural evolution, inhibiting their maturing process. With the exception of scenario B in the northern section of the dune field where the MR may see a potential changes in the dunes spatial extent. This may impact on the integrity of the Berrow Dunes SSSI.	**Scenario A, B &C:** Protection of the dune to the south may limit their natural evolution, inhibiting their maturing process. Scenarios A and B, where MR is the preferred policy, in the northern section of the dune field may see a potential changes in the dunes spatial extent. This may impact on the integrity of the Berrow Dunes SSSI	**Scenario A, B &C:** Protection of the dune to the south may limit their natural evolution inhibiting their maturing process. Scenarios A and B, where MR is the preferred policy, in the northern section of the dune field may see a potential changes in the dunes spatial extent. This may impact on the integrity of the Berrow Dunes SSSI
Berrow Dunes Local Nature Reserve	• Designated for its sand dune systems and wide variety of coastal habitats which support a diverse range of flora and fauna. Located within the Berrow Dunes SSSI	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenario A, B &C:** Protection of the dunes to the south may limit there nature evolution, inhibiting their maturing process. With the exception of scenario B in the northern section of the dune field where the MR may see a potential changes in the dune's spatial extent. This may impact on the integrity of the Berrow Dunes LNR.	**Scenario A, B &C:** Protection of the dune to the south may limit there nature evolution, inhibiting their maturing process. Scenarios A and B, where MR is the preferred policy, in the northern section of the dune field may see a potential changes in the dune's spatial extent. This may impact on the integrity of the Berrow Dunes LNR.	**Scenario A, B &C:** Protection of the dunes to the south may limit there nature evolution inhibit their maturing process. Scenarios A and B, where MR is the preferred policy, in the northern section of the dune field may see a potential changes in the dune's spatial extent. This may impact on the integrity of the Berrow Dunes LNR.
County Wildlife Sites	• There are 10 CWSs including: Wall Common West, subsite outside Bridgwater Bay NNR, River Brue, Apex Gardens, Brambles Road Ponds and Rhyne, St Christopher's playing ground, Brean Dunes, Ditch near Uphill, Bridgwater Road Verge, and Uphill Cliffs SSSI/LNR and adjacent land. Some low-lying sites may be at risk of flooding or from erosion if located on the coastline. There is potential loss of freshwater/brackish habitats (e.g. coastal grazing marsh) by following a policy of managed realignment although this creates opportunities for intertidal habitat creation.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites. Appraisal		**Scenario A, B &C:** Low-lying CWS are at risk from flooding. Wall Common West is inside the proposed managed realignment line. This may impact on the integrity of the freshwater habitats of the Wall Common CWS.	**Scenario A, B &C:** Low-lying CWS are at risk from flooding. Wall Common West is inside the proposed managed realignment line. This may impact on the integrity of the freshwater habitats of the Wall Common CWS.	**Scenario A, B &C:** Low-lying CWS are at risk from flooding. Wall Common West is inside the proposed managed realignment line. This may impact on the integrity of the freshwater habitats of the Wall Common CWS.
Beach	• Beaches located at Brean, Brean Farm, Burnham-on-Sea Jetty and Burnham-on-Sea Yacht Club forming important local attractions and are at risk of eroding/narrowing where there are defences.	• To manage risk of flooding to key community, recreational and amenity facilities.		**Scenario A, B &C:** No predicted change in spatial extent due to erosion at Brean, Brean Farm, Burnham-on-Sea Jetty and Burnham-on-Sea Yacht Club. Although localised narrowing may occur in front	**Scenario A, B &C:** No predicted change in spatial extent due to erosion at Brean, Brean Farm, Burnham-on-Sea Jetty and Burnham-on-Sea Yacht Club. Although localised narrowing may occur in front of defences. They	**Scenario A, B &C:** No predicted change in spatial extent due to erosion at Brean, Brean Farm, Burnham-on-Sea Jetty and Burnham-on-Sea Yacht Club. Although localised narrowing may occur in front of defences.

HINKLEY POINT TO BREAN DOWN (Section G)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
				of defences. They are at risk from flooding but this is unlikely to alter the beach's spatial extent.	are at risk from flooding but this is unlikely to alter the beach's spatial extent.	They are at risk from flooding but this is unlikely to alter the beach's spatial extent.
Historic environments	• Conservation Areas are located at Bridgwater and Burnham-on-Sea and are susceptible to flooding. • Several Grade II Listed Buildings in Burnham-on-Sea that are susceptible to flooding. • There are 6 Scheduled Monuments including a settlement, Wick Barrow Mound, Cynwit Castle, Motte with two Baileys, Alstone Lake Settlement Site, Brent Knoll. All are susceptible to flooding apart from Brent Knoll which is located on high ground.	• To avoid adverse impacts on scheduled and other nationally, regionally and locally important historic environment sites.		**Scenario A:** Protection of Listed Buildings at Stolford Farm, Combwich and Bridgwater from flooding. Inland Scheduled Monuments at Stogursey Castle, Motte Baileys at Down End, Wick Barrow Mound, Cynwit Castle, Alstone lake settlement site and the Medieval Village at Horsey .are protected from flooding. Protection of sections of the Conservation Areas at Bridgwater and Burnham-on-Sea . **Scenario B:** protection of Listed Buildings at Combwich and Bridgwater from flooding. In addition, the Motte Baileys at Down End and the Medieval Village at Horsey are protected from flooding. Stolford Farm is at risk from flooding. Protection of sections of the Conservation Area at Bridgwater and Burnham-on-Sea. **Scenario C:** as scenario A	**Scenario A:** Protection of Listed Buildings at Stolford Farm, Combwich and Bridgwater from flooding. Inland Scheduled Monuments at Stogursey Castle, Motte Baileys at Down End, Wick Barrow Mound, Cynwit Castle, Alstone lake settlement site and the Medieval Village at Horsey .are protected from flooding. Protection of sections of the Conservation Areas at Bridgwater and Burnham-on-Sea. **Scenario B:** protection of Listed Buildings at Combwich and Bridgwater from flooding. In addition, the Motte Baileys at Down End and the Medieval Village at Horsey are protected from flooding. Stolford Farm is at risk from flooding. Protection of sections of the Conservation Area at Bridgwater and Burnham-on-Sea. **Scenario C:** as scenario A	**Scenario A:** Protection of Listed Buildings at Stolford Farm, Combwich and Bridgwater from flooding. Inland Scheduled Monuments at Stogursey Castle, Motte Baileys at Down End, Wick Barrow Mound, Cynwit Castle, Alstone lake settlement site and the Medieval Village at Horsey .are protected from flooding. Protection of sections of the Conservation Areas at Bridgwater and Burnham-on-Sea. **Scenario B:** protection of Listed Buildings at Combwich and Bridgwater from flooding. In addition, the Motte Baileys at Down End and the Medieval Village at Horsey are protected from flooding. Stolford Farm is at risk from flooding. Protection of sections of the Conservation Area at Bridgwater and Burnham-on-Sea. **Scenario C:** as scenario A
Agricultural Land	• Set back from the coastline is Grade 3-5 agricultural land. Due to the low-lying nature of this predominantly grazing marsh it is susceptible to flooding. Managed realignment between Stolford and Steart may cause a permanent net loss of grazing marsh.	• To avoid loss due to erosion of and/or manage risk of flooding to agricultural land (Grade 3 and above).		**Scenarios A & B:** Large areas of grade 3 agricultural land are at risk from flooding. In addition, the managed realignment scheme will see permanent losses of Grade 3, 4 and 5 of low grade grazing land. **Scenario C:** small areas of agricultural land at risk from flooding.	**Scenarios A & B:** Large areas of grade 3 agricultural land are at risk from flooding. In addition, the managed realignment scheme will see permanent losses of Grade 3, 4 and 5 of low grade grazing land. **Scenario C:** small areas of agricultural land at risk from flooding.	**Scenarios A & B:** Large areas of grade 3 agricultural land are at risk from flooding. In addition, the managed realignment scheme will see permanent losses of Grade 3,4 and 5 of low grade grazing land. **Scenario C:** small areas of agricultural land at risk from flooding.

BREAN DOWN TO ANCHOR HEAD (Section H)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Weston-Super-	• Low-lying residential area and coastal	• To avoid loss of property due to erosion	This section of coast encompasses the	**Scenario A, B &C:** Protection	**Scenario A, B &C:** Protection of	**Scenario A, B &C:** Protection of

BREAN DOWN TO ANCHOR HEAD (Section H)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
Mare	resort offering a wide range of tourist activities and has extensive tourism related infrastructure, although it is defended by a sea wall it is at risk of flooding. • Multiple activities available on the wide sandy beaches at Sand Bay (recommended by Marine Conservation Society) and Weston Bay which are important local attractions. • Small harbour at Knightstone in Weston-Super-Mare and there is a Weston Yacht Club • There are 12,000 new homes planned for Weston-Super-Mare (3,000 within the urban area, 9,000 south- east of the town) and 34 ha of employment land which are at risk of flooding. • The A370 is at risk of flooding. • Weston-Super-Mare railway station and the main railway line to Bristol are at risk of flooding.	and/or manage risk of flooding to people and property. • To avoid loss due to erosion of and manage risk of flooding to key community, recreational and amenity facilities. • To avoid loss due to erosion of and manage risk of flooding to industrial, commercial and economic assets and activities. • To ensure critical road and rail linkages are maintained. • To minimise the impact of policies on marine operations and activities	embayment of Weston Bay between the two resistant headlands of Brean Down and Anchor Head. It fronts a large lowland area which forms part of Severn Levels. The River Axe discharges into the Southern part of the bay. The beach at Weston Bay is an important local attraction to this seaside destination and annual recycling of the sand occurs from south to north. A recent review of data suggests the beach is relatively stable. Although Weston-Super-Mare is defended by a seawall that is in the process of being upgraded, this section fronts an extensive low-lying area (Severn Levels) susceptible to flooding as sea levels rise. The flood extent could be as far eastwards as Congresbury affecting critical infrastructure including the A39, M5 and the main railway line to Bristol. Around Anchor Head a seawall provides protection against localised cliff erosion. There are few defences along the southern part of the bay where a large dune system protects the low-lying area from flooding. Uphill and the Axe Estuary up to its tidal limit are defended and have constrained the landward migration of the dunes. Improving sea defences to protect low-lying ground may cause further narrowing and steepening of beach levels and could limit supply of sediment to the dune area making it difficult to sustain defences at Uphill (unless sufficient beach recharge occurs in the northern part of the bay). The Severn Estuary is an internationally and nationally important nature conservation area. Where sea defence is maintained, this intertidal habitat is likely to be reduced in extent as a result of coastal squeeze caused by rising sea levels. Erosion of Brean Down could link Weston and Bridgwater Bays leaving Brean Down as an Island and resulting in the relocation of the Axe Estuary mouth. All low-lying land around the Axe estuary is at risk from flooding and this may conflict with areas of future development and infrastructure proposed for Weston-	of residential and commercial properties, tourist related infrastructure, roads (A370), Mainline Railway (and associated facilities) and infrastructure from flooding. Reduction in beach width at the southern end of Weston Bay due to erosion. The development opportunities planned for Weston-Super-Mere are potentially at risk from flooding depending on their location.	commercial properties from erosion and maintenance in spatial extent of the dune field. Protection of residential and commercial properties, tourist related infrastructure, roads (A370), Mainline Railway (and associated facilities) and infrastructure from flooding. Reduction in beach width at the southern end of Weston Bay due to erosion. The development opportunities planned for Weston-Super-Mere are potentially at risk from flooding depending on their location.	commercial properties, the pier to Birnbeck Island from erosion and maintenance in spatial extent of the dune field. Protection of residential and commercial properties, tourist related infrastructure, roads (A370), Mainline Railway (and associated facilities) and infrastructure from flooding. Reduction in beach width at the southern end of Weston Bay due to erosion. The development opportunities planned for Weston-Super-Mere are potentially at risk from flooding depending on their location.
Critical infrastructure	• There are numerous substations and power lines along the coast that are at risk of flooding as sea levels rise which could leave wider areas than the coast without power	• To ensure critical services remain operational		**Scenario A, B &C:** protection of the substations at Weston-Super-Mare from flooding.	**Scenario A, B &C:** protection of the substations at Weston-Super-Mare from flooding.	**Scenario A, B &C:** protection of the substations at Weston-Super-Mare from flooding.
Severn Estuary Ramsar	• This designation includes the extensive variety of estuary habitats, communities and noteworthy populations of invertebrates, fish, over wintering and migratory birds. • It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat which will have to be compensated.	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary Ramsar site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary Ramsar site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary Ramsar site. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Severn Estuary SPA (River Axe, estuary is part of this)	• This designation includes the internationally and nationally important populations of breeding, migratory and overwintering waders and water fowl using the Severn estuary. • It is likely over time that the net area and distribution of the intertidal habitats that are crucial to supporting the internationally and nationally important populations of migratory, breeding and	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to

BREAN DOWN TO ANCHOR HEAD (Section H)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
	overwintering birds will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat which will have to be compensated to ensure the important bird populations are supported.		Super-Mare. This will also cause overtopping of the West Mendip Way. The Seven Tidal Power Scheme across the Severn Estuary has identified several options including locations between Weston-Super-Mare and Cardiff.	This will led to a change in nature conservation value of the Severn Estuary SPA site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	conservation value of the Severn Estuary SPA site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	a change in nature conservation value of the Severn Estuary SPA site. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Severn Estuary SAC (SAC)	• Designation habitats include: estuaries; mudflats and sandflats not covered by seawater at low tide; Atlantic salt meadows *(Glauco-Puccinellietalia maritimae);* and sandbanks which are slightly covered by seawater all the time; reefs • Designated species include: sea lamprey *Petromyzon marinus;* river lamprey *Lampetra fluviatilis* and Twaite shad *Alosa fallax.* • It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat which will have to be compensated.	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SAC site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SAC site. If this policy is taken forward, then a Habitats Regulations assessment would be required.	**Scenario A, B, & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SAC site. If this policy is taken forward, then a Habitats Regulations assessment would be required.
Mendip Limestone Grasslands SAC	• Designated for its *Tilio-Acerion* forests of slopes, screes and ravines, caves not open to the public, European dry heaths, semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*). • Designated species include the greater horseshoe bat *Rhinolophus ferrumequinum.*	• **To maintain the integrity of internationally designated sites and the favourable condition of their interest features.**		**Scenario A, B &C:** This feature is not predicted to be affected by erosion or flooding.	**Scenario A, B &C:** This feature is not predicted to be affected by erosion or flooding.	**Scenario A, B &C:** This feature is not predicted to be affected by erosion or flooding.
Severn Estuary SSSI	• The estuary is designated for its wide range of coastal habitats and is one of the largest and most important estuaries in Britain. Its unique funnel shape makes it rare in Britain and Worldwide. It supports important populations of invertebrates, fish and birdlife.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SSSI site.	**Scenario A, B & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SSSI site.	**Scenario A, B & C:** It is likely over time that the net area and distribution of these habitats and the species it supports will vary in accordance with the natural processes. Where coastal squeeze occurs (sea level rise against sea defences) there is likely to be a net decrease in intertidal habitat. This will led to a change in nature conservation value of the Severn Estuary SSSI site.
Brean Down SSSI (biological and geological)	• This peninsula is designated for its carboniferous limestone and maritime vegetation.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Brean Down SSSI. These	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Brean Down SSSI. These scenarios (NAI) will	**Scenario A, B, & C:** Continuation of natural processes is key to the integrity of the Brean Down SSSI. These

BREAN DOWN TO ANCHOR HEAD (Section H)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
				scenarios (NAI) will continue to maintain these geological features.	continue to maintain these geological features.	scenarios (NAI) will continue to maintain these geological features.
Uphill SSSI	• Designated for its species rich chalk grassland supporting many invertebrates particularly butterflies. Also forms part of Mendip Limestone Grasslands SAC.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A:** protection of intertidal and coastal areas of the Uphill SSSI from flooding at the secondary defence line. **Scenario B:** Intertidal and coastal areas of the Uphill SSSI are at risk from flooding Increased saline exposure may result in changes in nature conservation value. **Scenario C:** as scenario A but at the primary defence line.	**Scenario A:** protection of intertidal and coastal areas of the Uphill SSSI from flooding at the secondary defence line. **Scenario B:** Intertidal and coastal areas of the Uphill SSSI are at risk from flooding Increased saline exposure may result in changes in nature conservation value. **Scenario C:** as scenario A but at the primary defence line.	**Scenario A:** protection of intertidal and coastal areas of the Uphill SSSI from flooding at the secondary defence line. **Scenario B:** Intertidal and coastal areas of the Uphill SSSI are at risk from flooding Increased saline exposure may result in changes in nature conservation value. **Scenario C:** as scenario A but at the primary defence line.
Walborough SSSI	• Exceptionally rich flora including a number of nationally rare species.	• **To avoid adverse impacts on, conserve and where practical enhance the designated interest of nationally designated conservation sites.**		**Scenario A, B, & C:** The Walborough SSSI is at risk from flooding. Increased saline exposure may result in changes in nature conservation value.	**Scenario A, B, & C:** The Walborough SSSI is at risk from flooding. Increased saline exposure may result in changes in nature conservation value.	**Scenario A, B, & C:** The Walborough SSSI is at risk from flooding. Increased saline exposure may result in changes in nature conservation value.
Uphill LNR	• Species rich chalk grassland supporting many invertebrates particularly butterflies.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenario A:** protection of intertidal and coastal areas of the Uphill LNR from flooding however at the set back defence line. **Scenario B:** Intertidal and coastal areas of the Uphill LNR are at risk from flooding Increased saline exposure may result in changes in nature conservation value. **Scenario C:** as scenario A but at the primary defence line.	**Scenario A:** protection of intertidal and coastal areas of the Uphill LNR from flooding however at the set back defence line. **Scenario B:** Intertidal and coastal areas of the Uphill LNR are at risk from flooding Increased saline exposure may result in changes in nature conservation value. **Scenario C:** as scenario A but at the primary defence line.	**Scenario A:** protection of intertidal and coastal areas of the Uphill LNR from flooding however at the set back defence line. **Scenario B:** Intertidal and coastal areas of the Uphill LNR are at risk from flooding Increased saline exposure may result in changes in nature conservation value. **Scenario C:** as scenario A but at the primary defence line.
Walborough Common LNR	• Exceptionally rich flora including a number of nationally rare species of plants and butterflies.	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenario A, B, & C:** The Walborough Common LNR is at risk from flooding. Increased saline exposure may result in changes in conservation value.	**Scenario A, B, & C:** The Walborough Common LNR is at risk from flooding. Increased saline exposure may result in changes in conservation value.	**Scenario A, B, & C:** The Walborough Common LNR is at risk from flooding. Increased saline exposure may result in changes in conservation value.
County Wildlife Sites	• There are 5 CWS including: Seven Estuary (Axe Estuary to Weston Golf Course); Weston Golf Course and fields below Uphill; Uphil Great Rhyne; Ellenborough	• To avoid adverse impacts on, conserve and where practical enhance the designated interest of locally designated conservation sites.		**Scenario A, B & C:** Net reduction in the dune area due to erosion and coastal squeeze against coastal defence at the	**Scenario A, B & C:** Net reduction in the dune area due to erosion and coastal squeeze against coastal defence at the golf course resulting	**Scenario A, B & C:** Net reduction in the dune area due to erosion and coastal squeeze against coastal defence at the

BREAN DOWN TO ANCHOR HEAD (Section H)						
Location/ feature	**Key issues**	**Objectives that apply**	**Key Considerations**	**Assessment of Scenarios A, B &C**		
				Short term (to 2025)	**Medium term (to 2055)**	**Long term (to 2015)**
	Park; Spring Cove Cliffs			golf course resulting in adverse impact on CWS.	in adverse impact on CWS.	golf course resulting in adverse impact on CWS.
Mendip Hills AONB	• The area is designated for its rich landscape which encompasses landscape, people and nature. The AONB aims to conserve the best qualities of the landscape by helping to guide and manage change.	• To avoid conflict with AONB Management Plan Objectives.		**Scenario A, B, & C:** No predicted changes in landscape.	**Scenario A, B, & C:** No predicted changes in landscape.	**Scenario A, B, & C:** No predicted changes in landscape.
West Mendip Way	• Starts at Uphill on the coast and leads inland to Wells and is susceptible to flooding in the low-lying areas.	• To manage risk of flooding to key community, recreational and amenity facilities.		**Scenario A, B, & C:** Potential loss of some parts of the West Mendip Way from flooding and erosion along the Golf Course at Uphill. **Scenario C:** protection of section of the West Mendip Way at Uphill from erosion.	**Scenario A, B, & C:** Potential loss of some parts of the West Mendip Path from flooding and erosion along the Golf Course at Uphill. **Scenario C:** protection of section of the West Mendip Path at Uphill from erosion.	**Scenario A, B, & C:** Potential loss of some parts of the West Mendip Path from flooding and erosion along the Golf Course at Uphill.
Historic environments	• Weston-Super-Mare is a designated Conservation Area susceptible to flooding; • There are 7 Scheduled Monuments, where located on low-lying ground they are at risk from erosion • There are numerous Grade II Listed Buildings and sites of archaeological importance that are susceptible to flooding	• To avoid adverse impacts on scheduled and other nationally, regionally and locally important historic environment sites.		**Scenario A, B, & C:** protection of the Conservation Area at Weston-Super-Mare from flooding. Listed Buildings in Uphill are at risk from flooding under scenario A & B and from back-door flooding under scenario C. Protection of Listed Buildings at Weston-Super-Mare under all scenarios. Scheduled Monuments are not at risk from flooding in Weston-Super Mere.	**Scenario A, B, & C:** protection of the Conservation Area at Weston-Super-Mare from flooding. Listed Buildings in Uphill are at risk from flooding under scenario A & B and from back- door flooding under scenario C. Protection of Listed Buildings at Weston-Super-Mare under all scenarios. Scheduled Monuments are not at risk from flooding in Weston-Super Mere.	**Scenario A, B, & C:** protection of the Conservation Area at Weston-Super-Mare from flooding. Listed Buildings in Uphill are at risk from flooding under scenario A & B and from back-door flooding under scenario C. Protection of Listed Buildings at Weston-Super-Mare under all scenarios. Loss of small section of Brean Down Scheduled Monument due to erosion. Scheduled Monuments are not at risk from flooding in Weston-Super Mere.
Agricultural Land	• Set back from Weston-Super-Mare is Grade 3- 4 agricultural land. Due to the low-lying nature of this area, it is susceptible to flooding.	• To avoid loss due to erosion of and/or manage risk of flooding to agricultural land (Grade 3 and above).		**Scenario A, B, & C:** Low grade agricultural land at risk from flooding.	**Scenario A, B, & C:** Low grade agricultural land at risk from flooding.	**Scenario A, B, & C:** Low grade agricultural land at risk from flooding.

Annex F.4 – Proposed Preferred Policies

Following a review of the policy appraisals for each scenario, the proposed preferred policies that provide the most appropriate, sustainable long-term management of the coast were identified. These are summarised in the following table, along with comments/justification as to why they were identified as the proposed preferred options.

These proposed preferred policies were then reviewed and consulted on with the North Devon & Somerset Coastal Advisory Group, Elected Members and Key Stakeholders (see **Appendix B**) to produce final preferred policies (see **Appendix G**).

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
POLICY SCENARIO AREA: LUNDY						
7c01 – Landing Beach	Hold the Line	Improve existing defences to continue protecting the only access to the rest of Lundy, through **Hold the Line**.	Maintain the defences to continue protecting the only access to the rest of Lundy, through **Hold the Line**.	Maintain the defences to continue protecting the only access to the rest of Lundy, through **Hold the Line**.	Maintaining defences at Landing Beach will continue to result in less sediment being eroded from the backing cliffs and a slight decrease in sandbanks that form part of the Lundy Special Area of Conservation (SAC), assuming an onshore-offshore pathway for sediment. Potential impacts on Lundy Site of Special Scientific Interest (SSSI) and Marine Nature Reserve from improvement and maintenance of coastal defence assets. Minor changes in landscape in Lundy Heritage Coast and Coastal Preservation Area from improvement and maintenance of coastal defence assets. A Hold the Line policy may cause coastal squeeze (narrowing of the shoreline) and gradual loss of landing beach. This may see a change in conservation value of this feature of the SAC. Unlikely to have implications for UNESCO Biosphere Reserve.	The objective of the Plan here is to continue to provide defence at Landing Beach in order to maintain access to the rest of Lundy.
		No active intervention would result in loss of access to Lundy for residents and visitors as defences deteriorate and fail.				
		Managed Realignment is not feasible as there is no room for it.				
7c02 – Lundy (except Landing Beach)	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Shrinkage of the island's pocket beaches due to coastal squeeze (narrowing of the shoreline) as cliff erosion fails to keep pace with sea level rise. Although a natural process, there may be loss of key intertidal features of the Lundy SSSI, Marine Nature Reserve and SAC. Cliffs could recede by up to 10m in the south-east of the island over the long term. Depending on where this occurs, it could lead to the loss of several scheduled monuments: Marison Castle; remains of two gun batteries; Brazen Ward in the north east of Lundy; and a battery in the central western area. Potential loss of non-scheduled prehistoric features also. Loss of these features depends on where the cliffs recede in future. Unlikely to have implications for UNESCO Biosphere Reserve.	The objective of the Plan here is to continue to allow this undefended section of coast, designated for its environmental features, to evolve naturally.
		There are currently no defences here and no property or infrastructure is at risk of erosion or flooding, therefore policies of Hold the Line and Managed Realignment are inappropriate.				
POLICY SCENARIO AREA: HARTLAND POINT TO WESTWARD HO!						
7c03 – Hartland Point to Clovelly	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Sections of the South West Coast Path will need to be moved inland as they are lost to erosion. This is in line with South West Coast Path policy. Potential for erosion of terrestrial habitats such as heath and woodland designated as Tintagel-Marsland-Clovelly Coast SAC and Marsland to Clovelly SSSI. Policies could be	The objective of the Plan here is to continue to allow this undefended section of coast, designated for it environmental features, to evolve naturally.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		There are currently no defences here and very few assets at risk of erosion to justify any intervention on economic grounds. Intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate.			developed to allow the landward movement of habitats. Potential change in landscape within Hartland Heritage Coast and North Devon Area of Outstanding Natural Beauty (AONB) through increased flooding and erosion. Potential partial loss of two Scheduled Monuments due to erosion: Gallantry Bower (medium term) and Windbury Head (long term). Potential loss of Listed Buildings near Blackchurch Rock and to the west of Clovelly, as well as a number of non-designated archaeological features. Loss of these features depends on where the cliffs recede in future. Unlikely to have implications for UNESCO Biosphere Reserve.	
7c04 – Clovelly	Hold	Maintain the existing seawall and breakwater to continue protecting Clovelly, through **Hold the Line**. This would be supported by continuing the annual transfer of pebbles across the harbour from west to east.	Maintain the defences and eventually replace them with larger structures to continue protecting Clovelly, through **Hold the Line**. This would be supported by continuing the annual transfer of pebbles across the harbour from west to east.	Maintain the defences constructed in the medium term to continue protecting Clovelly, through **Hold the line**. This would be supported by continuing the annual transfer of pebbles across the harbour from west to east.	Protection of homes and businesses, the harbour, listed buildings and South West Coast Path from flood and erosion risk. Potential change in landscape in Hartland Heritage Coast and North Devon AONB through increased size of defences. Unlikely to have implications for UNESCO Biosphere Reserve.	The objective of the Plan here is to continue to protect people, property and infrastructure at Clovelly. To do so will only have localised impacts on coastal processes.
		No Active Intervention here would increase flood and erosion risk to property and infrastructure as defences deteriorate and fail. This would also have an impact on tourism, which is important to the economy of the wider area.				
		Managed Realignment is not feasible as there is no room for it.				
7c05 – Clovelly to Westward Ho! (Seafield House)	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Sections of the South West Coast Path will need to be moved inland as they are lost to erosion. This is in line with South West Coast Path policy. Potential loss of properties, including a number of Listed Buildings, due to erosion at Buck's Mill if alternative funds are unavailable for future defence. Potential loss of non-designated archaeological features along this section. Loss of these features depends on where the cliffs recede in future. Potential for landscape change within Hartland Heritage Coast and North Devon AONB through increased erosion, and for deteriorating coastal defence structures to become unsightly if not maintained. Through natural process of erosion, there may be a loss of terrestrial habitats such as heath and woodland in the Tintagel-Marsland-Clovelly Coast SAC and the Marsland to Clovelly SSSI.	The objectives of the Plan here are to continue to allow this largely undefended section of coast to evolve naturally and minimise erosion risk to people and property. However, it is unlikely that continued defence of Buck's Mill would attract public funding from the flood and coastal defence budget. If alternative funds are available, there is no reason from a processes point of view not to permit defences to be retained. They would need to be replaced with much larger structures to provide adequate levels of protection in the future. However, this may be impossible to justify economically even with alternative funding in the future.
		There are currently no defences along most of this coast and very few assets at risk of erosion to justify, on economic grounds any future investment in defences. Such intervention would also adversely affect the area's environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
					The policy will promote the geological exposures from Mermaids Pool to Rowdens Gut SSSI, which will continue to be visible. Maintenance and possible enhancement of geological features in the Marsland to Clovelly SSSI and SAC if Buck's Mill is not defended in the medium to long term. Unlikely to have implications for UNESCO Biosphere Reserve.	
POLICY SCENARIO AREA: WESTWARD HO! TO SAUNTON DOWN						
7c06 – Westward Ho!	Hold	Maintain and improve the existing seawall defences, replacing them with much larger structures, to continue protection for Westward Ho!, through **Hold the Line**.	Maintain the seawall defences to continue protection for Westward Ho!, through **Hold the Line**.	Maintain the seawall defences to continue protection for Westward Ho!, through **Hold the Line**.	Protection of properties, community, recreational and amenity facilities from erosion and flooding (Short term). Protection of tourist amenities (including holiday camp, park and caravan site), promenade, Coastguard station and slipway from erosion and flooding (long term). Minor changes in landscape within North Devon AONB and Hartland Heritage Coast. Protection of sections of the South West Coastal Path. This policy will limit natural processes that are key to the integrity of Westward Ho! SSSI's geological features; visible exposures will remain limited, except at the western end of this section. There are potential effects on Northam Burrows SSSI and Braunton Burrows Nature Reserve SSSI and SAC, as continued defence at Westward Ho! limits natural processes.	The objective of the Plan here is to continue to protect Westward Ho! against flood and erosion risk. Defences would eventually need replacing with much larger structures along existing alignments. Defences may also need to be bolstered at the western end as the undefended cliffs towards Rock Nose erode, posing a potential risk of outflanking. This policy does not envisage constructing new defences towards Rock Nose.
		No Active Intervention here would increase flood and erosion risk to property and infrastructure as defences deteriorate and fail. This would also affect tourism, which is important to the economy of the wider area.				
		Managed Realignment is not feasible here as it would require relocation or loss of property, infrastructure and tourism assets.				
7c07 – Northam Burrows	Retreat	Continue to reduce flood and erosion risk for developed areas along the southern part of Northam Burrows and for the former landfill site by constructing low – reflective (embankment/revetment type) defences, while allowing the pebble ridge to roll back and rotate to become more aligned with the dominant wave direction (possibly aided by recycling beach material), through **Managed Realignment**.	Continue to reduce flood and erosion risk for developed areas along the southern part of Northam Burrows and for the former landfill site by maintaining and improving embankment defences (possibly through rock armour and extending defences), while allowing the pebble ridge to adapt naturally to rising sea levels, through **Managed Realignment**.	Continue to reduce flood and erosion risk for developed areas along the southern part of Northam Burrows and for the former landfill site by maintaining and improving embankment defences along these areas (possibly through rock armour and extending defences), while allowing the pebble ridge to adapt naturally to rising sea levels, through **Managed Realignment**.	Protection of homes at the southern end of Northam Burrows and the former landfill site at the northern end. The Golf Course and the Surf Bay Caravan Park continue to be at risk from coastal flooding. Loss of part of a minor road (medium term), giving access to the northern sections of Northam Burrows, the information centre and the car park (long term) due to erosion and flooding. The minor road behind the pebble ridge will therefore need to be moved back as the ridge rotates. Ultimately access via the Pebble Ridge Road will be lost. Loss of parts of the Golf Course due to erosion. The Golf Course could be relocated elsewhere in Northam Burrows, aided by the Hold the Line policy along unit 7c08.	The objectives of the Plan here are to provide a sustainable long-term solution for managing flood and erosion risk to people, property and the former landfill site, and to work with the natural processes predicted to cause roll-back and rotation of the pebble ridge. This rotation and roll-back could be allowed to occur largely naturally although beach recycling could be used where it would help this process, e.g. by aiding the building up of the beach at the northern end of the spit, and it would not interfere significantly with the transport of sediment along the shore. The need for this would be based on continuous monitoring. Along the southern end of Northam Burrows, where the land rises and development has occurred, roll-back of the ridge here could be up to 150-200m.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		To hold the line along this stretch would require significant investment in constructing and maintaining groynes backed by large revetment/seawall structures. This would exacerbate the loss of beach, making this option technically more difficult to sustain over time. It would also have a significant visual effect on the landscape and is not economically justifiable compared to other options.			Loss of large sections of the South West Coast Path due to erosion (medium to long term) and flooding. These sections will need to be moved inland in line with the South West Coast Path policy. Loss of a number of non-designated archaeological features located on the western half of Northam Burrows due to flooding and erosion. Reduction in size of the Northam Burrows SSSI as the pebble ridge rolls back (medium to long term). This may affect the Braunton Burrows SAC and would be considered through an appropriate Assessment. Extension of defences east from Westward Ho! would result in loss of the southernmost part of the pebble ridge. There would be minor changes in landscape in the North Devon AONB. Any construction of defences would need to be sympathetic to the AONB and support biodiversity and sustainable development policies of the Biosphere Reserve.	This will expose areas currently considered to be 'inland' to wave action. Therefore under this policy, a new low-reflective structure (e.g. earth embankment or rock revetment type defence) could be constructed perpendicular to the shoreline. This would reduce flood risk for property and infrastructure. The exact nature of the structure to be used requires more detailed investigation. This defence could be extended over time, depending upon the extent of ridge roll-back as sea levels rise, and based on continuous monitoring. As part of this implementation, the defences at the eastern end of Westward Ho! would need to be extended and increased as this area will become more prominent along the shoreline.
		A policy of No Active Intervention at Northam Burrows would allow the natural retreat and realignment of the pebble ridge. This would increase flood and erosion risk to both Westward Ho! and the former landfill site because there would be no construction of defences. This is not appropriate given the risk to people, property and infrastructure and the additional risk of pollution from erosion of the landfill site.				
7c08 – Skern Salt marsh to Appledore (west)	Retreat	Maintain the existing revetment defences to continue protecting the rest of Northam Burrows and provide access to the landfill site, through **Hold the Line**.	Maintain and improve the revetment defences to continue protecting the rest of Northam Burrows and provide access to the landfill site, through **Hold the Line**.	Maintain the revetment defences improved in the medium term to continue protecting the rest of Northam Burrows and provide access to the landfill site, through **Hold the Line**.	Protection of the former landfill site at Northam Burrows from flooding and erosion. Protection of sections of the Tarka Trail from flooding. Maintenance of defences provides flood protection for Appledore, Instow and the Taw-Torridge Estuary. Provides protection of a maximum possible area of the eastern side of Northam Burrows into which the Golf Course could move as the seawards side erodes. A Hold the Line policy may cause local coastal squeeze (narrowing of the shoreline) with potential loss of intertidal habitat from the Taw Torridge SSSI and possibly wider implications for the Braunton Burrows SSSI, National Nature Reserve and SAC. However, Hold the Line is required to support the adjacent managed realignment in policy unit 7c07 that will create a greater area of habitat to offset this loss. Needs further detailed assessment. Minor changes in landscape in the North Devon AONB.	The objective of the Plan here is to manage flood and erosion risk to people, property and the former landfill site. This objective supports the managed realignment in unit 7c07. The policy to Hold the Line here will provide a further 'back stop' to any flooding caused by overtopping and breaching of the pebble ridge. This will reduce the potential for any such events breaking through Northam Burrows and having a more significant impact on the Taw/Torridge Estuary. Holding the line here could also maximise the land available for adapting land use, whereas realignment would reduce the land available. Implementation of a Hold the Line policy here will need to consider both continuation of access to the furthest part of the pebble ridge while also allowing sediment and water to pass beneath the Skern road. This would allow sediment deposition on Northam Burrows to occur, reducing the effects of future sea level rise.
		Managed Realignment along this estuary side of Northam Burrows could provide opportunities to create habitat as sea level rise causes coastal squeeze (narrowing of the shoreline) to the intertidal habitats that front defences. However, with managed realignment along the open coast of Northam Burrows, realignment here also could present an increased risk of the estuary channel breaking through Northam Burrows. This would have significant impacts upon the wider estuary system. It would also make it more difficult to manage pollution risk from the former landfill site.				
		A policy of No Active Intervention here would allow the natural retreat and adaptation of the intertidal habitats onto Northam Burrows. This would also increase flood and erosion risk to both Westward Ho! and the former landfill site, as there would be no construction of defences to manage this risk. This is in appropriate given the risk to people, property and infrastructure and the additional risk of pollution posed by erosion of the landfill site.				
7c09 – Appledore	Hold	Maintain and improve the various seawall/quay wall	Maintain and further improve the various	Maintain the various seawall/quay wall	Protection from the risk of flooding of homes and businesses, facilities for the community, recreation and	The objective of the Plan here is to continue to reduce the risk of flooding to people, property and infrastructure at

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		defences to continue protecting Appledore, through **Hold the Line**.	seawall/quay wall defences to continue protecting Appledore, through **Hold the Line**.	defences to continue protecting Appledore, through **Hold the Line**.	tourism, roads (A386 and cycle path), shipyard and harbour infrastructure. Protection of sections of the Tarka Trail from flooding. Potential loss of salt marsh at Skern Bay due to coastal squeeze (narrowing of the shoreline), with potential impacts on Taw Torridge SSSI.	Appledore.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail. This would also affect the economy of the wider area.				
		Managed Realignment is not feasible here as there is no room for it because the area is backed by steeply rising ground. Realignment here would require relocation or loss of property and infrastructure with very little gain.				
7c10 – Appledore to Cleave Moorings, Northam	Do Nothing	Allow natural estuary evolution to continue through **No Active Intervention**.	Allow natural estuary evolution to continue through **No Active Intervention**.	Allow natural estuary evolution to continue through **No Active Intervention**.	No implications for development, historic features, conservation or land areas..	The objective of the Plan here is to allow the estuary to evolve naturally. This section is backed by steeply rising ground. A policy of No Active Intervention would result in no more assets being at risk of flooding than at present.
		The short embankment defences along parts of this section protect very few assets against flood risk. There is no economic justification to continue to defend these areas.				
7c11 – Cleave Moorings, Northam and Bideford	Hold	Maintain the existing floodwall defences to continue protecting Northam and Bideford, through **Hold the Line**.	Maintain the existing floodwall defences to continue protecting Northam and Bideford, through **Hold the Line**.	Maintain the floodwall defences, eventually raising the height of the walls in response to sea level rise, to continue protecting Northam and Bideford, through **Hold the Line**.	Protection from the risk of flooding for homes and businesses, community, recreation and tourism amenities, roads (A39, A386 and cycle path), a substation and harbour. A Hold the Line policy could cause coastal squeeze (narrowing of the shoreline) with loss of intertidal habitat from the Taw Torridge SSSI	The objective of the Plan here is to continue to reduce flood risk for people, property and infrastructure in Northam and Bideford.
		No Active Intervention here would see deterioration and eventual failure of defences, increasing flood risk for property and infrastructure. This would also affect the economy of the wider area.				
		Managed Realignment is not feasible here as there is no room for it because the area is backed by steeply rising ground. Realignment here would require relocation or loss of property and infrastructure with very little gain.				
7c12 – Upper Torridge Estuary (east and west banks between Bideford and Weare Gifford)	N/A	Allow natural estuary evolution to continue through **No Active Intervention** along much of the upper Torridge Estuary, but implement **Managed Realignment** or **Hold the Line** locally where defences are required to protect infrastructure and property. We do not yet have enough information to decide exactly which area of the upper Torridge	Allow natural estuary evolution to continue through **No Active Intervention** along much of the upper Torridge Estuary, but implement **Managed Realignment** or **Hold the Line** locally where defences are required to protect infrastructure and property. We do not yet have enough information to decide exactly which area of the upper Torridge	Allow natural estuary evolution to continue through **No Active Intervention** along much of the upper Torridge Estuary, but implement **Managed Realignment** or **Hold the Line** locally where defences are required to protect infrastructure and property. We do not yet have enough information to decide exactly which area of the upper Torridge	Policies may affect isolated properties. Minimal loss of higher grade agricultural land beside the Estuary due to erosion. Agricultural land is at risk from flooding. Although outside the Taw Torridge SSSI, creation of intertidal habitat could benefit the SSSI by offsetting the loss of habitat within it. This in line with the UNESCO Biosphere Reserve policy.	The objectives of the Plan here are to manage flood risk to people, property and infrastructure in a sustainable way and seek opportunities to allow the estuary to adapt to the effects of climate change in as natural way as possible. Most defences in the upper Torridge Estuary protect low-lying areas of mainly farmland backed by steeply rising ground. The policy of No Active Intervention in much of this upper part of the estuary would eventually help the estuary adapt to rising sea levels and other effects of climate change. The Biosphere Reserve has also been implementing small- to medium-scale managed realignment over the last 10 years in support of this type of action. Properties and infrastructure have been developed in some

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		will be subject to which policy. This will be determined by the developing Taw-Torridge Estuary strategy study (being led by the Environment Agency).	will be subject to which policy. This will be determined by the developing Taw-Torridge Estuary strategy study (being led by the Environment Agency).	will be subject to which policy. This will be determined by the developing Taw-Torridge Estuary strategy study (being led by the Environment Agency).		areas, where it may be necessary to manage the realignment of the estuary by providing set-back defences. This would continue to reduce flood risk to these assets while allowing the estuary to adapt. It may be necessary to Hold the Line locally along short lengths of the upper estuary where realignment is impossible. Whether defended or undefended in the future, the evolution of the estuary will be constrained by defences or the naturally steep valley sides.
7c13 – East-the-Water to Torridge Bridge (A39)	N/A	Maintain the existing defences to continue protection against flood risk, through **Hold the Line**.	Maintain the existing defences to continue protection against flood risk, through **Hold the Line**.	Maintain and improve the defences to continue protection against flood risk, through **Hold the Line**.	Flood protection for homes and businesses, facilities for the community, recreation and tourism and roads (A39 and cycle path). A Hold the Line policy could cause coastal squeeze (narrowing of the shoreline) with loss of intertidal habitat from the Taw Torridge SSSI. However, along parts of this stretch, consideration could be given to controlled tidal exchange (allowing managed flooding) through the defended line onto land to the east of the main road.	The objective of the Plan here is to continue to reduce flood risk to people, property and infrastructure in the developed area of East-the-Water.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail.				
		Managed Realignment is not feasible here as there is no room for it because area is backed by steeply rising ground. Realignment here would require relocation or loss of property and infrastructure with very little gain.				
7c14 – Torridge Bridge (A39) to Instow	Hold	Maintain the existing defences to continue protection against flood risk, through **Hold the Line**.	Maintain and improve the defences to continue protection against flood risk, through **Hold the Line**.	Maintain the improved defences to continue protection against flood risk, through **Hold the Line**.	Protection of the B3233 and part of Tapeley Park from risk of flooding. A Hold the Line policy could cause coastal squeeze (narrowing of the shoreline) with loss of intertidal habitat from the Taw Torridge SSSI. Habitat creation policies in other parts of the estuary could be needed to offset this.	The objective of the Plan here is to continue to reduce flood risk to people, property and infrastructure on the developed frontage between East-the-Water and Instow.
		No Active Intervention here would result in loss of the road link between Instow and East-the-Water as sea levels rise. There is no readily available alternative route. This land is also backed by steeply rising ground that would constrain the estuary evolution in any case.				
		Managed Realignment is not feasible here as there is no room for it without losing the road link between Instow and East-the-Water.				
7c15 – Instow	Hold	Maintain the floodwall defences, eventually replacing them with larger structures, to continue protecting Instow, through **Hold the Line**.	Maintain the defences, improved in the short term, to continue protecting Instow, through **Hold the Line**.	Maintain the defences to continue protecting Instow, through **Hold the Line**.	Protection of homes and businesses, facilities for the community, recreation and tourism, Instow Conservation Area and B3233 from flooding. A Hold the Line policy could cause coastal squeeze (narrowing of the shoreline) with loss of intertidal habitat from the Taw Torridge SSSI	The objective of the Plan here is to continue to reduce flood risk to people, property and infrastructure at Instow. A beach management plan could be developed to support the Hold the Line policy. This might involve extending the dunes southwards along Instow Beach and altering highway drainage.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail.				
		Managed Realignment is not feasible here as there is no room for it because the area is backed by steeply rising ground. Realignment would require relocation or loss of property and infrastructure with very little gain.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
7c16 – Instow to Yelland	Hold	Continue to maintain existing embankment defences under a **Hold the Line** policy. Investigate opportunities for Managed Realignment.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	Protection of local access road, isolated houses and the South West Coast Path. Protection of substations at Estuary Business Park. Loss of sections of this business park in the medium term through Managed Realignment, although the extent of loss depends on where the set-back defences are, which would be determined through further detailed study. Potential benefits to the Taw Torridge SSSI by creating intertidal habitat in areas of Managed Realignment in the medium term. Potential impacts on a number of non-designated archaeological features, depending upon extent of realignment, which would be determined through further detailed study. A Hold the Line policy in the long term will cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat from the SSSI.	The objective of the Plan in this area is to investigate and, if appropriate, implement Managed Realignment to provide both flood storage and habitat creation opportunities to benefit the wider estuary. Implementing this policy could involve constructing a set-back defence and then making a breach in the existing defences. This could occur along most or part of this section. Any areas not subject to realignment would be maintained and embankments eventually replaced with much larger structures along existing alignments. However, the impact of realigning defences is uncertain. Much more detailed study is required to assess their likely effects in isolation and cumulatively. The short term policy to Hold the Line would maintain existing defences while these studies are done. If the studies show it is inappropriate to realign defences here, then the existing defences would need to be maintained and eventually replaced with much larger structures.
		No Active Intervention here would see deterioration and eventual failure of the extensive embankment defences, resulting in uncontrolled natural realignment of the estuary in this area. This could have significant adverse impacts on sediment distribution patterns in other parts of the estuary and adjacent open coast. This would not only cause loss of property and infrastructure through flooding, but could also increase flood risk in other parts of the estuary, particularly with no management intervention to control the extent or rate of realignment.				
7c17 – Home Farm Marsh (Yelland to Fremington)	Retreat	Continue to maintain existing embankment defences under a **Hold the Line** policy. Investigate Managed Realignment opportunities.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	The realigned defence may impact on the Fremington geological SSSI. Potential benefits to the Taw Torridge SSSI through the creation of intertidal habitat in areas of managed realignment in the medium term. A Hold the Line policy in the long term will cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat from the SSSI, especially on Home Farm Marsh. Protection of the old Yelland Power Station from flooding. Protection of homes and businesses at Fremington and Muddlebridge from flooding. Potential impacts on Yelland Stone Row Schedule Monument and a number of non-designated archaeological features, depending upon extent of realignment, which would be determined through further detailed study.	The objective of the Plan in this area is to investigate and, if appropriate, implement managed realignment to provide both flood storage and habitat creation opportunities of benefit to the wider estuary. Implementation of this policy could involve constructing a set-back defence and then making a breach in the existing defences. This could occur along most or part of this section. Any areas not subject to realignment would be maintained and embankments eventually replaced with much larger structures along existing alignments. However, the impact of realigning defences is uncertain. Much more detailed study is required to assess the likely affects of this, both in isolation and cumulatively. The short term policy to Hold the Line would maintain existing defences while these studies are done. If the studies show it is inappropriate to realign defences here, then the existing defences would need to be maintained and eventually replaced with much larger structures.
		No Active Intervention here would see deterioration and eventual failure of the extensive embankment defences, resulting in uncontrolled natural realignment of the estuary in this area. This could have significant adverse impacts on sediment distribution patterns in other parts of the estuary and adjacent open coast. This would not only cause loss of property and infrastructure through flooding, but could also increase flood risk in other parts of the estuary; particularly with no management intervention to control the extent or rate of realignment.				
7c18 – Fremington to Penhill Point	Do Nothing	Allow natural estuary evolution to continue	Allow natural estuary evolution to continue	Allow natural estuary evolution to continue	Damage and potential loss of isolated access roads and the Conservation Areas at Fremington to flooding.	The objective of the Plan is to allow this undefended section of the estuary to continue to evolve naturally.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		through **No Active Intervention**.	through **No Active Intervention**.	through **No Active Intervention**.		
		There are no assets at risk of flooding along this stretch of the estuary, which is comprised of high ground. Therefore there is no economic justification for a policy of Hold the Line or Managed Realignment.				This section is comprised of high ground with no assets at risk of flooding.
7c19 – Penhill Point to A39	N/A	Maintain and improve the defences to continue protection against flood risk to property and infrastructure, through **Hold the Line**.	Maintain the improved defences to continue protection against flood risk to property and infrastructure, through **Hold the Line**.	Maintain the improved defences to continue protection against flood risk to property and infrastructure, through **Hold the Line**.	Protection of homes and businesses and community, recreation and tourism amenities from flooding. A Hold the Line policy could cause coastal squeeze (narrowing of the shoreline) with loss of intertidal habitat from the Taw Torridge SSSI. Consideration could, however, be given to controlled tidal exchange through the defended line onto land to the west of Tarka Trail, between Penhill Point and the Western Bypass Road Bridge. Protection of Conservation Areas at Bickington from flooding.	The objective of the Plan here is to continue to reduce flood risk to people, property and infrastructure at Bickington.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail.				
		Managed Realignment is not feasible along much of this stretch as it would require relocation or loss of property and infrastructure with very little gain. Where Managed Realignment is possible towards Penhill Point, it would require moving the Tarka Trail and providing realigned defences to protect properties against flood risk. This would be relatively expensive compared to maintaining the existing defences and offer very little gain in terms of habitat creation.				
7c20 – Upper Taw Estuary (east and west banks between A39 to tidal limit near Bishops Tawton)	N/A	Allow natural estuary evolution to continue through **No Active Intervention** along much of the upper Taw Estuary, although locally implement **Managed Realignment** or **Hold the Line** where defences are required to protect the railway line. There is insufficient information available to determine exactly which area of the upper Taw will be subject to which policy. This will be determined by the developing Taw-Torridge Estuary strategy study (being led by the Environment Agency).	Allow natural estuary evolution to continue through **No Active Intervention** along much of the upper Taw Estuary, although locally implement **Managed Realignment** or **Hold the Line** where defences are required to protect the railway line. There is insufficient information available to determine exactly which area of the upper Taw will be subject to which policy. This will be determined by the developing Taw-Torridge Estuary strategy study (being led by the Environment Agency).	Allow natural estuary evolution to continue through **No Active Intervention** along much of the upper Taw Estuary, although locally implement **Managed Realignment** or **Hold the Line** where defences are required to protect the railway line. There is insufficient information available to determine exactly which area of the upper Taw will be subject to which policy. This will be determined by the developing Taw-Torridge Estuary strategy study (being led by the Environment Agency).	Policies may affect isolated properties. Minimal loss to erosion of higher grade agricultural land by the estuary. Agricultural land is at risk from flooding. Potential benefits to the Taw Torridge SSSI by creating intertidal habitat in areas of Managed Realignment or No Active Intervention. Potential loss of intertidal habitat from the SSSI due to coastal squeeze (narrowing of the shoreline) where a Hold the Line policy is implemented.	The objective of the Plan here is to manage flood risk to people, property and infrastructure in a sustainable way, while seeking opportunities to allow the estuary to adapt to climate change in as natural way as possible. Most defences in the upper Taw Estuary protect low-lying areas of mainly farmland backed by steeply-rising ground. The policy of No Active Intervention in much of this upper part of the estuary, particularly along the east bank, would eventually see the estuary able to adapt to rising sea levels and other results of climate change. Where properties and infrastructure – particularly the railway line – have been developed, it may be necessary to manage the estuary realignment by providing set-back defences to continue to reduce flood risk to these assets. Holding the Line may be required along short lengths of the upper estuary where realignment is impossible.
7c21 – A39 to West Ashford (Barnstaple)	N/A	Maintain the embankment defences, and eventually replace some with larger embankments, to continue protection for Barnstaple, through **Hold the Line**.	Maintain and further replace the embankment defences to continue protection for Barnstaple, through **Hold the Line**.	Maintain the embankment defences to continue protection for Barnstaple, through **Hold the Line**.	Protection from flood risk for: homes and businesses; community, recreation and tourism facilities at Barnstaple, Pottington, Pilton, Sticklepath; sections of the A361, A39 and A386 and some access roads; the South West Coast Path; the Barnstaple to Exeter railway line; and the electricity sub-station at Barnstaple.	The objective of the Plan here is to continue to reduce flood risk to people, property and infrastructure at Barnstaple.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail.			Ashford Sewage Works would be protected from flooding. Protection of Conservation Areas and a Schedule Monument, Barnstaple Castle, from flooding. A Hold the Line policy could cause coastal squeeze (narrowing of the shoreline) with loss of intertidal habitat from the Taw Torridge SSSI. Consideration could, however, be given to controlled tidal exchange (managed flooding) through the defended line onto low-lying land between the defence line and the A361.	
		Managed Realignment is not feasible here as there is no room for it because much of the area is backed by steeply rising ground. Where realignment is possible, it would require relocation or loss of property and infrastructure that can be economically justified to defend.				
7c22 – West Ashford to Braunton (east bank of River Caen)	Hold	Continue to maintain existing defences under a **Hold the Line** policy. Investigate managed realignment opportunities.	Implement **Managed Realignment** along parts of this stretch. Continue to **Hold the Line** of the recently realigned defence at RAF Chivenor.	**Hold the Line** of the realigned defences.	Parts of the airfield at RAF Chivenor and its infrastructure, which includes a Royal Marine base, as well as agricultural land, could be lost through realignment in the medium term. Exactly how much would depend on where the defences were realigned, which would be determined by future detailed studies. Potential benefits to the Taw Torridge SSSI through the creation of intertidal habitat in areas of Managed Realignment in the medium term. A Hold the Line policy in the long term will cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat from the SSSI. Flood risk to most properties in this area would continue to be reduced by providing realigned defences. Protection of the South West Coast Path along much of this section, though some parts may need to be relocated, depending upon location of any future realignment. Potential impacts on a number of non-designated archaeological features, depending upon extent of realignment, which would be determined through further detailed study.	The objective of the Plan in this area is to investigate and, if appropriate, implement Managed Realignment to provide both flood storage and habitat creation opportunities of benefit to the wider estuary. The Ministry of Defence has already realigned defences on the landward side of the main runway at RAF Chivenor. Parts of the airfield at RAF Chivenor and agricultural land would be lost as a result of this and further realignment in the medium term. There is potential for further realignment on the western side of this section, along the east bank of the River Caen. Implementation of this policy could involve constructing a set-back defence and then making a breach in existing defences. This could occur along most or part of this section. Any areas not subject to realignment would be maintained and embankments eventually replaced with much larger structures along existing alignments. However, the impact of realigning defences is uncertain. Much more detailed study is required to assess its likely effects, both in isolation and cumulatively. The short-term policy to Hold the Line would maintain the existing defences while these studies are done. If the studies show it is inappropriate to realign defences here, then the existing defences would need to be maintained and eventually replaced with much larger structures.
		No Active Intervention here would see deterioration and eventual failure of the extensive embankment defences, resulting in uncontrolled natural realignment of the estuary in this area. This could have significant adverse impacts on sediment distribution patterns in other parts of the estuary and adjacent open coast. This would not only cause loss of property and infrastructure through flooding, but could also increase flood risk in other parts of the estuary, particularly with no management intervention to control the extent or rate of realignment.				
7c23 – Braunton to Horsey Island (west bank of River Caen)	Hold / Observe & Monitor	Continue to maintain existing embankment defences under a **Hold the Line** policy. Investigate opportunities for Managed Realignment.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	Protection from risk of flooding of homes and businesses and community, recreation and tourism facilities at Braunton, Chivenor and Wrafton. Protection from risk of flooding of the A361 and other roads and the cycle path at Braunton, Chivenor and Wrafton. Protection from flooding of sewage works and parts of the	The objective of the Plan in this area is to investigate and, if appropriate, implement Managed Realignment to provide both flood storage and habitat creation opportunities of benefit to the wider estuary. Implementation of this policy could involve constructing a set-back defence and then making a breach in the existing defences. This could occur along most or part of this section.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		No Active Intervention here would see deterioration and eventual failure of the extensive embankment defences, resulting in uncontrolled natural realignment of the estuary in this area. This could have significant adverse impacts on sediment distribution patterns in other parts of the estuary and adjacent open coast. This would not only cause loss of property and infrastructure as a result of flooding, but could also increase flood risk in other parts of the estuary, particularly with no management intervention to control the extent or rate of realignment.			airfield at RAF Chivenor. Protection from flood risk of part of the South West Coast Path. Locally and nationally important sites at Braunton Great Field and Braunton Conservation Area are at risk from flooding in the medium term. Potentially adverse impacts on the Great Sea Bank by implementing realignment. Potential benefits to the Taw Torridge SSSI by creating intertidal habitat in areas of Managed Realignment in the medium term. A Hold the Line policy in the long term will cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat from the SSSI. Change in landscape on the Heritage Coast.	Any areas not subject to realignment would be maintained and embankments eventually replaced with much larger structures along existing alignments. However, the impact of realigning defences is uncertain. Much more detailed study is required to assess its likely effects in isolation and cumulatively. The short term policy to Hold the Line would maintain existing defences while these studies are made. If the studies show that realignment is inappropriate here then the existing defences would need to be maintained and eventually replaced with much larger structures.
7c24 – Horsey Island	Hold	Continue to maintain existing embankment defences under a **Hold the Line** policy. Investigate opportunities for Managed Realignment.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	Protection of an access road. Potential benefits to the Taw Torridge SSSI by creating of intertidal habitat in areas of managed realignment in the medium term, although this could cause permanent loss of freshwater habitats in Greenaways and Freshways Marshes SSSI and Braunton Swanpool SSSI. Interim preparatory measures could be used, such as regulated tidal exchange (managed tidal flooding) over Horsey Island. A Hold the Line policy in the long term will cause coastal squeeze (narrowing of the shoreline) and eventual loss of intertidal habitat from the SSSI. Change in landscape on the Heritage Coast. Potential impacts on a number of non-designated archaeological features, depending upon extent of realignment, which would be determined through further detailed study.	The objective of the Plan in this area is to investigate and, if appropriate, implement Managed Realignment to provide both flood storage and habitat creation opportunities of benefit to the wider estuary. This policy supports the policies of the UNESCO Biosphere Reserve. Implementation of this policy could involve constructing a set-back defence and then making a breach in the existing defences. This could occur along most or part of this section. Any areas not subject to realignment would be maintained and embankments eventually replaced with much larger structures along existing alignments. However, the impact of realigning defences is uncertain. Much more detailed study is required to assess its likely effects in isolation and cumulatively. The short term policy to Hold the Line would maintain existing defences while these studies are made. If the studies show it is inappropriate to realign the defences, then the existing defences would need to be maintained and eventually replaced with much larger structures.
		No Active Intervention here would see deterioration and eventual failure of the extensive embankment defences, resulting in uncontrolled natural realignment of the estuary in this area. This could have significant adverse impacts on sediment distribution patterns in other parts of the estuary and adjacent open coast. This would not only cause loss of property and infrastructure through flooding, but could also increase flood risk in other parts of the estuary, particularly with no management intervention to control the extent or rate of realignment.				
7c25 – Horsey Island to Crow Point	Observe & Monitor	Continue to maintain existing embankment defences under a **Hold the Line** policy. Investigate opportunities for Managed Realignment.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	Protection of tourism infrastructure through Hold the Line policy. Potential benefits to the Taw Torridge SSSI by creating intertidal habitat in areas of managed realignment in the medium term, although this could cause permanent loss of freshwater habitats from Greenaways and Freshways Marshes SSSI and Braunton Swanpool SSSI. A Hold the Line policy in the long term will cause coastal squeeze	The objective of the Plan here is to investigate and, if appropriate, implement managed realignment to provide both flood storage and habitat creation opportunities of benefit to the wider estuary. Implementation of this policy could involve constructing a set-back defence and then making a breach in the existing defences. This could occur along most or part of this section.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		No Active Intervention here would see deterioration and eventual failure of the extensive embankment defences, resulting in uncontrolled natural realignment of the estuary in this area. This could have significant adverse impacts on sediment distribution patterns in other parts of the estuary and adjacent open coast. This would not only cause loss of property and infrastructure through flooding, but could also increase flood risk in other parts of the estuary, particularly given no management intervention to control the extent or rate of realignment.			(narrowing of the shoreline) and eventual loss of intertidal habitat from the SSSI. Change in landscape in North Devon AONB and Heritage Coast. Potential impact on non-designated archaeological features, depending upon extent of realignment, which would be determined through further detailed study.	Any areas not subject to realignment would be maintained, and embankments eventually replaced with much larger structures along existing alignments. However, the impact of realigning defences is uncertain. Much more detailed study is required in order to assess the likely effects of this both in isolation and cumulatively. The short-term policy to Hold the Line would maintain the existing defences while these studies are made. If the studies show it is inappropriate to realign the defences, then the existing defences would need to be maintained and eventually replaced with much larger structures.
7c26 – Crow Point & Crow Neck	Observe & Monitor	As part of a **Managed Realignment** policy, investigate the spit's importance for protecting the inner estuary, and if necessary, undertake beach recycling to maintain this feature and/or repair any breaches as necessary; to be informed by ongoing monitoring.	As part of a **Managed Realignment** policy, continue to monitor this spit and undertake beach recycling as necessary, if studies show it is important to retain this for the inner estuary. In this case, also construct a secondary embankment to provide additional defence should a breach occur.	As part of a **Managed Realignment** policy, continue to monitor this spit and undertake beach recycling as necessary, if studies show it is important to retain this for the inner estuary. The secondary defence embankment may need to be armoured if it becomes more exposed to wave action as a result of roll-back of the spit.	The proposed coastal protection measures may promote alternative processes that could affect the Braunton Burrows SSSI, Nature Reserve and SAC, as well as the UNESCO Biosphere Reserve's dunes. Natural processes will continue to develop Braunton Burrows SSSI, Nature Reserve and SAC, as well as the UNESCO Biosphere Reserve's dunes. Change in landscape in North Devon AONB and Heritage Coast. Potential impacts on a number of non-designated archaeological features.	The objective of the Plan is to work with natural processes in this area and only intervene if necessary to benefit the wider inner estuary area. If it is found to be important to maintain the spit in the medium to long term for the benefit of other parts of the inner estuary, then this could be most sustainably achieved by working with natural processes as far as possible. This could, however, ultimately be constrained with a secondary defence line. If found not to be important for the protection of the inner estuary, then little or no intervention would occur along the spit.
		It is uncertain how important Crow Point is for protecting parts of the inner estuary. A No Active Intervention policy would not provide the flexibility to intervene, should this be necessary.				
		If studies show that it is important to retain this section for the benefit of the wider inner estuary, then a policy to Hold the Line here is not economically justifiable when compared to alternative options. A Hold the Line policy would also have more adverse impacts on environmental features and work less well with natural processes, compared to managed realignment.				
7c27 – Braunton Burrows	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Natural processes will continue to develop Braunton Burrows SSSI, Nature Reserve and SAC as well as dunes in the UNESCO Biosphere Reserve.	The objective of the Plan is to allow this predominantly undefended coast to continue to evolve naturally in order to conserve its internationally-designated features.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		There are currently no defences along most of this section, and there are very few assets at risk of erosion or flooding to justify on economic grounds any future investment in defences. Such intervention would also adversely affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of the coast.			If the coastal defence structures are not maintained, then properties at Saunton would face increased flood risk and eventual loss due to erosion in the medium to long term. Support of Biosphere Reserve natural processes and provides protection of North Devon AONB and Heritage Coast from development of defences. Potential impacts on a number of non-designated archaeological features, depending upon extent of any future erosion that may occur.	It is recognised that the short defences at the northern end of this section protect properties at Saunton against flood and erosion risk. However, it is unlikely that these defences would attract public funds from the flood and coastal defence budget for maintenance and improvement. If alternative funds are available, there is no reason – from a processes point of view – why these defences could not be retained, although they would need to be much larger in the future to provide adequate levels of protection. This may be impossible to justify economically, even using alternative funds in the future.
7c28 – Saunton Down	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Loss of tourism infrastructure at Saunton Sands. Continued erosion will retain the geological exposures of the Saunton to Baggy Point SSSI. Support of Biosphere Reserve natural processes and protection of North Devon AONB and Heritage Coast from development of defences. Potential impacts on a number of non-designated archaeological features, depending upon location and extent of any future erosion.	The objective of the Plan here is to continue to allow the natural evolution of this undefended section of coast, which is designated for its environmental features.
		There are currently no defences along this section, and there are very few assets at risk of erosion to justify any intervention on economic grounds. Such intervention would also adversely affect the local environment, so policies of Hold the Line and Managed Realignment are inappropriate.				
POLICY SCENARIO AREA: SAUNTON DOWN TO BAGGY POINT (CROYDE BAY)						
7c29 – Croyde Sands	Observe & Monitor	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Homes, roads, amenities and infrastructure are at risk from fluvial flooding at Croyde village. Continued erosion will retain the geological exposures of the Saunton to Baggy Point SSSI. Support of Biosphere Reserve natural processes and protects North Devon AONB and Heritage Coast from development of defences. Potential impacts on a number of non-designated archaeological features, depending upon extent of any future erosion that may occur.	The objective of the Plan here is to continue to allow the natural evolution of this undefended section of coast, which is designated for its environmental features. The dunes are managed to deal with the erosion caused by recreation, and the channel that discharges to the sea is also managed. These management activities could continue as no intervention for the purpose of coastal defence would occur under this policy.
		There are no defences along this section, and there are very few assets at risk of erosion or flooding to justify economically any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.				
7c30 – Middleborough Hill (Croyde Bay north)	Hold	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Loss of some properties north of Croyde to erosion could occur if defences are not maintained. Continued erosion will retain the geological exposures of the Saunton to Baggy Point SSSI. Potential change to the landscape of the North Devon AONB and Heritage Coast as deteriorating coastal defence structures become unsightly. Potential impacts on a number of non-designated archaeological features, depending upon location and extent of any future erosion.	The objectives of the Plan here are to allow the natural evolution of this section of coast while managing the risk of flooding and erosion to people and property. There are short lengths of defence at the northern end of Croyde Bay. It is unlikely that these would attract public funds from the flood and coastal defence budget for maintenance and improvement. If alternative funds are available, there is no reason – from a processes point of view – why these defences could not be retained, although they would need to be replaced in the short term with much larger structures to provide adequate levels of protection. This may be impossible to
		There are very few assets at risk of flooding or erosion to justify future intervention on economic grounds. Therefore policies of Hold the Line and Managed Realignment are inappropriate.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
						justify economically, even with alternative funds in the future.
7c31 – Middleborough Hill (Croyde Bay north) to Baggy Point	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Loss of small amounts of Grade 2 and 3 agricultural land from erosion in the long term. Continued erosion will retain the geological exposures of the Saunton to Baggy Point SSSI. Support of Biosphere Reserve natural processes and protection of North Devon AONB and Heritage Coast from development of defences. Potential impacts on a number of non-designated archaeological features, depending upon extent of any future erosion that may occur.	The objective of the Plan here is to continue to allow natural evolution of this undefended section of coast, which is designated for its environmental features.
		There are no defences along this section at present, and there are no assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the area's environmental interests. Therefore policies of Hold the Line and Managed Realignment are inappropriate.				
POLICY SCENARIO AREA: BAGGY POINT TO MORTE POINT (WOOLACOMBE BAY)						
7c32 – Baggy Point to Napps Cliff (Putsborough)	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development, historic features, conservation or land areas. Continued erosion will retain the geological exposures of the Saunton to Baggy Point SSSI.	The objective of the Plan here is to continue to allow the natural evolution of this undefended section of coast, which is designated for its environmental features.
		Currently there are no defences here and no assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Therefore policies of Hold the Line and Managed Realignment are inappropriate.				
7c33 – Putsborough Sands and Vention	Hold	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Loss of the caravan park at Putsborough Sands, slipway and sections of the South West Coast Path (long term). Potential loss of isolated properties due to erosion (medium to long term) if defences are not maintained. Protection of North Devon AONB and Heritage Coast from development of defences. Potential impacts on a number of non-designated	The objectives of the Plan here are to allow the natural evolution of this section of coast while managing flood and erosion risk to people and property. Short defences at the south end of Morte Bay provide local protection against flood and erosion risk to people, property and infrastructure at Vention.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		There are very few assets at risk of flooding or erosion to justify future intervention on economic grounds. There is also no space for managed realignment, as this area is backed by steeply rising ground. Therefore policies of Hold the Line and Managed Realignment are inappropriate.			archaeological features, depending upon extent of any future erosion that may occur.	It is unlikely that these defences would attract public funds from the flood and coastal defence budget for maintenance and improvement. If alternative funds are available, there is no reason – from a processes point of view – why they could not be retained, although defences here would only be acceptable if they continue to be linear type (seawalls and revetments) and are acceptable in landscape and biodiversity terms. Groynes or other shoreline control structures would interrupt sediment transport and affect other parts of Morte Bay, so they would not be supported by the Plan. If alternative funds are available, these defences would need to be replaced in the short term with much larger structures to provide adequate levels of protection. Retention of the defences could become technically more difficult as they would exacerbate narrowing and loss of fronting beach as sea levels rise; they could also become outflanked if undefended dunes to the north erode. Therefore this may be impossible to justify economically, even using alternative funds in the future.
7c34 – Vention to Woolacombe Beach (Woolacombe Sands)	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development, historic environment or land areas. Potential loss of locally important habitats from the Woolacombe Down County Wildlife Sites. Protection of North Devon AONB and Heritage Coast from development of defences. Potential impacts on a number of non-designated archaeological features, depending upon extent of any future erosion that may occur.	The objective of the Plan here is to continue to allow the natural evolution of this undefended section of coast, which is designated for its environmental features. Current dune management could continue to deal with local erosion caused by recreation.
		Currently there are no defences along this section, and very few assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.				
7c35 – Woolacombe Beach	Observe & Monitor	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Homes, roads, amenities, the Conservation Area and infrastructure at Woolacombe village are at risk from fluvial flooding. Protection of Mill Rock SSSI from development of defences. Protection of North Devon AONB and Heritage Coast from development of defences. Potential impacts on a number of non-designated archaeological features, depending upon extent of any future erosion that may occur.	The objectives of the Plan here are to allow this section of undefended coast to evolve naturally, while managing flood and erosion risk to people and property by developing ways of adapting to the risk.
		Currently there are no defences here, and very few assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of the coast.				
7c36 – Woolacombe to Morte Point	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development, historic features, conservation or land areas. Protection of Barricane Beach SSSI and Morte Point SSSI	The objectives of the Plan here are to allow this section of undefended coast to evolve naturally, while managing flood and erosion risk to people and property by developing ways of adapting to the risk.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		There are currently no defences here, and very few assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of the coast.			from development of defences. Protection of North Devon AONB and Heritage Coast from development of defences. Potential impacts on a number of non-designated archaeological features, depending upon location and extent of any future erosion.	
POLICY SCENARIO AREA: MORTE POINT TO FORELAND POINT						
7d01 – Morte Point to Lee (west)	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development, conservation or land areas. Protection of North Devon AONB and Heritage Coast from development of defences. Potential impacts on a number of non-designated archaeological features, including Bull Point Lighthouse, depending upon location and extent of any future erosion.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences here, and no assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of the coast.				
7d02 – Lee	Hold	Maintain the existing defences to continue protection for Lee, through **Hold the Line**.	Maintain and improve the defences to continue to protection for Lee, through **Hold the Line**.	Maintain the improved defences to continue protection for Lee, through **Hold the Line**.	Homes, roads, amenities and infrastructure at Lee village are protected against the risk of coastal flooding and erosion but are at risk from fluvial flooding. Potential for defences to impact on County Wildlife Site, North Devon AONB and Heritage Coast.	The objective of the Plan here is to continue to protect people, property and infrastructure at Lee. To do so will only have local effects on coastal processes.
		No Active Intervention here would increase flood risk for property and infrastructure as defences deteriorate and fail.				
		Managed Realignment is not feasible as there is no room for it.				
7d03 – Lee (east) to Ilfracombe (west)	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development, historic features, conservation or land areas. Protection of North Devon AONB and Heritage Coast from development of defences.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences along this section, and no assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment, so policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.				
7d04 – Ilfracombe	Hold	Maintain the existing seawall and breakwater defences to continue protection for Ilfracombe, through **Hold the Line**.	Maintain the defences, eventually replacing them with larger structures, to continue protection for Ilfracombe, through **Hold the Line**.	Maintain the defences, improved in the medium term, to continue protection for Ilfracombe, through **Hold the Line**.	Protection from flood risk for homes, roads, amenities, Conservation Area and infrastructure at Ilfracombe. Potential for defences to affect Conservation Area. Protection of harbour, amenities and beach width due to erosion (long term).	The objective of the Plan here is to continue protecting people, property and infrastructure at Ilfracombe. To do so will only have local impacts on coastal processes.
		No active intervention here would result in an increased risk of flooding to property and infrastructure as defences deteriorate and fail. This would also impact on tourism; which is of importance to the economy of the wider area.				
		Managed Realignment is not feasible as there is no room for it.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
7d05 – Ilfracombe (east – Larkstone Beach) to Hele Beach (west)	Do Nothing/ Hold at Hillsborough	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Protection of Hele Samsons and Combe Martin Bay SSSI from development of defences. Protection of North Devon AONB and Heritage Coast from development of defences. Potential loss of terrestrial habitat on the coast at Hillsborough Local Nature Reserve. Potential loss of parts of the Hillsborough Promontory Fort Scheduled Monument. Loss of these features depends upon location and extent of any future erosion.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences here and very few assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.				
7d06 – Hele Beach	Hold	Maintain the existing seawall defences to continue protecting the A399, through **Hold the Line**.	Maintain the seawall defences, eventually replacing them with larger structures, to continue protecting the A399, through **Hold the Line**.	Maintain the defences, improved in the medium term, to continue protecting the A399, through **Hold the Line**.	Protection of homes, roads, amenities and infrastructure at Hele from flood risk. This policy will limit erosion of Hele Samsons and Combe Martin Bay SSSIs' geological features, thereby limiting their visible exposure. Potential loss of beach volume due to coastal squeeze (narrowing of the shoreline) against coastal defence structures. Potential for defences to affect North Devon AONB and Heritage Coast.	The objective of the Plan here is to continue protecting people, property and infrastructure at Hele. To do so will only have local effects on coastal processes.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail.				
		Managed Realignment is not feasible as there is no room for it.				
7d07 – Hele Beach (east) to Watermouth Slipway	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Minor loss of the South West Coast Path due to erosion and flooding. It would need to be moved in line with the South West Coast Path policy. Potential impacts on a number of non-designated archaeological features, depending upon location and extent of any future erosion.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are no currently defences here, and very few assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.				
7d08 – Watermouth Slipway	Hold	Maintain the existing wall defences and slipway to continue protection against flood risk, through **Hold the Line**.	Maintain the wall defences and slipway, eventually replacing them with larger structures, to continue protecting Watermouth Cove, through **Hold the Line**.	Maintain the defences, improved in the medium term, to continue protecting Watermouth Cove, through **Hold the Line**.	Protection from flood risk for the holiday park, caravan site and camp site at Watermouth Cove. Potential for defences to affect North Devon AONB and Heritage Coast.	The objective of the Plan here is to continue to protect people, property and infrastructure at Watermouth Slipway. This will only have local effects on coastal processes.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail.				
		Managed Realignment is not feasible as there is no room for it.				
7d09 – Watermouth Slipway to Combe Martin	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development, conservation or land areas. Protection of Hele Samsons and Combe Martin Bay SSSI	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		There are currently no defences here, and very few assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.			from development of defences. Protection of North Devon AONB and Heritage Coast from development of defences. Potential impacts on a number of non-designated archaeological features, depending upon location and extent of any future erosion.	
7d10 – Combe Martin	Hold	Maintain the existing seawall defences to continue protecting Combe Martin, through **Hold the Line**.	Maintain the defences, eventually replacing them with larger structures, to continue protecting Combe Martin, through **Hold the Line**.	Maintain the defences, improved in the medium term, to continue protecting Combe Martin, through **Hold the Line**.	Protection of community, recreational and amenity facilities from erosion. Reduction of beach width here due to erosion (long term). Protection of homes, roads, amenities and infrastructure from flood risk. Potential impact on Hele Samsons and Combe Martin Bay SSSI from development of defences. Protection of Exmoor National Park from development of defences.	The objective of the Plan here is to continue protecting people, property and infrastructure at Combe Martin, which will only have local effects on coastal processes.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail. This would also affect tourism, which is important to the economy of the wider area.				
		Managed Realignment is not feasible as there is no room for it.				
7d11 – Combe Martin to Lynmouth	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development or land areas. Protection of Exmoor National Park from development of defences. Potential loss of terrestrial habitat due to natural processes at West Exmoor Coast and Woods SSSI, Exmoor Coastal Heaths SSSI and Exmoor Heath and Coast SAC. Potential loss of a number Scheduled Monuments, Listed Buildings and non-designated archaeological features. Loss of these features depends upon location and extent of any future erosion.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences along the majority of this frontage (except at Lee Bay) and very few assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.				
7d12 – Lynmouth	Hold	Maintain the existing seawall defences to continue protection for Lynmouth, through **Hold the Line**.	Maintain the seawall defences, eventually replacing them with larger structures, to continue protection for Lynmouth, through **Hold the Line**.	Maintain the defences, improved in the medium term, to continue protection for Lynmouth, through **Hold the Line**.	Protection of homes, local amenities and tourism infrastructure from flooding. Loss of beach width due to coastal squeeze (narrowing of the shoreline) against defence assets. Potential impacts on Exmoor Coastal Heaths SSSI and Exmoor Heath and Coast SAC	The objective of the Plan here is to continue protecting people, property and infrastructure at Lynmouth, which will only have local effects on coastal processes.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail. This would also affect tourism, which is important to the economy of the wider area.				
		Managed Realignment is not feasible as there is no room for it.				
7d13 – Lynmouth to Foreland Point	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development or land areas. Potential loss of terrestrial habitat due to natural processes at Exmoor Coastal Heaths SSSI and Exmoor Heath and	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		There are currently no defences here and very few assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.			Coast SAC. Potential loss of a number Scheduled Monuments and the Listed Building of Foreland Lighthouse. Loss of these features depends upon location and extent of any future erosion. Protection of Exmoor National Park from development of defences	
POLICY SCENARIO AREA: FORELAND POINT TO HURLSTONE POINT						
7d14 – Foreland Point to Gore Point	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development or land areas. Potential loss of terrestrial habitat due to natural processes at Exmoor Coastal Heaths SSSI and Exmoor Heath and Coast SAC, Glenthorne SSSI, and Culbone Woods County Wildlife Site. Potential loss of a number Scheduled Monuments and Listed Buildings. Loss of these features depends upon location and extent of any future erosion.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences here and very few assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.				
7d15 – Gore Point to Porlock Weir	Observe & Monitor	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development, historic features, or land areas. The impact of natural processes on Porlock Ridge and Salt Marsh SSSI is unclear. Further study and monitoring is required.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences here and very few assets at risk of erosion or flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate for most of this coast.				
7d16 – Porlock Weir	Hold	Maintain the existing defences to continue protecting Porlock Weir, through **Hold the Line**, while preparing measures to move towards the medium term policy.	Allow natural coastal evolution to occur by moving towards a policy of **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Protection of homes, tourism facilities, listed buildings and local infrastructure at Porlock Weir in the short term. In the medium and long term, these assets would be at risk of flooding and erosion as a result of the move to No Active Intervention. The impact of natural processes on Porlock Ridge and Salt Marsh SSSI is unclear. Further study and monitoring is required. Protection of the Heritage Coast from development of defences.	The objectives of the Plan here are to allow this section of coast to evolve naturally in the long term, while managing flood and erosion risk to people and property in the short to medium term by developing ways of adapting to the risk. Defences at Porlock Weir would need to withstand the increased exposure to wave action that would follow as the adjacent areas retreat when sea level rises, making this area more prominent along the shoreline. This would make it technically more difficult to sustain defences and is unlikely to be economically justifiable. Therefore the existing defences would be maintained for as long as technically possible during the short term and into the medium term. This would allow ways of adapting to flood risk to be developed and implemented before the move to No Active Intervention in the medium term.
		To Hold the Line at Porlock Weir would require existing defences to be replaced in the short term with much larger structures. This is unlikely to be economically justifiable nor technically sustainable as adjacent sections retreat. Construction of larger structures would also adversely impact upon the landscape character of this area; and impede the natural functioning of the Porlock Bay system, which is the aim of ongoing management practice in the rest of the Bay.				
		Managed Realignment is not feasible as there is no room for it.				
7d17 – Porlock Weir to Hurlstone Point	Retreat	Construct and maintain embankment defences to reduce the risk of flooding to Porlock and	Maintain, and if necessary armour, embankment defences to reduce the risk of flooding to	Continue to maintain and improve embankment defences to reduce the risk of flooding to	Erosion of the gravel barrier is not predicted to affect local infrastructure as the flood risk here is from fluvial, not tidal, sources.	The policy of 'Managed Realignment' along this section of Porlock Bay seeks to provide a more sustainable solution, working with the natural processes along this stretch, which are predicted to cause roll back further breaching of

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		Bossington whilst allowing the shingle ridge to evolve naturally (though reserving the ability to intervene with beach recycling if necessary), under a **Managed Realignment** policy.	Porlock and Bossington whilst allowing the shingle ridge to evolve naturally (though reserving the ability to intervene with beach recycling if necessary), under a **Managed Realignment** policy.	Porlock and Bossington whilst allowing the shingle ridge to evolve naturally (though reserving the ability to intervene with beach recycling if necessary), under a **Managed Realignment** policy.	Secondary defences will reduce the risk of flooding of residential properties, tourist and local infrastructure at Porlock Weir, Porlock, Allerton and Bossington and its Conservation Area. The gravel ridge will continue to roll back, with the associated geomorphological change to the Porlock Ridge and Salt Marsh SSSI. However secondary defences will ultimately limit this where they are constructed. Loss of a number of Scheduled Monuments located in the low-lying flood plain as shoreline moves landwards.	the shingle ridge as sea levels rise. Under this policy, whilst the shingle ridge would be allowed to evolve largely naturally, construction of set-back embankment defences could provide protection against the risk of flooding to developed areas such as Porlock and Bossington. Any set-back defences would also need to consider the risk of fluvial flash flooding from the streams that flow through these areas.
		There are currently no defences along this section and very few assets at risk of erosion or tidal flooding to justify, on economic grounds, any future investment in defences. Properties would remain at risk of fluvial flooding but this is outside the remit of the SMP. Therefore policies of Hold the Line and Managed Realignment are inappropriate.				
POLICY SCENARIO AREA: HURLSTONE POINT TO HINKLEY POINT						
7d18 – Hurlstone Point to Minehead (west)	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development, historic features, conservation or land areas. Potential loss of terrestrial habitat due to natural processes at Exmoor Coastal Heaths SSSI and Exmoor Heath and Coast SAC.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences here, and very few assets at risk of erosion or tidal flooding to justify on economic grounds, any future investment in defences. Therefore policies of Hold the Line and Managed Realignment are inappropriate.				
7d19 – Minehead	Hold	Maintain and improve the existing defences to continue to provide protection to Minehead, through **Hold the Line**.	Maintain and further improve the existing defences to continue protection for Minehead, through **Hold the Line**.	Maintain and further improve the existing defences to continue protection for Minehead, through **Hold the Line**.	Protection from flooding for homes, roads, railways, amenities and tourism infrastructure. Protection from erosion of the harbour, places of worship, part of Quay Street, the esplanade, slipway and some seafront properties. Protection of the West Somerset Coastal Path from flooding along low-lying sections. Potential for defences to affect the Heritage Coast.	The objective of the Plan here is to continue to protect people, property and infrastructure at Minehead. This is likely to continue to affect down-drift areas further east of Minehead by reducing sediment supply to those areas.
		No active intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail. This would also affect tourism which is important the economy of the wider area.				
		Managed Realignment is not feasible as there is no room for it.				
7d20 – The Warren (Minehead Golf Course)	Observe & Monitor	Continue to provide protection by maintaining existing embankment defences, supported by beach recycling, under a policy of **Hold the Line**. Investigate Managed Realignment opportunities and construct a secondary defence embankment inland to protect Minehead against flood risk.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	Loss of parts of the golf course due to realignment, although this depends on where the realigned defences are sited. The West Somerset Coastal Path would need to be moved inland as part of any realignment as the existing route would be lost.	The objective of the Plan here is to protect Minehead against flood risk from this area in a sustainable way and working with natural processes as far as possible. This area provides a headland control point to the evolution of Minehead Bay, but already experiences significant erosion which will only increase as sea levels rise. Too reduce the risk of 'back door' flooding to Minehead from overtopping or even breaching in this area, a secondary defence embankment should be constructed in the short term.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		No Active Intervention here would increase flood risk to property and infrastructure in the wider Minehead area as defences deteriorate and fail. This would also affect tourism which is important to the economy of the wider area.				This area is underlain by cobble/shingle deposits. Managed Realignment in the medium term – likely back to the secondary defence line constructed in the short term – could then allow erosion of the cobble/shingle. This additional shoreline sediment could benefit this and down-drift frontages. However, further detailed investigation of this potential is required in the short term. The realigned defence position would be maintained as the primary defence line in the long term. This is thought likely to benefit the Minehead frontage by retaining this area to help control the evolution of the frontage.
		To hold the existing line of defence here would require construction of shoreline control structures and beach recharge, which is not economically sustainable compared to realignment. Works to Hold the Line here would also have more significant implications for management of down-drift areas at Dunster Beach.				
7d21 – Dunster Beach	Observe & Monitor	Continue protection by maintaining existing embankment and timber groyne defences, supported by beach recycling, under a policy of **Hold the Line**. Investigate opportunities for Managed Realignment, and construct a secondary defence embankment inland to protect Minehead against flood risk.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	Depending on the location of the realigned defences, homes, roads, the West Somerset Railway and associated facilities and community and tourist infrastructure may face increased flood risk. Protection of Dunster Castle Conservation Area from flooding. Dunster Park and Heathlands SSSI is not at risk from flooding or erosion. Benefit of creating intertidal habitat to offset coastal squeeze (narrowing of the shoreline) occurring along the coast in the medium term. Potential loss of intertidal habitat in the long term due to coastal squeeze (narrowing of the shoreline). The West Somerset Coastal Path would need to be moved inland as part of any realignment as its existing route would be lost. Potential loss of a number of non-designated archaeological features, depending upon extent of realignment; this would be determined by further detailed study.	The objective of the Plan here is to protect Minehead against flood risk from this area in a sustainable way, working with natural processes as far as possible. Currently private defences in the form of groynes and beach management retain a fairly healthy beach here but it remains susceptible to overtopping that floods the low-lying hinterland. This poses a risk of 'back door' flooding to Minehead that could be reduced by constructing a secondary defence embankment in the short term. This could be seaward of the West Somerset Railway in order to preserve the line, as along the coast to the east. However, a more detailed investigation is required into exactly where the realigned position should be. Management activities on Dunster Beach would be permitted to continue under this policy. However these are likely to become unsustainable in the medium to long term as sea levels rise and the beach attempts to roll back landwards. As this occurs, the secondary defence embankment could become the primary defence line and may need to be armoured in the future as a result.
		No Active Intervention here would increase flood risk to property and infrastructure in the wider Minehead area as defences deteriorate and fail.				
		To hold the existing line of defence here would become economically and technically unsustainable in the medium to long term compared to realignment.				
7d22 – Dunster Beach (east) to Ker Moor	Observe & Monitor	Investigate and implement construction of set-back defence embankment under a policy of **Managed Realignment**.	**Hold the Line** of the realigned defence through continued maintenance.	**Hold the Line** of the realigned defence through continued maintenance and improvement.	Dependent on the location of the realigned defences, West Somerset Railway and associated facilities may face increased flood risk. Benefit of creating intertidal habitat to offset coastal squeeze (narrowing of the shoreline) along the coast in the	The objective of the Plan here is to protect Minehead against flood risk from this area in a sustainable way, working with natural processes as far as possible. This section is currently undefended as it's only fronted by a shingle ridge that is likely to roll back landwards as sea

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		No Active Intervention here would increase flood risk to property and infrastructure in the wider Minehead area as sea level rise causes roll-back and overtopping of the undefended shingle ridge.			short term. Potential loss of intertidal habitat in the medium to long term due to coastal squeeze (narrowing of the shoreline). Potential loss of a number of non-designated archaeological features, depending upon extent of realignment; this would be determined by further detailed study.	levels rise. This would increase flood risk to the low-lying hinterland. Along the eastern part of this frontage in particular, the West Somerset Railway is very close to the shoreline and would be vulnerable in the short term. A set-back defence embankment, possibly armoured in parts, could be constructed seawards of the railway in the short term and then maintained. This would help preserve the line and support like policies along the coast to east and west. Defence here could also reduce the risk of outflanking to the recently constructed defences at Blue Anchor.
7d23 – Blue Anchor	Hold	Maintain the existing seawall and rock revetment defences, and replace defences at the eastern end near the Blue Anchor Hotel, extending them a little to the east, to continue protecting people, property and the B3191 from flood risk, through **Hold the Line**.	Maintain the defences to continue protection against flood and erosion risk, through **Hold the Line**.	Allow natural coastal evolution to occur by moving towards a policy of **No Active Intervention**, with implementation of local **Managed Realignment** if necessary to protect the railway.	Protection from flooding and erosion for homes, roads, the West Somerset Railway and associated facilities, and community and tourism infrastructure. However in the long term these assets, including the B3191, will become at risk. This policy will limit natural processes that are key to the integrity of Blue Anchor to Lilstock SSSI's geological features, thereby limiting the visible exposures. However in very long term, the move towards No Active Intervention would reduce this impact. Loss of a number of non-designated archaeological features once policy moves to No Active Intervention.	The objective of the Plan here is to protect Blue Anchor against flood and erosion risk as long as it's economically sustainable. In the short term the recently constructed defences at Blue Anchor would continue to be maintained. At the eastern end of this section, new defences – likely to be rock armour – would have to be constructed to replace older defences. This is needed to reduce the risk of outflanking to the road here through continued cliff erosion. These new defences are likely to have to extend eastwards a short way. In the long term, much larger defences would be required to replace the existing ones and would be unlikely to attract public funds in the future. Also, alternative routes to the B3191 are readily available to link Blue Anchor and Chapel Cleeve. Further defence for this purpose is unlikely to be justified. Therefore in the long term there would be a move towards No Active Intervention here. At the western end, local Managed Realignment could occur to protect the railway as it turns inland. This would only be justified in support of policies in adjacent sections to the west if the railway is also protected in those areas – something that's envisaged as part of this assessment. If this were not the case, then this part would also be subject to No Active Intervention.
		No Active Intervention in the short to medium term would mean a waste of the recent investment in defences at Blue Anchor which would deteriorate and fail, increasing flood risk to property and infrastructure.				
		There are very few assets at risk of tidal flooding or erosion in the long term. When existing defences need replacing in the long-term, the investment is unlikely to be economically viable.				
7d24 – Blue Anchor to Watchet	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	This policy will limit natural processes that are key to the integrity of Blue Anchor to Lilstock SSSI's geological features, thereby limiting the visible exposures. However, in very long term the move towards No Active Intervention would reduce this impact. Erosion reducing the extent of the County Wildlife Site	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences here and very few assets at risk of erosion or tidal flooding to justify, on economic grounds, any future investment in defences.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		Therefore policies of Hold the Line and Managed Realignment are inappropriate.			(CWS) at the Blue Anchor Hotel Field, Cridlands Corpse, Blue Anchor. Though there would be protection of sections of the CWS at Blue Anchor from erosion. Potential loss of parts of Daw Castle Scheduled Monument and a number of non-designated archaeological sites. Loss of these features depends upon where erosion occurs in the future. Loss of Grade 3 agricultural land to flooding and erosion.	
7d25 – Watchet to Doniford	Hold	Maintain the existing seawall and breakwater defences, with eventual replacement of some defences with larger structures, to continue protection against flood and erosion risk, through **Hold the Line**.	Maintain the defences, eventually replacing those not replaced in short term with larger structures, to continue protection against flood and erosion risk, through **Hold the Line**.	Maintain the defences to continue protection against flood and erosion risk, through **Hold the Line**.	Protection from erosion of some homes and businesses, the harbour, some of the allotments, a place of worship, a museum and a small part of the West Somerset Railway. Protection of two substations and the Conservation Area at Watchet from flooding. This policy will limit natural processes that are key to the integrity of Blue Anchor to Lilstock SSSI's geological features thereby limiting the visible exposures. However in very long term, the move towards No Active Intervention would reduce this impact. Protection from erosion of sections of the CWS from Blue Anchor to Lilstock Cliffs.	The objective of the Plan here is to continue protecting Watchet from flood and erosion risk. Defences protect the West Somerset Railway towards Doniford at the western end of this section. Under this policy these defences could be maintained and improved to continue preserving the railway. This would support like policies on other parts of this coast to the west. If the railway was not protected by policies to the west, then justification for retaining defences here would be doubtful.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail. This would also affect tourism, which is important to the economy of the wider area.				
		Managed Realignment is not feasible as there is no room for it.				
7d26 – Doniford to St Audries Bay	Observe & Monitor	Maintain the existing rock armour defences to continue protection for Doniford Holiday Park, through **Hold the Line**, while preparing measures to move towards the medium term policy.	Allow natural coastal evolution to occur by moving towards a policy of **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Doniford Holiday Park with its tourism facilities is at risk of erosion because of the move towards No Active Intervention in the medium to long term. This policy will limit natural processes that are key to the integrity of Blue Anchor to Lilstock SSSI's geological features, thereby limiting the visible exposures. However, in very long term, the move towards No Active Intervention would reduce this impact. Erosion could reduce in size the County Wildlife Site at Doniford. Loss of Grade 3 agricultural land from flooding and erosion. Potential loss of a number of non-designated archaeological sites. Loss of these features depends upon where erosion occurs in the future.	The objectives of the Plan are to allow this coast to evolve naturally in the long term, while managing flood and erosion risk to people and property in the short to medium term by developing ways of adapting to the risk. This section is largely undefended, although there are rock revetment defences fronting Doniford Holiday Park. It is unlikely that these would attract public funds from the flood and coastal defence budget to maintain and improve them. If alternative funds are available for this purpose, there is no reason from a processes point of view why these defences could not be retained. However, they would need to be replaced in the short term with much larger structures to provide adequate protection. Retention of defences here could also become technically more difficult: they would exacerbate narrowing and loss of beach as sea levels rise and could also become outflanked as the undefended cliffs on either side erode. There would be less beach to attract visitors to the area, which could affect the viability of the Holiday Park. Therefore this may be impossible to justify economically, even using alternative funds in the future.
		To Hold the Line at Doniford Holiday Park would require the replacement of defences with much larger ones to provide adequate protection in the future. This is unlikely to be economically viable. To retain defences here would also likely exacerbate coastal squeeze (narrowing of the shoreline), resulting in narrowing or even loss of the fronting beach.				
		Managed Realignment is unfeasible because there is little room for it and it would also cause loss of assets.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
7d27 – St Audries Bay	Observe & Monitor / Hold	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	This policy will limit natural processes that are key to the integrity of Blue Anchor to Lilstock SSSI's geological features, thereby limiting the visible exposures. However, in very long term, the move towards No Active Intervention would reduce this impact. Erosion could reduce in size the CWS at the Blue Anchor to Lilstock Cliff and Hinkley Point. Risk of erosion to holiday village and cliff top properties. Potential loss from erosion of a small section of the registered park and garden at St Audries. Potential loss of a number of non-designated archaeological sites. Loss of these features depends upon where erosion occurs in the future.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences here, and very few assets at risk of erosion or tidal flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate.				
7d28 – St Audries Bay to Lilstock	Do Nothing	Allow natural coastal evolution to continue through **no active intervention**.	Allow natural coastal evolution to continue through **no active intervention**.	Allow natural coastal evolution to continue through **no active intervention**.	This policy will limit natural processes that are key to the integrity of Blue Anchor to Lilstock SSSI's geological features, thereby limiting the visible exposures. However, in very long term, the move towards No Active Intervention would reduce this impact. Erosion could reduce in size the CWS at the Blue Anchor to Lilstock Cliff. Loss of Grade 3 agricultural land to erosion. Potential loss of a number of non-designated archaeological sites. Loss of these features depends upon where erosion occurs in the future.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences here, and very few assets at risk of erosion or tidal flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate.				
7d29 – Lilstock	Hold	Maintain the existing embankment/gabion defences to continue protection against flooding, through **Hold the Line**, while preparing to move towards the medium term policy.	Allow natural coastal evolution by moving towards a policy of **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	This policy will limit natural processes that are key to the integrity of Blue Anchor to Lilstock SSSI's geological features thereby limiting the visible exposures. However, in very long term, the move towards No Active Intervention would reduce this impact. Erosion could reduce in size the CWS at the Blue Anchor to Lilstock Cliff. Loss of Grade 3 agricultural land to flooding and erosion.	The objective of the Plan here is to continue to allow this section of coast to evolve naturally in the long term. The short defence at Lilstock protects very few assets in the small area of lower-lying hinterland. A policy of No Active Intervention would not put any more assets at risk of flooding but would allow the beach in this area to roll back landwards as sea levels rise.
		There is very little flood or erosion risk to justify, on economic grounds, any future investment in defences at Lilstock. Therefore long term policies of Hold the Line and Managed Realignment are inappropriate.				
7d30 – Lilstock to Hinkley Point	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	This policy will limit natural processes that are key to the integrity of Blue Anchor to Lilstock SSSI's geological features, thereby limiting the visible exposures. However, in very long term, the move towards No Active Intervention would reduce this impact. Loss of Grade 3 agricultural land to flooding and erosion.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences here, and very few assets at risk of erosion or tidal flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the local environment. Therefore policies of Hold the Line and Managed Realignment are inappropriate.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
POLICY SCENARIO AREA: HINKLEY POINT TO BREAN DOWN						
7d31 – Hinkley Point	Hold	Maintain the existing seawall defences, and construct new seawall defences along the shoreline to the west, to continue protection against of flood and erosion risk, through **Hold the Line**.	Maintain the defences to continue protection against flood and erosion risk, through **Hold the Line**.	Maintain the defences to continue protection against flood and erosion risk, through **Hold the Line**.	Protection of Hinkley Point Nuclear Power Station and outfall pipes from erosion on the western edge of the site. The landfill sites here are not susceptible to erosion or flooding. If the power station's site is extended westwards, there is likely to be loss of some intertidal habitat through coastal squeeze (narrowing of the shoreline). This could affect Bridgwater Bay SSSI and National Nature Reserve, Severn Estuary SAC, SPA, Ramsar Site and Hinkley Point CWS. This could also impact upon a number of non-designated archaeological sites.	The objective of the Plan here is to continue to provide protection against flood and erosion risk to Hinkley Point Nuclear Power Station. This also covers the proposed extension about 1km westwards along the shore as part of the site's expansion and the development of Hinkley Point 'C'. Continued defence here will reduce the amount of sediment transported around Hinkley Point from west to east towards the mouth of the Parrett. This would occur regardless of any effects of a proposed jetty that may be built as part of the Power Station extension.
		Policies of Managed Realignment and No Active Intervention are inappropriate as they would expose currently defended areas at Hinkley Point Nuclear Power Station to increased flood and erosion risk.				
7d32 – Hinkley Point to Stolford	Hold	Continue to maintain existing embankment defences under a **Hold the Line** policy. Investigate opportunities for Managed Realignment.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	Potential benefits to the Bridgwater SSSI and National Nature Reserve, Severn Estuary SAC, SPA and Ramsar by creating intertidal habitat in areas of Managed Realignment in the medium term. A Hold the Line policy in the long term will cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat. Depending where the realigned defences are, small areas of agricultural land will be permanently lost. Protection from flooding of homes, businesses and roads at Stolford as it's anticipated that the realigned position would be in front of this area. Power lines running from Hinkley Point are located in the floodplain. Managed realignment would need to consider the implications for these assets; these could be defended locally or may need to be relocated.	The objective here is to continue to protecting Hinkley Point Nuclear Power Station from flood risk in a sustainable way, working with natural processes. There is potential to realign defences to a more sustainable position in the medium to long term as existing defences reach the end of their effective life and need to be replaced. Implementing this requires more detailed study but could involve constructing and maintaining a set-back defence embankment. Realignment here could deepen the bay which would further reduce the potential for sediment to be transported eastwards, towards the mouth of the Parrett.
		No Active Intervention would cause the uncontrolled natural realignment of the low-lying land as defences deteriorate and fail. This could adversely affect critical power lines as they approach Hinkley Point.				
		To hold the existing line of defence here would be economically and technically less sustainable compared to realignment. Holding the existing defence line would also exacerbate the effects of coastal squeeze (narrowing of the shoreline) on environmentally designated intertidal habitats.				
7d33 – Stolford	Observe & Monitor	Continue maintaining existing embankment defences under a **Hold the Line** policy. Investigate Managed Realignment opportunities.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	Protection from flooding of homes, businesses and roads at Stolford, as well as listed buildings at Stolford Farm, as it's anticipated that the realigned position would be in front of this area. Potential benefits to the Bridgwater SSSI and National Nature Reserve, Severn Estuary SAC, SPA and Ramsar site through the creation of intertidal habitat in areas of Managed Realignment in the medium term. A Hold the Line policy in the long term will cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat.	The objective of the Plan here is to continue protecting Hinkley Point Nuclear Power Station and Stolford village against flood risk in a sustainable way, working with natural processes. The defences could be realigned to a more sustainable position in the medium to long term as they reach the end of their effective life and need to be replaced. Implementation of this requires more detailed study but could involve construction and maintenance of a set-back defence embankment. Realignment here could mean this frontage becoming less of a barrier to longshore transport of sediment eastwards, towards the mouth of the estuary. Realignment here may therefore reduce the effects of realignment immediately to the west.
		No Active Intervention would result in the uncontrolled natural realignment of the low-lying land here as defences deteriorate and fail. This would also increase flood risk to people, property and critical infrastructure to the immediate west.				
		To hold the existing line of defence here would be economically and technically less sustainable than realignment. Holding the existing defence line would also exacerbate coastal squeeze (narrowing of the shoreline) impacts on environmentally designated intertidal habitats.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
7d34 – Stolford to Wall Common	Observe & Monitor	Investigate and implement construction of set-back defence embankment under a policy of **Managed Realignment**.	**Hold the Line** of the realigned defence through continued maintenance.	**Hold the Line** of the realigned defence through continued maintenance. Depending on how the rest of the Steart Peninsula evolves, it may be necessary to move towards **No Active Intervention** during this period.	Potential benefits to the Bridgwater SSSI and National Nature Reserve, Severn Estuary SAC, SPA and Ramsar site by creating intertidal habitat in areas of Managed Realignment in the medium term. A Hold the Line policy in the long term will cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat. The low-lying County Wildlife Site at Wall Common West is inside the proposed Managed Realignment so would be affected by it. Some agricultural land will be permanently lost, though exact areas involved depend upon extent of realignment. Power lines running from Hinkley Point are located in the floodplain. Managed realignment, and the possible long-term move to No Active Intervention, would need to consider the implications for these assets; these could be defended locally or may need to be relocated. Potential impacts on a number of non-designated archaeological features, depending upon extent of realignment, which would be determined through further detailed study.	The objective of the Plan in this area is to investigate and, if appropriate, implement Managed Realignment to create habitat of benefit to the wider Severn and Parrett estuaries. Opportunities for Managed Realignment to create habitat here are currently under detailed investigation and consultation as part of the Steart Managed Realignment Project. This project is looking at options for realignment that involve constructing a set-back defence to protect critical infrastructure, such as power lines and access to Hinkley Point Nuclear Power Station, against flood risk. Options from the realignment study for creating habitat on the eastern side of Steart Peninsula in the short term could 'buffer' a transition towards No Active Intervention in the medium to long term, by creating inter-tidal habitat in these areas in a managed way, prior to this occurring naturally as a result of longer term no active intervention.
		No Active Intervention would result in the uncontrolled natural realignment of the low-lying land here as defences deteriorate and fail. This would also increase flood risk to people, property and infrastructure.				
		To hold the existing line of defence here would be economically and technically less sustainable than realignment. Holding the existing defence line would also exacerbate the effect of coastal squeeze (narrowing of the shoreline) on environmentally designated intertidal habitats.				
7d35 – Steart Village	Observe & Monitor	Maintain the existing defences to protect Steart village, through **Hold the Line**, while preparing measures to move towards the medium term policy.	Allow natural coastal evolution to occur by moving towards a policy of **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Potential benefits to the Bridgwater SSSI and National Nature Reserve, Severn Estuary SAC, SPA and Ramsar site through the creation of intertidal habitat as a result of the move to No Active Intervention. Loss of property and infrastructure at Steart village in the medium term, as policy moves towards No Active Intervention. Power lines running from Hinkley Point are located in the Steart area. The move to No Active Intervention would need to consider the implications for these assets; these may need to be defended locally or may need to be relocated.	The objectives of the Plan for the Parrett Estuary are to return it to a more natural, less constrained state, and to continue to defend against flood risk in a sustainable way where it is environmentally acceptable and economically viable. As adjacent areas retreat, this area would become more exposed along the shoreline, so existing defences would need to be replaced in the short term with much larger structures. This would make it technically more difficult to sustain defences here and also unlikely to be economically justifiable. Therefore existing defences would be maintained for as long as technically possible during the short term and into the medium term. This will allow the implications of moving to a No Active Intervention policy to be fully investigated to help in planning how to adapt to any increased flood risk. Options from the realignment study for creating habitat on the eastern side of Steart Peninsula in the short term could 'buffer' a transition towards No Active Intervention in the medium to long term, by creating inter-tidal habitat in these areas in a managed way, prior to this occurring naturally as a result of longer term no active intervention. Removing defences here could affect the east bank of the Parrett Estuary around the Huntspill River. However, these effects are best dealt with by managing the east bank rather than this part of the Steart Peninsula.
		To hold the line at Steart village would require existing defences to be replaced in the short term with much larger structures, which is unlikely to be economically justifiable. A Hold the Line policy in the long term will also cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat.				
		There are very few assets at risk of flooding, so a policy of Managed Realignment to protect 'inland' property and infrastructure by constructing set-back defences is unlikely to be economically justifiable.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
7d36 – Steart Village (east) to Fenning Island	Observe & Monitor	Maintain the existing defences to continue protection for Steart village, through **Hold the Line**, while preparing measures to move towards the medium term policy.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Potential benefits to the Bridgwater SSSI and National Nature Reserve, Severn Estuary SAC, SPA and Ramsar site by creating intertidal habitat as a result of the move to No Active Intervention. Power lines running from Hinkley Point are located in the Steart area. The move to No Active Intervention would need to consider the implications for these assets; these may need to be defended locally or may need to be relocated. Loss of a number of non-designated archaeological features as a result of the move to No Active Intervention.	The objectives of the Plan for the Parrett Estuary are to return it to a more natural, less constrained state, and to continue defending against flood risk in a sustainable way where this is environmentally acceptable and economically viable. The existing defences could be maintained for as long as technically possible during the short term and into the medium term, to support similar measures in adjacent policy units. This will allow the implications of moving to a No Active Intervention policy to be fully investigated to help in planning how to adapt to any increased flood risk. Options from the realignment study for creating habitat on the eastern side of Steart Peninsula in the short term could 'buffer' a transition towards No Active Intervention in the medium to long term, by creating inter-tidal habitat in these areas in a managed way, prior to this occurring naturally as a result of longer term no active intervention. Removing defences here could affect the east bank of the Parrett Estuary around the Huntspill River. However, these effects are best dealt with by managing the east bank rather than this part of the Steart Peninsula.
		To Hold the Line here would require existing defences to be replaced in the short term with much larger structures, which is unlikely to be economically justifiable. A Hold the Line policy in the long term will also cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat.				
		With very few assets at risk of flooding, a policy of Managed Realignment to protect 'inland' property and infrastructure by constructing set-back defences is unlikely to be economically justifiable.				
7d37 – Fenning Island to Combwich	Observe & Monitor	Maintain the existing defences to continue protection from flood risk, through **Hold the Line**, while preparing measures to move towards the medium term policy.	Allow natural coastal/estuary evolution by moving towards a policy of **No Active Intervention**.	Allow natural coastal/estuary evolution to continue through **No Active Intervention**.	Potential benefits to the Bridgwater SSSI and National Nature Reserve, Severn Estuary SAC, SPA and Ramsar site by creating intertidal habitat as a result of the move to No Active Intervention. Possible increased flood risk to properties in lower-lying parts of Stockland Bristol. Potential movement of the estuary low-water channel. Power lines running from Hinkley Point are located in the Steart area. The move to No Active Intervention would need to consider the implications for these assets; these may need to be defended locally or may need to be relocated.	The objectives of the Plan for the Parrett Estuary are to return it to a more natural, less constrained state, and to continue defending against flood risk in a sustainable way where it is environmentally acceptable and economically viable. Continued maintenance of defences along the outer west bank of the Parrett Estuary in the short to medium term would support any realignment of the open coast of the Steart Peninsula and also continue to constrain the estuary's low water channel. Therefore the potential for changes that could cause the low-water channel to swing anti-clockwise and affect the east bank of the estuary will be reduced for the immediate future. This will allow the implications of moving to a No Active Intervention policy to be fully investigated in the short term, to help in planning how to adapt to any increased flood risk. Options from the realignment study for creating habitat on the eastern side of Steart Peninsula in the short term could 'buffer' a transition towards No Active Intervention in the medium to long term, by creating inter-tidal habitat in these areas in a managed way, prior to this occurring naturally as a result of longer term no active intervention.
		To Hold the Line here would require existing defences to be replaced in the short term with much larger structures, which is unlikely to be economically justifiable. A Hold the Line policy in the long term will also cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat.				
		With very few assets at risk of flooding, a policy of Managed Realignment to protect 'inland' property and infrastructure by constructing set-back defences is unlikely to be economically justifiable.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
7d38 – Combwich	Hold	Maintain the existing flood wall defences, eventually replacing them with larger structures, to continue protection against flood risk, through **Hold the Line**.	Maintain the defences, improved in the short term, to continue protection against flood risk, through **Hold the Line**.	Maintain the defences to continue protection against the risk of flooding, through **Hold the Line**.	Protection of homes, businesses and infrastructure at Combwich against flood risk. Potential for habitat loss due to coastal squeeze (narrowing of the shoreline) where defences are held, adversely affecting Bridgwater Bay SSSI and National Nature Reserve, Severn Estuary SAC, SPA and Ramsar site. Potential for changes in the morphology of the outer estuary – as a result of realignment/No Active Intervention – to cause siltation of the river channel at Combwich. This could affect navigation and access for commercial shipping, but requires more detailed investigation.	The objectives of the Plan for the Parrett Estuary are to return it to a more natural, less constrained state and to continue to defend against flood risk in a sustainable way where it is environmentally acceptable and economically viable. It is likely to be economically viable to continue to reduce flood risk to people, property and infrastructure at Combwich.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail.				
		Managed Realignment is not feasible as there is no room for it without causing loss of property and infrastructure.				
7d39 – Combwich to Bridgwater (Parrett west)	N/A	Continue to maintain existing embankment defences under a **Hold the Line** policy. Investigate opportunities for implementing Managed Realignment in the long term.	Implement **managed realignment** along this stretch.	**Hold the line** of the realigned defence.	Potential benefits to the Bridgwater SSSI and National Nature Reserve, Severn Estuary SAC, SPA and Ramsar site by creating intertidal habitat in areas of Managed Realignment in the medium term. A significant area of agricultural land would be permanently lost through Managed Realignment, although the exact areas depend upon extent of realignment. Potential impacts on a number of non-designated archaeological features, depending upon extent of realignment, which would be determined through further detailed study. Continued protection of many properties, including those at Cannington and Chilton Trinity, and roads against flood risk, although some properties may be lost depending upon extent of realignment. Power lines running from Hinkley Point are located in the floodplain. Managed realignment would need to consider the implications for these assets; these could be defended locally or may need to be relocated.	The objectives of the Plan for the Parrett Estuary are to return it to a more natural, less constrained state, and to continue to defend against flood risk in a sustainable way where it's environmentally acceptable and economically. The Parrett Estuary Flood Risk Management Strategy identified that there is slightly better economic justification to Hold the Line in the short to medium term compared to Managed Realignment, taking into account all the costs of implementing realignment. Realignment is more likely to be viable in the long term. Implementation of Managed Realignment here requires more detailed study to understand its effects on the rest of the estuary and open coast, in terms of both individual and cumulative effects of realignment here and in other parts of the outer Parrett Estuary. A key factor in undertaking realignment here will be prior construction of a surge barrier to ensure changes in this part of the estuary do not significantly increase flood risk at Bridgwater. Implementation of a surge barrier requires more detailed study of the technical aspects and environmental implications.
		No Active Intervention would result in the uncontrolled natural realignment of the low-lying land as defences deteriorate and fail. This would also increase flood risk to people, property and infrastructure in the extensive flood plain.				
7d40 – Bridgwater (upper Parrett Estuary)	N/A	Maintain the existing embankment and flood wall defences, eventually replacing them with larger structures, to continue protection against flood risk, through **Hold the Line**.	Maintain the improved defences to continue protection against flood risk, through **Hold the Line**. Construct a surge barrier to support the defences at Bridgwater.	Maintain the defences to continue protection against flood risk, through **Hold the Line**.	Protection from flooding for substations and landfill sites in Bridgwater and Sedgemoor. Protection from risk of flooding for a significant number of homes, businesses, the A38 and M5, mainline railway and associated facilities and infrastructure.	The objective of the Plan for the upper Parrett Estuary is to continue to reduce flood risk for a significant number of people, property and infrastructure at Bridgwater. Construction of a surge barrier will be vital to providing adequate flood protection here. The need for a surge barrier to counter the effects of rising sea levels has already been identified in the Parrett Estuary Flood Risk Management Strategy. This is because of the potential for changes in the volume of water that flows in and out of the outer Parrett Estuary that could result of the medium to long term policies proposed.
		No Active Intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail.				
		Managed Realignment is not feasible as there is no room for it without causing loss of property and infrastructure.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
7d41 – Bridgwater to Dunball	N/A	Maintain the existing embankment and flood wall defences to continue protection against flood risk, through **Hold the Line**.	Maintain the existing defences, eventually replacing some or all of them with larger structures (depending on location of surge barrier), to continue protection against flood risk, through **Hold the Line**.	Undertake maintenance of the defences, improved in the medium term, to continue protection against flood risk, through **Hold the Line**.	Protection of substations in Bridgwater and Sedgemoor from flooding. Protection from flooding for homes and businesses, the A38 and M5, mainline railway and associated facilities and infrastructure. Potential for habitat loss due to coastal squeeze (narrowing of the shoreline) where defences are held, adversely affecting Bridgwater Bay SSSI and National Nature Reserve, Severn Estuary SAC, SPA and Ramsar site.	The objective of the Plan for the upper Parrett Estuary is to continue to reduce flood risk to people, property and infrastructure between Bridgwater and Dunball, which includes the mainline railway and the M5.
		No Active Intervention here would increase flood risk to property and infrastructure over an extensive area as defences deteriorate and fail.				
		Managed Realignment is not feasible as there is no room for it without causing loss of property and infrastructure.				
7d42 – Dunball to River Brue	Hold	Continue to maintain existing embankment defences under a **Hold the Line** policy. Investigate opportunities for Managed Realignment.	Implement **managed realignment** along this stretch.	**Hold the line** of the realigned defence.	Potential benefits to the Bridgwater SSSI and National Nature Reserve, Severn Estuary SAC, SPA and Ramsar site by creating intertidal habitat in areas of Managed Realignment in the medium term. A Hold the Line policy in the long term could eventually cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat. A significant area of agricultural land will be permanently lost through Managed Realignment, though the exact areas depend upon extent of realignment. Continued protection against flood risk for many properties, roads – including the A38 and M5 – and the mainline railway and associated facilities. The mouth of the Huntspill River Channel would need to be adapted as part of any realignment along the Pawlett and Huntspill Levels. This could alter the conservation value of the Huntspill River National Nature Reserve, although it would also create new intertidal habitat. Potential for changes in the morphology of the outer estuary – as a result of realignment/No Active Intervention. This could affect navigation and access for commercial shipping, to Dunball, but requires more detailed investigation. Power lines running from Hinkley Point are located in the Pawlett Hams area. Managed realignment would need to consider the implications for these assets; these could be defended locally or may need to be relocated. The Sewage Treatment Works that serves Burnham-on-Sea and Highbridge would be protected in the short to medium term, though consideration to its future position should be considered as and when it requires upgrading or replacement, in line with the long-term policy to realign in this area.	The objectives of the Plan for the Parrett Estuary are to return it to a more natural, less constrained state and to continue to defend against flood risk in a sustainable way, where it is environmentally acceptable and economically viable. There are opportunities for Managed Realignment to provide flood storage and create habitat along this stretch. In particular, Pawlett Hams has been identified in the recent Parrett Estuary Flood Risk Management Strategy. Implementation of this policy could involve constructing a set-back defence embankment and making a breach in the existing defence. Realignment along the Pawlett and Huntspill Levels frontage could also occur in the long term, as the Huntspill Sluice reaches the end of its effective life and needs replacing. Realignment at this time would provide a more sustainable defence position, particularly if the existing defence is significantly affected by changes to the Parrett low-water channel that may occur as a result of the proposed policies for the Steart Peninsula. Implementation of Managed Realignment here requires more detailed study to understand its implications for the rest of the estuary and open coast, in terms of individual and cumulative impacts here and in other parts of the outer Parrett Estuary. A key factor in undertaking realignment here will be prior construction of a surge barrier to ensure changes in this part of the estuary do not significantly increase flood risk at Bridgwater. Implementation of a surge barrier requires more detailed study of the technical aspects and environmental implications.
		No Active Intervention here would increase flood risk to property and infrastructure over an extensive area as defences deteriorate and fail.				

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
					Potential impacts on a number of non-designated archaeological features, depending upon extent of realignment, which would be determined through further detailed study.	
7d43 – Burnham-on-Sea, Highbridge and Berrow	Hold / Observe & Monitor	Maintain the existing seawall and embankment defences to continue protection for Burnham-on-Sea and Berrow, through **Hold the Line**. This will be supported by dune management at Berrow.	Maintain the existing seawall and embankment defences to continue protection for Burnham-on-Sea and Berrow, through **Hold the Line**. This will be supported by dune management at Berrow.	Maintain the defences, eventually replacing them with larger structures, to continue protection for Burnham-on-Sea and Berrow, through **Hold the Line** This will be supported by dune management at Berrow.	Berrow Dunes Local Nature Reserve and SSSI will continue to evolve largely naturally, with dune management seeking to reduce human impacts. Potential narrowing, steepening and even loss of beach, especially at Burnham-on-Sea, depends on the future course of the Parrett low water channel. Conservation Areas and Grade II Listed Buildings at Burnham-on-Sea continue to be protected against flood risk. Continued protection against flood risk for homes, businesses and key infrastructure including the A38 and M5, mainline railway and associated facilities.	The objective of the Plan here is to protect Burnham-on-Sea, Highbridge and Berrow against flood risk, working with natural processes as far as possible, particularly at Berrow. The future course of the Parrett Estuary low-water channel will significantly influence how this policy is achieved in the future, particularly at Burnham-on-Sea. The frontal dunes at Berrow are likely to experience overtopping and breaching as sea levels rise. Flood risk to the wider area will be controlled by the extensive back dunes. It is not predicted that these will be compromised over the next 100 years.
		No Active Intervention here would increase flood risk to property and infrastructure over an extensive area as defences deteriorate and fail.				
		Managed Realignment is not feasible as there is no room for it without causing loss of property and infrastructure that are economically viable for protection with a Hold the Line policy.				
7d44 – Berrow (north) to Brean (north)	Observe & Monitor (possible Hold)	Manage the dunes and beach, including beach recycling, to restore the dunes as much as possible to provide a more robust natural defence. This could be helped by removing some of the seaward properties built into the dunes at Brean, through a policy of **Managed Realignment**.	Manage the dunes and beach, including beach recycling, to restore the dunes as much as possible to provide a more robust natural defence. This could be helped by removing some of the seaward properties built into the dunes at Brean, through a policy of **Managed Realignment**. Construct a set-back defence along the north side of Brean in support	Manage the dunes and beach, including beach recycling, to restore the dunes as much as possible to provide a more robust natural defence. This could be helped by removing some of the seaward properties built into the dunes at Brean, through a policy of **Managed Realignment**. If erosion of the dunes is such that they could be breached, then construct a secondary defence inland.	In order to implement Managed Realignment, properties will probably need to be moved to allow for dune management. This will encourage the dunes to redevelop and provide a more robust natural defence. Potential benefits to the Severn Estuary SSSI, SAC, SPA and Ramsar site by creating habitat in areas of Managed Realignment in the medium term. Protection from flooding for homes, businesses and key infrastructure including the A38 and M5, the mainline railway and associated facilities.	The objectives of the Plan here are to provide sustainable protection against flood risk to Brean and the wider Somerset Levels and Moors, working with natural processes as far as possible and retaining the natural features and beaches to benefit of tourism. To Hold the Line along this stretch in the medium to long term would require the construction of very large hard defences. These would exacerbate beach narrowing and loss (the beach being covered at most states of the tide), making it technically more difficult to maintain defences in the long term. If there is little or no beach left, visitors would be less likely to be attracted to the area. Retaining the beach would need shoreline control structures (e.g. groynes or offshore reefs), which would be likely to adversely affect the management of down-drift sections of coast.

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
				back defence in support of long-term policy between Brean and Brean Down.		Introduction of large, hard defences would also not be economically viable. Brean sits largely on high dunes that provide a natural defence for the Somerset Levels and Moors; if this were eroded in the long term, then the more sustainable solution to protect the Somerset Levels would be to construct a set-back defence inland. This would probably need to be smaller and less costly to maintain. The location of a set back defence would be determined by more detailed studies. To try to retain more beach material here and reduce flood risk to the Somerset Levels and Moors, this policy would manage the realignment of the coast by encouraging the dunes in this area to recover. The aim would be to provide a more robust natural defence to hold the rear line of dunes, similar to that provided by the more extensive dunes at Berrow. However, the Brean dunes are unlikely to recover to that extent due to limited availability of suitable sediment in the system; although these measures may mitigate recreational erosion. This is in line with policy recommendations from a recent 2008 report that investigated the Burnham-on-Sea to Brean area in detail. The dunes at Brean are currently degraded and eroding because they have been developed in many areas. To achieve this policy, the dunes would need to be free from development so they can become re-established in the short term; this could mean property being lost and so adaptation measures will be required. To support the long-term policy between Brean and Brean Down and reduce flood risk to the Somerset Levels and Moors, a set-back defence would need to be constructed along the north end of Brean, between the coast and the Axe Estuary. This defence would then be maintained in the long term as part of this unit.
		No Active Intervention here would increase flood risk to property and infrastructure over an extensive area as dune erosion continues and the likelihood of a breach increases.				
		To hold the existing line of defence here would become economically and technically unsustainable in the medium to long term, compared to realignment. Holding the line here would require construction of hard defences in front of the dunes along parts of this frontage, which would accelerate beach narrowing and loss as sea levels rise and be detrimental to the area's value to tourism. Over time, the extent of these defences would also need to increase; requiring increasing cost and having increasing environmental impact. To retain beach here would require construction of groynes or offshore reefs. These would also be economically unsustainable compared to realignment options and also be likely to have an adverse impact on adjacent beaches by interrupting the transport of sediment along the shore.				
7d45 – Brean (north) to Brean Down	Hold	Continue to maintain existing rock revetment defences under a **Hold the Line** policy.	Continue to maintain existing rock revetment defences under a **Hold the Line** policy.	Allow natural coastal evolution to occur by moving towards a policy of **No Active Intervention**.	Potential narrowing, steepening and even loss of beach fronting the defences until they fail. Loss of homes and businesses in the long term as the policy moves to No Active Intervention and defences eventually fail. Once defences are no longer present, potential for habitat creation in the long term. A significant area of agricultural land will be permanently	The objectives of the Plan here are to provide sustainable protection against flood risk to the Somerset Levels and Moors, working with natural processes as far as possible and allowing this area to evolve naturally in the long term. To Hold the Line along this stretch in the long term would require the existing hard defences to be replaced with larger structures once they reach the end of their effective life, and it is unlikely that this would be economically viable. As sea levels rise, retaining the defences would exacerbate

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		There are very few assets at risk of flooding or erosion to justify replacing the existing revetment defence when it reaches the end of its effective life in the long-term, compared to more economically sustainable options of realignment in adjacent areas to manage flood risk to the wider Somerset Levels and Moors. Therefore a long term policy to Hold the Line in this area is inappropriate.			lost by moving to No Active Intervention. Transport infrastructure providing access to Brean could be maintained for as long as it is required; in the long term, access to Brean may need to be provided in a different way as a result of the withdrawal of defence; or it may not be required at all.	the narrowing and loss of the beach; the beach would become covered at most states of the tide. This would also make it technically more difficult to maintain defences in the long term. The long-term policy for No Active Intervention would occur once the existing defences reach the end of their effective life; they would then not be replaced and so would gradually deteriorate and fail. Construction of a set-back defence during the medium term, possibly along the north of Brean (see adjacent section), would therefore be required to minimise flood risk to the wider Somerset Levels and Moors. The policy on the west bank of the Axe Estuary in the long-term supports the policy on this stretch. These policies mean that the future course of the Axe Estuary could alter in the very long term so that it discharges to the south of Brean Down. This could affect how sediment circulates in Bridgwater Bay and further study is required to understand this.
		Flood risk to the wider Somerset Levels and Moors can be managed more sustainably by managing adjacent units, including constructing set-back-defences. Therefore a Managed Realignment policy here is inappropriate when considering management of the wider area.				
7d46 – Brean Down (south side)	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development, historic features, conservation or land areas.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are currently no defences here and no assets at risk of erosion or tidal flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the area's environmental interests Therefore policies of Hold the Line and Managed Realignment are inappropriate.				
POLICY SCENARIO AREA: BREAN DOWN TO ANCHOR HEAD (WESTON BAY)						
7e01 – Brean Down (north side) to Axe Estuary (west)	Do Nothing	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	Allow natural coastal evolution to continue through **No Active Intervention**.	No implications for development, historic features, conservation or land areas.	The objective of the Plan here is to continue to allow this undefended section of coast to evolve naturally.
		There are no currently defences here and no assets at risk of erosion or tidal flooding to justify, on economic grounds, any future investment in defences. Such intervention would also affect the area's environmental interests. Therefore policies of Hold the Line and Managed Realignment are inappropriate.				
7e02 – Axe Estuary west bank (mouth to near Diamond Farm)	Hold (locally Retreat)	Continue to maintain existing embankment defences under a **Hold the Line** policy.	Continue to maintain existing embankment defences under a **Hold the Line** policy.	Allow natural coastal evolution to occur by moving towards a policy of **No Active Intervention**.	Loss of homes and businesses in the long term as the policy moves to No Active Intervention and defences eventually fail. Potential benefits to the Severn Estuary SSSI SAC, SPA and Ramsar site in the long term by creating habitat.	The objective of the Plan here is to allow this section of coast to evolve naturally in the long term. Continued maintenance of defences along this west bank of the Axe Estuary in the short to medium term would support the policies along the open coast between Brean

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
		To Hold the Line in the long term would not be sustainable or economically justified, given proposed policy to move to No Active Intervention on the adjacent open coast (unit 7d45). Flood risk to the wider Somerset Levels and Moors can be managed more sustainably by managing adjacent units, including constructing set-back defences. Therefore a Managed Realignment policy here is inappropriate.			A Hold the Line policy may cause coastal squeeze (narrowing of the shoreline) and the potential loss of intertidal habitat until defences fail through the move to No Active Intervention in the long term. A significant area of agricultural land will be permanently lost as a result of the move to No Active Intervention.	and Brean Down. These banks would not be maintained in the long term once the open coast moves to a policy of No Active Intervention. Construction of a set-back defence in the medium term along the north of Brean (refer to units 7d44 and 7d45) would therefore be required in order to minimise flood risk to the wider Somerset Levels and Moors from this area, which would increase once the defences fail. These policies mean that the future course of the Axe Estuary could alter in the very long term so that it discharges to the south of Brean Down. This could have implications for sediment circulation in Bridgwater Bay, and further study is required to understand the effects of this.
7e03 – Axe Estuary east bank (near Diamond Farm to mouth)	Hold (locally Retreat)	Continue to maintain existing embankment defences under a **Hold the Line** policy. Investigate opportunities for Managed Realignment.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	Continue to protect homes and businesses against flood risk, as well as key infrastructure including the A38 and M5, the mainline railway and associated facilities. Potential benefits to the Severn Estuary SSSI, SAC, SPA and Ramsar site by creating intertidal habitat in areas of Managed Realignment in the medium term. A Hold the Line policy in the long term will cause coastal squeeze (narrowing of the shoreline) and loss of intertidal habitat. Potential impacts on a number of non-designated archaeological features, depending upon extent of realignment, which would be determined through further detailed study.	The objectives of the Plan here are to provide sustainable protection against flood risk to the wider Somerset Levels and Moors, working with natural processes as far as possible. There are opportunities here for Managed Realignment to provide flood storage and create habitat. Implementing this policy could involve constructing a set-back defence embankment and making a breach in the existing defence, which would require more detailed investigation. On parts of this section not subject to realignment, defences would be maintained and improved along existing alignments.
		No Active Intervention here would see deterioration and eventual failure of the extensive embankment defences, resulting in uncontrolled natural realignment of the estuary here. This would cause an increased flood risk to a wide area of the Somerset Levels and Moors without measures to manage and control it.				
7e04 – Axe Estuary mouth to Uphill	Hold (possibly Retreat long term)	Continue to maintain existing seawall defences under a **Hold the Line** policy. Investigate opportunities for Managed Realignment.	Implement **Managed Realignment** along this stretch.	**Hold the Line** of the realigned defence.	Continued protection against flood risk for homes and businesses in Uphill and for key infrastructure including the A38 and M5, the mainline railway and associated facilities. Potential to retain beach along this frontage by allowing it to adapt to realigned position as sea levels rise. Habitat creation could benefit the Severn Estuary SSSI SAC, SPA, Ramsar site, Uphill SSSI and the CWS in the long term. A Hold the Line policy may cause coastal squeeze (narrowing of the shoreline) and the loss of intertidal habitat.	The objectives of the Plan here are to provide sustainable flood protection for the wider Somerset Levels and Moors, working with natural processes as far as possible. Continued maintenance of the seawall here will become increasingly technically difficult to sustain as sea level rise makes the beaches narrower. Once defences reach the end of their effective life, the defence line could be realigned landwards to a more sustainable position. This will not only continue to reduce flood risk to Uphill from this area, but could also provide an opportunity for retaining more beach material to benefit Uphill.
		No active intervention here would increase flood risk to property and infrastructure as defences deteriorate and fail.				
7e05 – Uphill to Weston-super-Mare (south)	Hold (possibly Retreat long term)	Allow natural coastal evolution to continue through **No Active Intervention**, although ongoing monitoring of the dunes would occur.	Allow natural coastal evolution to continue through **No Active Intervention**, although ongoing monitoring of the dunes would occur.	Allow natural coastal evolution to continue through **No Active Intervention**, although ongoing monitoring of the dunes would occur. If	In the long term there will be continued protection against flood risk for homes and businesses in Uphill, as well as for key infrastructure including the A38 and M5, the mainline railway and associated facilities. Habitat creation could benefit the Severn Estuary SSSI	The objectives of the Plan here are to provide sustainable protection against flood risk for people, property and infrastructure at Uphill and Weston-super-Mare, working with natural processes as far as possible. Between Uphill and Weston-super-Mare, a short section of

Proposed Policy Unit (Number & Description)	SMP1 Policy	Proposed Preferred Policy			Specific Policy Implications	Supporting Information
		Short Term (to 2025)	Medium Term (to 2055)	Long Term (to 2105)		
				monitoring identifies that the dunes are at risk of breaching, then construct a secondary defence embankment under a move towards **Managed Realignment**.	SAC, SPA and Ramsar site in the long term. The dunes here will be allowed to evolve naturally as much as possible to provide a robust natural defence. Potential impacts on a number of non-designated archaeological features and the Weston-super-Mare Conservation area, depending upon extent of future erosion of the dunes.	undefended dunes provides a natural defence. As sea levels rise, the effectiveness of these dunes as a defence could be compromised. A secondary defence embankment could be constructed landwards of the dunes to minimise flood risk to people, property and infrastructure in Uphill and Weston-super-Mare.
		The undefended dunes here provide a naturally robust defence. To intervene would probably involve extending the seawall defences from Weston-super-Mare to Uphill. Rising sea levels could cause the beach to narrow and steepen, reducing its amenity value and making it more technically and economically difficult to sustain defences in this area. Therefore a Hold the Line policy is inappropriate at the present time.				
7e06 – Weston-super-Mare	Hold	Maintain the existing seawall defences to continue protection against flood and erosion risk, through **Hold the Line**.	Maintain the existing seawall defences to continue protection against flood and erosion risk, through **Hold the Line**.	Maintain the existing seawall defences and raise their height, to continue protection against flood and erosion risk, through **Hold the Line**.	Continued protection against flood risk for a significant number of homes and businesses in Weston-super-Mare, as well as for key infrastructure including the A370 and M5, the mainline railway and associated facilities. Potential for beach to reduce over time. Potential for habitat loss due to coastal squeeze (narrowing of the shoreline) where defences are held, adversely affecting Severn Estuary SAC, SPA and Ramsar site.	The objective of the Plan here is to continue protecting people, property and infrastructure at Weston-super-Mare against flood and erosion risk.
		No Active Intervention here would increase flood and erosion risk to property and infrastructure as defences deteriorate and fail.				
		Managed Realignment is not feasible as there is no room for it without causing loss of infrastructure and amenities.				