

Appendix G: Scenario Testing

G1	Introduction	1
G2	Policy Scenario Shoreline Response Assessment.....	3
G2.1	Introduction.....	3
G2.2	Preferred Scenarios	5
G2.3	Alternatives to the Preferred Scenario:	39
G3	Objective Appraisal.....	61

Contents by Policy Unit

Note the geographic breakdown of the appraisals presented in this Appendix is not necessarily the same as the final Policy Units (PU). Here the breakdown has been based upon coastal process and morphological changes along the shoreline. For ease of reference, the following table identifies the page number on which appraisals relevant to each PU start.

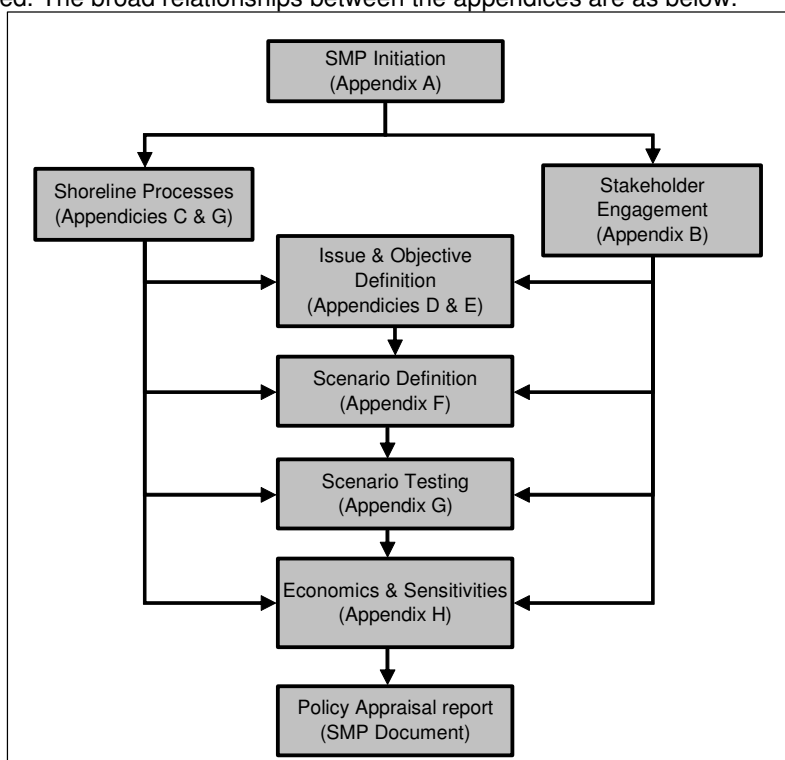
	Policy Unit	Theme & Page Number		Objective Appraisal
		Shoreline Response		
		Preferred Scenario	Alternative Scenarios	
4c01	South Foreland to Dover	5		63
4c02	Dover	6		64
4c03	Shakespeare Cliff	7	39	66
4c04	Samphire Hoe	8		67
4c05	Abbots Cliff	9	41	68
4c06	Folkestone Warren	10/11	42	69
4c07	Copt Point	12	43	70
4c08	Folkestone and Sandgate	13		71
4c09	Sandgate to Hythe	14		73
4c10	Hythe Ranges	15	44	75
4c11	Dymchurch to Romney Sands	16	45	76
4c12	Romney Sands to Dungeness	17		78
4c13	Dungeness Power Station	18		80
4c14	Lydd Ranges	19	46	81
4c15	Jury's Gap to The Suttons	20	47	83
4c16	Camber Sands	21		85
4c17	River Rother	22	50	87
4c18	River Rother to Cliff End	23/24	51	91
4c19	Cliff End to Fairlight Cove	25		93
4c20	Fairlight Cove East	26	54	94
4c21	Fairlight Cove Central	27	55	95
4c22	Fairlight Cove West	29	56	96
4c23	Fairlight Cove to Hastings	30		97
4c24	Hastings	31/32	57	98
4c25	Bulverhythe and Glyne Gap	33		101
4c26	Bexhill and Cooden	34		103
4c27	Pevensey and Hooe	35	58	105
4c28	Sovereign Harbour	36		108
4c29	Eastbourne	37		109
4c30	Beachy Head	38		113

The Supporting Appendices

This appendix 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: Thematic Review	This report identifies and evaluates the environmental features (human, natural, historical and landscape).
E: Issues & Objective 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.
G: 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: Metadatabase and Bibliographic database	All supporting information used to develop the SMP is referenced for future examination and retrieval.

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



G1 Introduction

This Appendix presents the assessment and appraisal of policies.

There have been two main stages:

- assessment of shoreline interactions and response,
- assessment of achievement of objectives.

The process analysis has been developed using the understanding of coastal behaviour from the baseline process report and the two baseline scenarios (no active intervention and with present management)¹.

From this analysis, maps of predicted erosion zones have been produced to identify those features affected². The next stage was appraising achievement of objectives using this information and this has been recorded in the Issues and Objectives Table.³

¹ Refer to Appendix C

² Refer to Annex G1

³ Refer to Appendices E and F

G2 Policy Scenario Shoreline Response Assessment

G2.1 INTRODUCTION

Following on from the broad-level assessment of the Defra generic policies, which combined policy options along the various sections of the shoreline and policy appraisal, which included feedback from the stakeholders, the preferred policy scenarios were assessed⁴: For each scenario, broad assumptions were made regarding implementation for each location.⁵ At this stage the Policy Units were more or less defined and therefore the locations are more or less applicable to the final Policy Units presented in the plan.

Note: For clarity of the final SMP recommendations, the shoreline response assessment statements for the Preferred Scenario are reported first (G.2.2) and the alternatives thereafter (G.2.3).

⁴ Refer to Appendix F

⁵ Refer to Appendix F5

G2.2 PREFERRED SCENARIOS

Proposed Policy Scenario: No Active Intervention (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
South Foreland (4c01)	No Defences or Management		
	<p>The chalk cliffs will continue to erode at a rate similar to what has occurred historically, c.10m by 2025.</p> <p>Susceptible to sub-aerial weathering, periodic slumps and block failures, large falls from the cliff face are likely. This will induce the formation of debris boulder and chalk rubble ‘aprons’, on the chalk shore platform, providing temporary protection to the cliff toe.</p> <p>Potential exists for the eastwards movement of foreshore sediment across, and beyond, the frontage.</p>	<p>The backshore cliffs will continue to erode slowly, at a rate similar to that at present, resulting in retreat of 30m by 2055.</p> <p>Recession of the chalk cliffs yields minimal flinty shingle to the foreshore, which is transported alongshore (in an eastwards direction).</p> <p>There is a general lack of contemporary shingle and sand supply to the frontage</p>	<p>Cliff recession and platform lowering is likely to increase throughout this epoch due to sea level rise. Cliff retreat could be in the region of 60m by 2105.</p> <p>Recession of the chalk cliffs will continue to yield flinty shingle and fines to the foreshore, which is then transported eastwards by longshore processes.</p>
<i>Feed</i>	<i>Minimal Fines</i>	<i>Minimal Fines</i>	<i>Minimal Fines</i>
<i>Rates</i>	<i>0.5m/per annum 10m erosion by 2025</i>	<i>0.5+m/per annum 20 to 30m erosion by 2055</i>	<i>0.5+m/per annum 50 to 60m erosion by 2105</i>

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Dover (4c02)	Concrete seawall, breakwater, harbour arms and groyne		Substantial works may be required to the seawall to maintain its integrity as a defence.
	<p>The seawall will prevent any erosion of the shoreline.</p> <p>The harbour arms will continue to trap material, resulting in a continuation of accretion on the western beach.</p>	<p>The seawall will prevent any erosion or inundation of the hinterland.</p> <p>For the beaches within the harbour, there will be some foreshore narrowing as sea levels rise. There will be limited feed of material from the west, transported by alongshore processes, Consequently the groyne will be unlikely to retain a beach.</p>	<p>The seawall will need substantial work to maintain integrity, preventing erosion of the shoreline and inundation of the hinterland.</p> <p>As a result of further foreshore narrowing as sea levels rise and a reduced sediment supply from the west, the beach is expected to disappear within the confines of the harbour.</p> <p>Rates of transport are likely to remain low, although these might have increased over time with increased sea levels and wave exposure.</p>
<i>Feed</i>	<i>Shingle</i>	<i>Sand and shingle</i>	<i>Sand and shingle</i>
<i>Position</i>	<i>No change to the back of beach position</i>	<i>No change to the back of beach position</i>	<i>No change to the back of beach position</i>

Proposed Policy Scenario: No Active Intervention (0 – 100 years)			
	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Shakespeare Cliff (4c03)	No Defences and no beach management		
	<p>The backshore cliffs and fronting shore platform will continue to erode at a rate similar to that at present, c.10m by 2025.</p> <p>The shingle / debris beach will continue to be retained in front of the cliffs, although this is directly related to the extent of cliff erosion.</p>	<p>The backshore cliffs will continue to erode at a rate similar to that at present, resulting in retreat of 25m by 2055.</p> <p>The shingle / debris beach will continue to be retained in front of the cliffs, due to erosion although the beach might narrow as a result of a lack of sediment entering the system and cliff recession not keeping pace with sea level rise.</p>	<p>The backshore cliffs will erode at a rate slightly greater than they currently do, which will result in 50m of retreat by 2105.</p> <p>Very little, if any, beach will be present at the base of the cliff toe due to cliff erosion failing to keep pace with sea level rise.</p> <p>Any cliff debris will be transported alongshore and offshore</p>
<i>Feed</i>	<i>Shingle and some fines</i>	<i>Shingle and fines</i>	<i>Shingle and fines</i>
<i>Rates</i>	<i>0.25 to 0.5m/per annum Erosion c.5-10m</i>	<i>0.25 to 0.5m/per annum c.25m erosion</i>	<i>0.4 to 0.5m/per annum c.50m erosion</i>

Proposed Policy Scenario1: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Samphire Hoe (4C04)	Concrete apron seawall fronted with a block and rock revetment and rock armour		Increase the maintenance / strength of the sea defences.
	There will be no change in the position of the backshore due to the coastline being heavily defended.	The backshore will continue to remain in its present position due to the coastline being heavily defended.	The backshore will be held in the same position as at present, forming a more defined promontory.
	Samphire Hoe is an artificial promontory; therefore there is no beach.	Sea level rise and increased storminess will result in increased wave attack on the sea wall.	Pressure of rising sea levels, the promontory will come under increased wave attack and therefore will need substantially increased maintenance to sustain integrity.
	Samphire Hoe restricts alongshore sediment movement due to it being held seaward of its natural alignment.	Sediment transport along the frontage will be restricted, as Samphire Hoe becomes more defined. Shingle will build up on the updrift side of the promontory.	Sediment movement will continue to be restricted along this frontage; a shingle beach will continue to develop on the updrift side whereas downdrift of the promontory the foreshore will be vulnerable to wave attack.
<i>Feed</i>	<i>Fines will bypass the promontory</i>	<i>Fines will bypass the promontory</i>	<i>Fines and shingle will bypass the promontory</i>
<i>Position</i>	<i>No change</i>	<i>No change</i>	<i>No change</i>

Proposed Policy Scenario: No Active Intervention (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Abbots Cliff (4c05)	No Defences or Management		
	<p>The chalk cliffs will continue to erode at a similar rate to that experienced historically c.5m to 10m by 2025.</p> <p>Slow rates of platform lowering are anticipated during this epoch and therefore toe protection and stability will continue.</p> <p>Material released will be predominantly fines and therefore not provide localised and downdrift beach building material.</p>	<p>The chalk cliffs will continue to erode, at a potentially higher rate than they have done historically, due to sea level rise. Retreat could be in the region of 10 to 25m by 2055.</p> <p>Rates of platform lowering are also likely to be slightly higher due to increased wave attack.</p> <p>Any chalk rubble released, from rock falls, will initially accumulate at the toe of the cliffs until it breaks down and is transported alongshore</p>	<p>Chalk cliff recession will continue to increase throughout this epoch due to sea level rise, increased sub-aerial weathering and adjacent cliff instability. Retreat could therefore be in the region of 20 to 60m by 2105.</p> <p>Any chalk rubble released will initially accumulate at the toe until it is broken down and transported alongshore to Samphire Hoe.</p>
	<i>Feed</i>	<i>Mainly fines and some flints</i>	<i>Mainly fines and some flints</i>
<i>Rates</i>	<i>0.25 to 0.5m/per annum</i>	<i>0.25 to 0.5m/per annum</i>	<i>0.25 to 0.5m/per annum</i>

Proposed Policy Scenario 1: Hold the Line (0 – 50 years)		No Active Intervention (50 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	
Folkestone Warren⁶ (4c06)	Concrete sea wall and timber groynes along the warren frontage		Defences allowed to fail
	The seawall will continue to prevent cliff retreat throughout this epoch Limited cliff erosion will yield minimal and localised material to the foreshore, the majority of which will however be fines. The volume of material exiting the system (in a eastwards direction) will be low.	The seawall will continue to prevent retreat of the backshore beach but the frontage will continue to move seawards at a similar rate to what has occurred historically. Because the frontage is defended, the eroded material will continue to not reach the foreshore and therefore the sand beach will continue to deplete.	Upon failure of the seawall, erosion of the cliff toe will be re-activated. This will result in the sudden influx of predominantly fine material to the foreshore, which will be transported alongshore and offshore fairly rapidly. No beach building material will remain on the foreshore.
	<i>No material</i>	<i>No material</i>	<i>Fines</i>
<i>Feed</i>	<i>No material</i>	<i>No material</i>	<i>Fines</i>
<i>Rates</i>	<i>No change at the cliff toe 1.4m by 2025 at the cliff top (0.07m/per annum)</i>	<i>No change at the cliff toe 2.8 to 3m at the cliff top by 2055</i>	<i>Up to 10m retreat at the cliff toe c.7-10m at the cliff top by 2105</i>

⁶ Refer to 4c06 Policy Unit Statement for further information

Proposed Policy Scenario 2: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Folkestone Warren⁷ (4c06)	Concrete sea wall and timber groynes along the warren frontage and shingle recharge at the eastern extremity of Abbots Cliff.		Substantial maintenance of the sea defences. Shingle recharge will become ineffectual
	The seawall will prevent retreat of the backshore beach position but the Warren frontage will continue to move seawards at a rate of 1.4m by 2025. Because the frontage is defended the eroded material will yield minimal / no material to the foreshore. Sediment moving alongshore will be interrupted by the presence of groynes; little material is anticipated to leave the frontage and that which does will be fines and part of the material already present. The sand beach will therefore deplete.	The seawall will continue to prevent the retreat of the backshore beach but the frontage will continue to move seawards at a similar rate to what has occurred historically. Because the frontage is defended, the eroded material will continue to not reach the foreshore and therefore the sand beach will continue to deplete.	The seawall will continue to prevent retreat at the toe of the cliffs although cliff top recession will occur at a potentially greater rate than it has done historically. The seawall will continue to restrict material being deposited on the foreshore and therefore at this point no beach is expected to remain.
	<i>Feed</i>	<i>Sand (minimal)</i>	<i>Sand (minimal)</i>
<i>Rates</i>	<i>No change at the cliff toe 1.4m at the cliff top by 2025 (0.07m/per annum)</i>	<i>No change at the cliff toe 2.8 to 3m at the cliff top by 2055</i>	<i>No change at the cliff toe 7m at the cliff top by 2105</i>

⁷ Refer to 4c06 Policy Unit Statement for further information

Proposed Policy Scenario 2: No Active Intervention (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Copt Point (4c07)	No Defences or Management		
	<p>Rates of erosion will continue to be similar to that experienced historically i.e. quite low. Occasionally localised large-scale rotational landsliding, which may cause up to 10m of retreat in a single event, may occur.</p> <p>Sediment feed into the system is limited due to the harbour arms at Folkestone. Therefore little material will exit the system with the small amount that does being predominantly fines.</p>	<p>Erosion rates along this section will continue but at a slightly higher rate than that experienced historically due to sea level rise, which will exacerbate localised large-scale rotational landsliding events.</p> <p>Sediment feed into the system will continue to be limited due to the harbour arms at Folkestone. Therefore little material will leave the system.</p>	<p>With the cliffs remaining unprotected and continued sea level rise, cliff erosion will increase.</p> <p>The shore platform, at the toe of the cliffs, will continue to reduce wave impact but its efficiency will reduce with time due to sea level rise, which could be in the region of up to 4mm to 6mm /annum.</p> <p>Sediment feed into the system will continue to be limited due to the harbour arms at Folkestone. Therefore little material will exit the system.</p>
	<i>Feed</i>	<i>Fines and flint</i>	<i>Fines and flint</i>
<i>Rate:</i>	<i>Erosion: 0.25 to 0.5m/per annum</i>	<i>Erosion: 0.25 to 0.5m/per annum</i>	<i>Erosion: 0.5m per annum</i>

Proposed Policy Scenario: Hold the Line			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Folkestone (includes Coronation Parade) (4c08)	Seawall fronted by a recharged shingle beach and held in place by two rock groynes. At Folkestone Harbour there are breakwaters and quays.		Increase the height / strength of the seawall, the recharge volume / frequency and the height and number of rock groynes. Maintain harbour arms and maintain the integrity of defences at Coronation Parade.
	To the east of the harbour there is a series of concrete arches and a wide sandy beach (Coronation Parade).		
	There would be no change in the backshore beach position due to the seawall. Sediment transported along the frontage will not differ too greatly from the present regime. The harbour arms, located at the extreme eastern end of this frontage, will continue to act as terminal groynes, trapping material moving alongshore, to 'build up' Rotunda Beach. Downdrift sections, such as Coronation Parade, will remain stable, as it has a wide sandy beach and is therefore not affected by the interrupted supply of shingle.	The seawall will continue to hold the back of the beach in its current position. Limited natural sediment feed to the Folkestone frontage will not be sufficient to maintain adequate beach volumes. To prevent beaches from narrowing and lowering recharge will need to increase. The rock groynes will continue to interrupt sediment movement. The impact of rising sea levels will start to become prevalent during this epoch and the sandy beach, at Coronation Parade, is likely to narrow.	The entire length of shoreline at Folkestone will continue to be held seaward of its natural alignment. To maintain a shingle beach along this frontage, recharge will need to be increased, as will the height of the seawall and the rock groynes. Natural sediment supply to this frontage will continue to be restricted and inadequate for maintaining a defensive beach, The harbour arms will continue to interrupt sediment movement out of the system. During this epoch the sand beach at Coronation Parade is likely to be very narrow.
	<i>Feed</i>	<i>No sediment</i>	<i>No sediment</i>
<i>Position</i>	<i>No change to the back of beach position</i>	<i>No change to the back of beach position</i>	<i>No change to the back of beach position</i>

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Sandgate to Hythe (4c09)	Rock groynes, rock revetment, concrete seawall and beach management		Seawall will need to be strengthened Rock revetment will need maintenance Rock groynes will need maintenance combined with the implementation of a capital beach recharge scheme and the continuation of beach management
	The seawall will hold the shoreline in its present position. The shingle beach will begin to reduce in volume, although this will be lessened through beach management and periodic top-up recharge. Sediment (shingle) will continue to be restricted in its movement alongshore (due to the arresting effect of the groynes).	The seawall will continue to hold the shoreline in its present position. The shingle beach will continue to reduce in volume; this however will be lessened through beach management and periodic recharge. The groynes will continue to arrest beach material.	To hold the shoreline in its current position, engineering structures will need significant maintenance. To maintain a suitable volume of beach in front of the seawall, in order to provide the standard of protection required, the renourishment and recycling activities will need to be significantly intensified.
	<i>Feed</i>	<i>Predominantly shingle</i>	<i>Sand and shingle</i>
<i>Position</i>	<i>No change to the back of beach position</i>	<i>No change to the back of beach position</i>	<i>No change to the back of beach position</i>

Proposed Policy Scenario: Hold the Line (0 – 50 years)		Managed Realignment (50-100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	
Hythe Ranges (4c10)	A rock revetment and earth embankment with timber groyned shingle beach	The rock revetment will need to be upgraded to maintain the present standard of protection.	A new defence will be constructed at a ‘set back’ position, prior to the retirement of the present defence. The position of this defence has yet to be determined (it is currently being reviewed by the Cliff End to Folkestone Strategy Study.
	The timber groynes and rock revetment will continue to hold the back of the shingle beach in its present position, although the foreshore may narrow and lower slightly as material continues to be moved alongshore.	There will be a landwards transgression of the shoreline, as the rock revetment loses its effectiveness due to sea level rise and a lack of maintenance. The shingle barrier beach will breach periodically and roll back, migrating landwards over relict ridges. Prior to the failure of the revetment a new defence will be constructed, albeit at a ‘set back’ position (that has yet to be defined). The construction of this defence is paramount as it will prevent flooding of the backing hinterland (Dungeness Flood Cell, which is a major flood risk area).	The shingle barrier beach will continue to roll back over the hinterland, in response to sea level rise and this will result in potential barrier segmentation. The set back defence will become increasingly imperative in preventing flooding of the Dungeness flood cell.
<i>Feed</i>	<i>Shingle</i>	<i>Sand and shingle</i>	<i>Sand and shingle</i>
<i>Position</i>	<i>No change to the back of beach position</i>	<i>The degree of roll back will be dependent on the position of the new defence.</i>	<i>The degree of roll back and subsequent inundation will be dependent on the position of the new defence.</i>

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Hythe Ranges to Romney Sands (4c11)	A groyned beach and concrete seawall extends from Littlestone-on-Sea to St. Mary’s Bay, periodic shingle re-nourishment.		
	<p>The mixed sand and shingle beach will continue to be held, seaward of its natural alignment, by the seawall and groynes.</p> <p>Alongshore sediment transport will continue to distribute shingle in a predominantly northwards direction. The shingle beach will taper towards Romney Sands, where a null point and a fairly stable sand dune system will continue to exist. Little change in the dunes is anticipated during this epoch.</p>	<p>The need for some engineering works along this section of the frontage and/or potentially dune management.</p> <p>Specific areas will to be susceptible to flooding, nominally Dymchurch, although it is recognised that the backing hinterland is one of the same flood cell.</p>	<p>At Romney Sands the effects of sea level rise and increased wave attack will threaten dune integrity. These effects will need to be managed. Little or no shingle beach will remain but a thin, sandy beach is likely to be retained.</p>
<i>Feed</i>	<i>Shingle</i>	<i>Sand and shingle</i>	<i>Small amounts sand</i>
<i>Position</i>	<i>No change</i>	<i>No change</i>	<i>No change</i>

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Romney Sands to Dungeness Power Station (4c12)	No Defences / Management		
	<p>The shingle beach will continue to accrete at a rate similar to the current one i.e. c.50 to 60m by 2025.</p> <p>Sediment will be redistributed in a predominantly northwards direction, decreasing in volume towards Romney Sands, where a null point and a fairly stable sand dune system will continue to exist.</p> <p>Little change in the position of the backshore dunes is anticipated.</p>	<p>The beaches at the southern end of the frontage i.e. from The Pilot to Lade will not be unduly affected by sea level rise and will continue to accrete, albeit at a lower rate than the current one, which could be in the region of 100 to 125m by 2055.</p> <p>The sand beach, from Romney Sands to Greatstone-on-Sea will start to lower and narrow in response to sea level rise, despite an increase in sediment supply. This may prompt the need for some engineering works along this section of the frontage and/or potential dune management.</p>	<p>The shingle beach between the Pilot and Lade will continue to accrete despite sea level rise. However the sand beach at Greatstone-on-Sea could be at threat from erosion, which may affect the backing sand dunes. This therefore, will need to be monitored and managed respectively. At Romney Sands it is likely that the effects of sea level rise and increased wave attack will also threaten dune integrity and again a sustainable management solution may need to be implemented.</p>
	<i>Feed</i>	<i>Shingle</i>	<i>Sand and shingle</i>
<i>Rates</i>	<i>Accretion (50m by 2025)</i>	<i>Accretion (125m by 2055)</i>	<i>Accretion (200 to 250m by 2105)</i>

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Dungeness Power Station (4c13)	Shingle Bund	Increase maintenance and recycling along the front.	Hard defence
	<p>The shoreline will continue to be held in its current position due to the presence of the shingle bund and beach management (recycling) activities.</p> <p>Shingle will continue to enter the system from updrift frontages as well as being moved alongshore, around the ‘Ness’, to frontages updrift. Some material will be transported offshore but it has been assumed that some of this material will be brought back onshore during storm conditions.</p>	<p>The shingle beach / bund will become increasingly difficult to maintain due to the effects of sea level rise and the migratory tendency of the Ness. To compensate, recycling and mechanical profiling, (volume and frequency) will need to increase.</p> <p>The bund will start to form a slight promontory, which may result in the development of vulnerable areas i.e. at the western extremity</p> <p>There will be continued transport of shingle and sand anti-clockwise around the ness.</p>	<p>Erosion is likely to increase on the southern shore and therefore the bund will need substantial maintenance.</p> <p>Alternative engineering options and management practices may have to be sought to prevent overtopping, erosion and outflanking.</p> <p>There will be continued transport of shingle and sand anti-clockwise around the ness and some material will be transported offshore before being brought back onshore, at Dungeness East, under storm conditions.</p>
<i>Feed</i>	<i>Shingle</i>	<i>Shingle</i>	<i>Shingle</i>
<i>Rates</i>	<i>0.5m erosion</i>	<i>1.5m erosion</i>	<i>3m erosion</i>

Proposed Policy Scenario: Managed Realignment (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Lydd Ranges (4c14)	Construction of a new secondary defence (several options regarding position have been considered) along with the maintenance/ strengthening of the ‘Green Wall’ (a clay embankment that runs parallel to the shore), at the extreme western section of this frontage / structure. Continuation of periodic recycling and beach profiling	Maintenance of the secondary defence and / or the Green Wall (which should still be intact long the eastern end of the frontage) Recycling and beach profiling ceases	
	<p>The immediate cessation of shingle recycling / re-profiling would initiate a re-alignment of the shingle barrier beach, on the southern facing foreshore.</p> <p>The areas of low-lying alluvium would become increasingly susceptible to localised inundation. The plan form would begin to move towards a swash-aligned coast.</p> <p>Transportation rates will increase along this frontage resulting in more material leaving the system.</p>	<p>The plan form of the beach would become progressively swash-aligned, which will instigate the re-activation and re-working of shingle stored within relict ridges.</p> <p>The low-lying areas of alluvium that intercept the ridges will become more frequently inundated.</p> <p>Erosion will be most significant at the western end and the Green Wall will be lost.</p>	<p>Erosion of the southern facing shingle beach will continue, at a greater rate due to sea level rise.</p> <p>The eroded material will be transported alongshore to a location that is more commensurate with shoreline energy i.e. swash alignment.</p> <p>Depending on the preferred updrift policy some shingle and sand will enter the frontage but similarly shingle and alluvium will also leave the frontage.</p>
	<i>Feed</i>	<i>Shingle</i>	<i>Shingle and alluvium</i>
<i>Rates</i>	<i>Erosion (20 to 35m by 2025)</i>	<i>Erosion (55 to 85m by 2055)</i>	<i>Erosion (115 to 180m by 2105)</i>

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Jury's Gap to The Suttons (4c15)	<p>Rock Revetment Groynes along the western section</p>		
	<p>The rock revetment will continue to hold the back of the shingle and sand beach in its current position.</p> <p>The gradual failure of groynes along the central and eastern section of the frontage will release material that will be transported alongshore.</p> <p>The groynes to the west will continue to trap a limited amount of beach building material, although this may need to be recharged initially to maintain the current amenity value.</p> <p>At the boundary between Jury's Gap and Lydd Ranges outflanking will continue but at a higher rate than that experienced historically due to Lydd Ranges being realigned. At this location there is also a high risk of flood propagation.</p> <p>Transportation rates along the frontage are naturally low (in comparison to that further east) but will increase initially with the removal of the groynes, improving alongshore coastal processes.</p>	<p>The revetment will continue holding the shoreline in its current position and limit the number of breach and overtopping events.</p> <p>A limited amount of material (mainly fines) will continue to be supplied from the west. Sediment entering the system from offshore will not be impeded by the defence structure and thus move alongshore.</p> <p>The mixed beach along this entire frontage will narrow and steepen in form due to sea level rise, insufficient feed and alongshore coastal processes.</p>	<p>With the shoreline position being held seawards of its natural alignment, a rise in sea level will culminate in an increased exposure to wave attack. It will therefore be extremely difficult to retain any beach along this frontage.</p> <p>If however, a proportion of the terminal groyne at Rye were to be removed, the beach along the western section of the frontage is unlikely to need recharging to maintain amenity value. If material was allowed through, a narrow shingle beach along the central and eastern section would be maintained, otherwise the beach would disappear (due to sea level rise, insufficient feed and alongshore coastal processes).</p>
<i>Feed</i>	<i>Alongshore transportation increases</i>	<i>Alongshore coastal processes</i>	<i>Alongshore coastal processes</i>
<i>Rates</i>	<i>Erosion (1.5m by 2025)</i>	<i>Erosion (3.5m by 2055)</i>	<i>No change</i>

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Camber (4c16)	<i>Dune management: expected to increase management practise / frequency with time</i>		
	The sand dunes will continue to be relatively stable throughout this epoch, which is believed to be a consequence of the sheltering effect of the Rye Harbour terminal groyne. Along with the river training wall, the terminal groyne blocks shingle entering the frontage at Camber.	The sand dunes will continue to be relatively stable throughout the entirety of this epoch, due to the sheltering presence of Rye Harbour’s terminal groyne and the river training wall. Sea level rise may start to have an impact on the integrity of the dune system. Increased management (i.e. planting of more sturdy species) may be needed or specific sections may require additional protection (i.e. fencing off vulnerable sections).	The integrity of the sand dune system will largely depend on the policy selected updrift. The dunes may continue to be reasonably stable if the current dimensions of the terminal groyne are maintained. However, their integrity may be threatened if the terminal groyne is shortened as a potential part of the managed realignment option. Sea level rise will have a major impact on dune integrity as the inter-tidal expanse exposed between high and low tide will reduce if the backshore position of the dune is maintained / held. Planting more sturdy species or sectioning off certain areas may be required to provide adequate protection.
	<i>Feed</i>	<i>Sand</i>	<i>Sand</i>
<i>Rates</i>	<i>Accretion</i>	<i>Potential fluxes between erosion and accretion</i>	<i>Erosion</i>

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Rye Harbour (River Rother) (4c17)	Rye harbour terminal groyne East pier training wall	Rye harbour terminal groyne East pier training wall	Maintenance work required on the Rye harbour terminal groyne and east pier- training wall.
	The functionality of the river is not expected to differ significantly from its current dynamics. Shingle will continue to be restricted from crossing the mouth of the river (in a west to east direction) due to the continued presence of the terminal groyne.	With a potential rise in sea level, combined with increased winter rainfall and storminess, the dynamics of the river could alter during this epoch. Operation of the sluice gates may need to increase to combat this and increased monitoring will be required to ensure the continued functionality of Rye Harbour. Dredging of the harbour will need to continue throughout this epoch (to ensure that the river remains navigable).	The existing structures will need to be upgraded to continue to provide a suitable standard of flood protection to the backing floodplain. During this epoch the river may begin experiencing episodic ‘flash-flood’ events. Defences will therefore need to protect the assets from such an event. The terminal groyne will continue to arrest shingle movement to downdrift frontages.
<i>Feed</i>	<i>Sand</i>	<i>Sand</i>	<i>Sand</i>
<i>Position</i>	<i>No change</i>	<i>No change</i>	<i>No change</i>

Proposed Policy Scenario: Hold the Line (0 – 50 years)			Managed Realignment (50-100 years)
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Rye Harbour to Winchelsea Beach (4c18)	<p>Rye harbour terminal groyne, east pier training wall</p> <p>Groynes Recycling scheme</p>	<p>Cease recycling</p> <p>Retreated secondary defence</p> <p>Rye harbour terminal groyne</p>	<p>Retreated secondary defence</p> <p>Rye harbour terminal groyne (in current or partial form)</p>
	<p>The current scheme will ensure that the shingle beach is held in its current position at the western extremity. At the eastern end however, due to alongshore transport feed and the presence of the Rye Harbour terminal groyne the shingle beach will continue to accrete.</p>	<p>With the exception of the western end the shingle barrier beach will be allowed to function relatively freely and align itself to a position more commensurate with shoreline energy and sea level rise (which may be in the region of 4 to 6mm/per annum) as it does so.</p> <p>The shingle beach will continue to accrete, at the eastern end, due to the presence of the terminal groyne</p>	<p>The shingle barrier beach will continue to roll landwards, in response to sea level rise and a lack of contemporary sediment entering the system, to align itself to a position more commensurate with shoreline energy. Should the terminal groyne remain then the shingle beach will continue to accrete, at the eastern end, however if there was partial removal of the terminal groyne then the shingle beach at the eastern end of this frontage would proportionally migrate landwards.</p> <p>Localised flooding will be instigated, predominantly at the western end, but the back barrier should be sufficiently self-sustaining. It is unlikely that roll back will go beyond the retired secondary defence, as a more sustainable coastline will function.</p>
<i>Feed</i>	<i>Sand</i>	<i>Sand</i>	<i>Sand</i>
<i>Rates</i>	<i>10 to 20m erosion</i>	<i>20 to 50m erosion</i>	<i>40 to 100m erosion</i>

Proposed Policy Scenario: Hold the Line (0 – 50 years)		Managed Realignment (50 – 100 years)	
Years 0 – 20 (2025)		Years 20 – 50 (2055)	Years 50 – 100 (2105)
Winchelsea Beach to Cliff End (4c18)	<p>Concrete rubble/timber breastwork and timber groynes at Cliff End Concrete seawall fronted by an apron and groynes along the remainder. Beach recycling</p>		<p>Relocate timber breastwork and groynes Failure of the concrete seawall Construct a retired defence</p>
	<p>Sediment recycling operations and the presence of a seawall / breastwork will fix the present plan-form position of the shoreline and prevent the shingle barrier beach from rolling back.</p> <p>The groynes would continue to trap the limited material supplied from the west, to maintain a beach similar to that at present.</p> <p>To sustain crest height beach recycling is conducted.</p>	<p>The timber breastwork will provide some protection but will not halt erosion and therefore it will need to be located landwards of its current position to keep pace with sea level rise.</p> <p>Foreshore narrowing is likely to occur as a result of sea level rise and could be in the region of 10 to 20m by 2055. Material (fines) will continue to be supplied to and transported along this frontage.</p>	<p>The timber breastwork will be located landwards of its current position to keep pace with the retreated position and although it will limit some erosion it will do very little to halt it.</p> <p>A nominal amount of beach material will continue to be supplied to and transported along this frontage.</p> <p>A shallow mixed sand and shingle beach will occupy a retreated position, instigating re-alignment of the barrier beach.</p> <p>Any material re-worked within this system would be transported alongshore and onto downdrift 'units'.</p>
<i>Feed</i>	<i>Shingle and fines</i>	<i>Shingle and sand</i>	<i>Shingle and sand</i>
<i>Rates</i>	<i>No change (in the position of the Back of the beach)</i>	<i>No change (in the position of the Back of the beach)</i>	<i>Retreat to 20 to 50m erosion</i>

Proposed Policy Scenario1: No Active Intervention (0 – 100 years)				
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>	
Cliff End to Fairlight Cove (4c19)	No defences and no management practises			
	<p>Cliff erosion will continue at a rate similar to that experienced historically, c. 10 to 20m by 2025.</p> <p>Material eroded from the cliffs will be predominantly fines and therefore will be either lost offshore or transported alongshore to feed units downdrift (eastwards).</p> <p>The beach fronting the cliffs will be similar to what it currently is i.e. the foreshore is made up of sand, shingle and collapsed cliff material.</p>	<p>Cliff erosion will continue at a slightly greater rate than that experienced historically, c. 30 to 50m by 2055, due to sea level rise and its effects on the geological composition of the cliffs.</p> <p>Material from the cliffs will continue to reside temporarily on the foreshore but the volume is unlikely to be sufficient to keep pace with sea level rise, which could be in the region of 4 to 6mm/per annum, nor will it be adequate enough to build beaches.</p> <p>Very little material will enter or exit the system and what does accumulate at the toe of the cliffs will be transported alongshore or offshore.</p>	<p>Cliff erosion will continue at a greater rate than that experienced historically, it could be in the region of 100m by 2105.</p> <p>Recession will provide predominantly 'localised' fine material to the foreshore, which will be small in volume and therefore insufficient to build beaches.</p> <p>Should any material accumulate at the cliff toe, it will be transported eastwards by alongshore processes, to either Cliff End or to the Rye Bay sink.</p>	
	<i>Feed</i>	<i>Small amount of fines</i>	<i>Predominantly fines</i>	<i>Fines</i>
	<i>Rates</i>	<i>10 to 20m erosion</i>	<i>30 to 50m erosion</i>	<i>60 to 100m erosion</i>

Proposed Policy Scenario: Managed Realignment (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Fairlight Cove (East) (4c20)	Rock bund at toe of the cliffs. (Concrete rubble, timber breastwork and a few timber groynes at eastern extremity (Cliff End))		Strengthen rock bund
	<p>Cliff erosion will continue at similar rates to that experienced since the construction of the rock bund.</p> <p>Very small quantities of shingle, from updrift sources (recharge from Hastings beach and material from landslips at Fairlight Central), could continue to accumulate in front of the bund, assisting the protection provided by the bund.</p> <p>The sand beach that fronts the cliffs, on which the shingle rests, is not anticipated to alter in any significant way.</p>	<p>Cliff erosion will continue at a potentially greater rate than that experienced since the construction of the rock bund, due to sea level rise (c.4 to 6mm/per annum).</p> <p>Although the rock bund will reduce toe erosion, a landward movement in the cliff top position will still occur, which could be in the region of 10 to 20m by 2055. Debris will accumulate at the cliff toe, yielding small quantities of sand and silt to the foreshore.</p> <p>The beach in front of the bund will narrow due to sea level rise and a lack of contemporary beach building material entering the system.</p>	<p>Erosion rates, at the cliff toe, will continue to be restricted due to the presence of the rock bund. For the bund to remain effective it will need to be maintained, to keep pace with sea level rise, which could be as much as 4 to 6mm/per annum during this epoch.</p>
	<i>Feed</i>	<i>No significant change in sediment input / outputs are expected during this epoch.</i>	<i>Mainly fines</i>
<i>Rates</i>	<i>c.5 to 10m erosion</i>	<i>c.10 to 20m erosion</i>	<i>c.20 to 50m erosion</i>

Two options were taken forward

Proposed Policy Scenario 1: Managed Realignment (0 – 20 years)		No Active Intervention: (20 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Fairlight Cove Central (Rockmead Road) (4c21)	Rock bund With landslips being the key failure mechanism along this frontage (due to the nature of the geology), some form of ‘management’ is being considered to reduce the rate of cliff top retreat and consequently the risk to cliff top properties. These may include measures to reduce the rate of slope retreat and erosion at the toe. It is recognised, however, that this will not halt erosion and that property loss on this frontage will be ongoing under this policy.	During this epoch it is proposed that the cliffs will have attained some degree of stability (a ‘natural angle of rest’) and therefore preventative measures, introduced in the previous epoch, will not be effective. Any material released from the cliffs will be transported alongshore to Fairlight Cove; it will, however, be insufficient to build beaches.	During this epoch the probability of another landslip event will become increasingly probable with time. Despite annual and episodic cliff erosion, very little additional ‘beach building’ material will be provided to the foreshore and to down drift frontages. This, combined with the effects of sea level rise, will increase the vulnerability of the cliff toe to wave attack.
	<i>Feed</i>	<i>Fines released</i>	<i>Fines released</i>
<i>Rates</i>	<i>Loss of tension-crack zone / area</i>	<i>1.0 to 1.5m per annum</i>	<i>1.0 to 1.5m per annum, possibly up to 2m/year in long term</i>

Proposed Policy Scenario 2: Hold the Line (0 – 50 years)		Managed Realignment (50-100years)
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>
Fairlight Cove Central (Rockmead Road) (4c21)	Stabilisation works required: this could include re-profiling, cliff toe protection and drainage works	
	<p>With landslips being the key failure mechanism along this frontage (due to the nature of the geology), 'management' will ideally need to be in the form of a multi-disciplinary approach. This may include a variety measures. Due to the time element required for agreement / implementation of a scheme, plus potentially re-profiling the cliffs, some cliff top land would be lost to achieve a suitable angle of rest. For example:</p> <p>Approximate cliff height: 50m - the angle of rest (re-profiled) can therefore range between 15-25 degrees, which would equate to 186-107m retreat (20 degrees would equate to 137m retreat from the cliff toe/slump material).</p> <p>Following stabilisation techniques the cliffs will attain a relative degree of stability. However, their ability to continue achieving this angle of rest, given the nature of the cliff's geology, will become increasingly threatened with time.</p>	<p>During this epoch defences will come under increasing pressure to maintain the cliff's stability. When it becomes unpractical to maintain the position, defences will be allowed to fail and drainage works will cease to be managed and operated. As soon as this is the case, natural cliff processes will be re-activated, re-releasing sediment into the system (which may temporarily provide some protection to the cliff toe).</p> <p>During this epoch the probability of another landslip event occurring will become greater with time.</p> <p>Erosion rates at the cliff toe are likely to increase with sea level rise and sub-aerial weathering. These in turn are likely to become more pronounced due to climate change (particularly increased winter rainfall).</p>
	<i>Feed</i>	<i>Fines released</i>

Proposed Policy Scenario 2: Hold the Line (0 – 50 years)			Managed Realignment (50-100years)
	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Rates	Retreat to tension crack area	Stabile cliff top	Retreat reactivated, with possible cliff position 'catch-up'. Long term rates possibly c1.5m/ 2m per annum, but may be short term episodic landsliding.

Proposed Policy Scenario: No Active Intervention (0 – 100 years)				
	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)	
Fairlight Cove (West) (4c22)	No defences	No defences	No defences	
	Cliff erosion would continue at a rate similar to that experienced historically. By 2025 it is anticipated that the cliffs will have eroded some 10 to 20m. Material released from cliff erosion along this section will either be: 1) lost offshore, 2) retained on the local beach affording some protection to the toe or 3) transported alongshore in an eastwards direction. The shoreline will not look too dissimilar from that of the present day.	Cliff erosion will continue at a slightly greater rate to that experienced historically due to sea level rise. Limited sediment will enter the system due to the continued influence of updrift structures. Cliff erosion will supply a nominal amount of beach building material to the foreshore; however, with an increase in sea level rise, the vulnerability of the cliff toe to wave attack will increase.	With a continued rise in sea level, cliff erosion will occur at a slightly greater rate than that experienced historically. This, coupled with the progressive removal of cliff debris resting at the toe, will increase the cliff's vulnerability. Limited sediment will enter the system due to the continued influence of updrift structures i.e. Hastings harbour arm. Cliff erosion will supply a nominal amount of beach building material to the foreshore before being transported alongshore.	
	<i>Feed</i>	<i>Fines released</i>	<i>Fines released</i>	<i>Fines released</i>
	<i>Rates</i>	<i>10 to 20m erosion</i>	<i>20 to 30m erosion</i>	<i>35 to 70m erosion</i>

Proposed Policy Scenario: No Active Intervention (0 – 100 years)				
		<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Fairlight West to Hastings Harbour (4c23)	No defences			
		Cliff erosion will continue at a rate similar to that experienced historically; by 2025 it is anticipated that 10 to 20m will have eroded. Material released from cliff erosion along this section will either be: 1) lost offshore, 2) retained on the local beach affording some protection to the toe or 3) transported alongshore (in an eastwards direction). The shoreline and the cliffs will not look too dissimilar to their current form.	Cliff erosion will continue at a slightly greater rate to that experienced historically, due to the effects of sea level rise. Retreat is estimated to be in the region of 30 to 40m by 2055. Hastings harbour arm will continue to restrict feed to this frontage, which combined with sea level rise, will lead to platform lowering. A reduction in the inter-tidal area, combined with the progressive removal of cliff debris that rests at the cliff toe, will increase cliff vulnerability. Any material transported alongshore, to Fairlight Cove, will not be sufficient to build beaches to the necessary standard.	Cliff erosion is anticipated to be in the region of 60-100m by 2105. Despite a slight increase in cliff erosion, very little additional 'beach building' material will be provided to the foreshore and to down drift frontages i.e. Fairlight Cove. This combined with the effects of sea level rise, will increase the vulnerability of the cliff toe to wave attack.
	<i>Feed</i>	<i>Fines released</i>	<i>Fines released</i>	<i>Fines released</i>
	<i>Rates</i>	<i>10 to 20m erosion</i>	<i>30 to 40m erosion</i>	<i>60 to 100m of erosion</i>

Proposed Policy Scenario2: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Hastings East (includes Hastings Harbour) (4C24)	Timber groynes Concrete seawall Hastings harbour arm at the eastern extremity of the frontage.	Strengthen groynes (concrete) Strengthen seawall	Implement beach recharge scheme (?)
	The shingle beach will continue to be held in place by a series of timber and concrete groynes and there will be no change in shoreline / back of beach position due to the continued presence of the seawall. The harbour arm, at the eastern extremity of the frontage will continue to restrict alongshore transportation to the east, which will result in further build up of the beach at this location.	The seawall will continue to hold the shoreline in its present position but the width of the shingle beach will narrow as sediment supply, from updrift sources becomes increasingly restricted, due to updrift promontories and defence works. Unless the groynes are upgraded they will struggle to trap the limited sediment (shingle). Being held seaward of its natural alignment the frontage will become increasingly exposed and therefore a more substantial structure would be required to sustain the integrity of the standard of defence afforded. Cutback could prevail at the eastern end of this frontage, downdrift of the harbour arms due to sediment starvation and a change in management practises.	The sea wall will continue to fix the plan position of the shoreline. There will be minimal beach material entering the system from the west, hence the need for recharge. A small beach may be retained updrift of the harbour arms but little if any is anticipated along the eastern extremity, downdrift of the harbour arm, which will aggravate erosion at Hastings Cliffs. Sea level rise, which could be in the region of 4 to 6mm / per annum will exacerbate the situation.
	<i>Feed</i>	<i>Shingle transported alongshore</i>	<i>Shingle and fines will be transported alongshore.</i>
<i>Position</i>	<i>No change (back of beach)</i>	<i>No change (back of beach)</i>	<i>No change (back of beach)</i>

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Hastings West (4c24)	<p>Concrete seawall fronted by rock and timber groynes. Rock toe bund located in front of the clay cliffs, east of Glyne Gap.</p>		<p>The present defences need to increase in proportions, to continue holding shoreline position and trap beach material. Seawall strengthened / lengthened Rock bund extended Recharge scheme introduced</p>
	<p>The shingle beach fronting the seawall will continue to be ‘held’ in place by a series of timber and concrete groynes.</p>	<p>The seawall will continue to hold the backshore position of the beach.</p> <p>As the shoreline is being held seaward of its natural alignment, it will become increasingly exposed to wave attack.</p> <p>Groynes throughout the frontage will temporarily succeed in trapping material to retain a shingle beach.</p>	<p>The seawall will hold the shoreline in its present position, to maintain defence integrity; the seawall will need strengthening and extending (to the clay cliffs).</p> <p>The prominence of this frontage (and subsequent updrift frontages) will mean that it is highly probable that little beach will be present.</p> <p>The groynes could become redundant as increased wave exposure exerts additional stress, therefore little shingle beach could remain. A beach recharge scheme may be required.</p>
<i>Feed</i>	<i>Shingle transported alongshore</i>	<i>Shingle and fines will be transported alongshore.</i>	<i>Shingle and fines will be transported alongshore</i>
<i>Position</i>	<i>No change</i>	<i>No change</i>	<i>No change</i>

Proposed Policy Scenario1: Hold the Line (0 – 100 years)				
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>	
Bexhill East: (Bulverhythe and Glyne Gap) (4c25)	Timber groynes along entire frontage. Concrete sea wall up to Galley Hill		The plan position is held seaward of its natural alignment; the present defences need to increase in proportions, to continue holding shoreline position and trap beach material. Implement a beach recharge scheme	
	The seawall will continue to fix the position of the sand and shingle beach. The groynes will continue to retain a shingle beach but this may narrow and lower with time. Any material not retained by the groynes, will be transported to frontages downdrift (Hastings West). The cliffs, east of Glyne Gap, will continue to erode at a rate slower than natural erosion rates due to the presence of sea defences.	The seawall will continue to fix the position of the sand and shingle beach. The groynes will need regular maintenance to continue trapping material to maintain a protective natural foreshore. This will become more difficult with time due to a limited amount of contemporary sediment input combined with sea level rise. The shingle beach will steepen and narrow throughout this epoch. The cliffs will continue to erode at a rate slower than natural erosion rates due to the presence of sea defences	The seawall will continue to prevent a landward movement of the shore and cliff line. In response to sea level rise, this will produce higher water levels / waves and conditions that are more volatile and less conducive to beach stability, but will enhance the potential for foreshore lowering. If the groynes are not heightened they could become redundant as sea level rise ‘strips’ away the protective beach material. It is anticipated that less material will enter the frontage throughout this epoch, which will exacerbate the problem, hence the need to implement either beach recharge or more substantial defence structures.	
	<i>Feed</i>	<i>Shingle transported alongshore</i>	<i>Shingle and fines will leave the system</i>	<i>Fines will be transported alongshore</i>
	<i>Position</i>	<i>No change (back of beach)</i>	<i>No change (back of beach)</i>	<i>No change (back of beach)</i>

Proposed Policy Scenario1: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Bexhill West: (Bexhill and Cooden) (4c26)	Concrete seawall and promenade Timber groynes		Substantial maintenance of the sea defences
	<p>The seawall will fix the position of the sand and shingle beach, along the western section of the frontage in its present position, as well as restricting inundation of the flat marshland. To the east the seawall will hold the cliffs in their present position and limit the degree of erosion.</p> <p>The shingle beach is expected to be slightly narrower and lower than what it currently is due to the finite nature of the foreshore store.</p> <p>Any material entering the system will be ‘trapped’ by groynes, but as this interrupts alongshore transport there will be adverse effects downdrift.</p>	<p>The seawall present along the frontage will preclude a landward movement of the shoreline, which will result in foreshore lowering.</p> <p>The groynes will need regular maintenance to continue trapping material to maintain a protective natural foreshore. This will become more difficult with time due to a limited amount of contemporary sediment input and rising sea levels.</p> <p>The shoreline at the western extremity of the frontage would start to experience cutback as a hard defence meets a ‘softer’ engineering option updrift. This may result in increased susceptibility to wave attack.</p>	<p>The seawall will continue to prevent a landward movement of the shoreline, in response to sea level rise, which could result in inter-tidal squeeze.</p> <p>This section of frontage is likely to form a slight promontory, which may or may not be fronted by a shingle beach by the end of the epoch. If the latter is the case then the groynes will become redundant (and therefore will need to be removed) and substantial work will be required to maintain the integrity of the seawall.</p> <p>Sea level rise will induce greater wave activity and exposure which will exert additional pressure on the current defences and management practices along this section of the coastline.</p>
	<i>Feed</i>	<i>Shingle transported alongshore</i>	<i>Shingle and fines will leave the system</i>
<i>Position</i>	<i>No change (back of beach)</i>	<i>No change (back of beach)</i>	<i>No change (back of beach)</i>

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Pevensey and Hooe Levels (4c27)	Timber groynes (will need to be strengthened with time)		
	Beach recycling (will need to increase in frequency and volume with time)		
	<p>The timber groynes and shingle recycling will continue to 'hold' the shingle beach in a similar plan position to where it currently is.</p> <p>Erosion of the beach crest during storm events will start to put specific areas at significant risk from flooding.</p> <p>Feed is intercepted by updrift structures (e.g. Sovereign Harbour Arm) affecting the supply of shingle and sand to adjacent frontages e.g. Bexhill.</p>	<p>The position of shingle beach may have 'rolled back' slightly landwards, under the impact of sea level rise. To combat this and associated flooding and overtopping, the timber and rock revetment will need to be strengthened.</p> <p>There will be little sediment input from updrift frontages due to the heavily managed frontage at Eastbourne and at Eastbourne East.</p> <p>With a lack of contemporary material entering the system along with sea level rise, beach volume will decrease, resulting in denudation of foreshore sediments and a greater propensity for foreshore lowering.</p>	<p>Erosion, along this frontage, is anticipated to be greater than what it currently is, as the barrier struggles to keep pace with sea level rise. Defences may therefore need to be upgraded to limit flood propagation.</p> <p>Any shingle reworked, from the barrier beach, would be transported in an eastwards direction and during this epoch complete failure of the beach crest is likely</p> <p>.</p> <p>Very little sediment will continue to enter this system due to the presence of updrift structures e.g. Sovereign Harbour Arm.</p>
	<i>Feed</i>	<i>Limited throughput of shingle and fines</i>	<i>Shingle and fines will be transported alongshore</i>
<i>Position</i>	<i>The back of the beach will be held in its current position Foreshore narrowing</i>	<i>The back of the beach will be held in its current position Foreshore narrowing</i>	<i>The back of the beach will be held in its current position Foreshore narrowing</i>

Proposed Policy Scenario: Hold the Line(0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Sovereign Harbour (4c28)	<i>Timber groynes exist along part of this frontage. Harbour arms at Sovereign Harbour together with short sections of rock revetment.</i>	<i>Seawall raised and strengthened Rock and timber groynes Potential need for recharge scheme to be implemented</i>	
	<p>The shingle beach will reduce slightly in volume throughout the duration of this epoch.</p> <p>The 'trapping mechanism' of the harbour arms will limit the amount and type of material leaving the system i.e. shingle movement will be arrested but the movement of sand will continue.</p>	<p>The shingle beach will reduce in volume, (narrowing and lowering) in response to sea level rise and the lack of contemporary sediment entering the system. Beach material drawn down is likely to be transported alongshore, in an eastwards direction, to feed to beaches within the confines of this frontage.</p> <p>The volume of material remaining would not however be sufficient to maintain a beach crest of the recommended width at this frontage or indeed downdrift. This will result in potential overtopping and increased exposure of the defence structures.</p>	<p>The foreshore could narrow some 10 to 20m by 2105, releasing sand and shingle downdrift (for the shingle this would be as far as the harbour arms) and offshore.</p> <p>Denudation of the foreshore will be greatest downdrift of Sovereign Harbour, due to the trapping nature of this structure.</p> <p>Sea level rise (in the region of 4 to 6mm / per year), propagates higher waves and more volatile conditions.</p>
<i>Feed</i>	<i>Mainly fines will leave the system (alongshore and offshore)</i>	<i>Mainly fines will leave the system (alongshore and offshore)</i>	<i>Mainly fines will leave the system (alongshore and offshore)</i>
<i>Position</i>	<i>No change (back of beach)</i>	<i>No change (back of beach)</i>	<i>No change (back of beach)</i>

Proposed Policy Scenario 1: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Eastbourne (4c29)	<i>A vertically faced concrete seawall and promenade along the majority of this frontage, with timber groynes along the frontage. Short sections of rock revetment exist in potentially vulnerable areas. Capital beach recharge occurs on a periodic basis, which may need to increase with time.</i>		<i>Concrete seawall raised and strengthened Rock and timber groynes</i>
	<p>The seawall and rock revetment will hold the cliffs to the west and the back of the shingle beach, along the central and eastern section, in position.</p> <p>Unless recharged the shingle beach will begin to reduce in volume, as the low sediment feed from updrift sources (Beachy Head) is insufficient to sustain current beach levels.</p> <p>It is anticipated that the movement of shingle being transported to the east, to updrift frontages, will not be significantly different from the present rate, due to the continued presence of groynes, which arrest alongshore transportation.</p>	<p>The seawall and rock revetment (along the western section) will continue to hold the shoreline in a fixed position, albeit seaward of its natural alignment.</p> <p>Insufficient feed from updrift sources and a rise in sea level will result in a fall in beach levels along the managed front. To combat this volume and frequency of capital recharge will need to be increased.</p> <p>The groynes will continue to retain a beach and influence alongshore sediment transportation. However sustaining this material will become increasingly difficult with time.</p>	<p>The seawall and rock revetment will need to be strengthened substantially at some point during this epoch.</p> <p>The shoreline will continue to be held seaward of its natural alignment; this will exacerbate the tendency for foreshore lowering, the removal of beach material and platform lowering at Holywell Cliffs, in response to sea level rise and increased wave action.</p> <p>To retain a shingle beach, under the predicted sea level rise rate (c.4 to 6mm / per annum), the volume and frequency of recharge will need to increase otherwise little / no amenity beach will remain.</p> <p>Having been held and continuing to hold the shoreline seaward of its natural alignment Eastbourne will form a slight promontory.</p>
	<i>Feed</i>	<i>Shingle and fines will be transported alongshore</i>	<i>Shingle and fines will be transported alongshore</i>
<i>Position</i>	<i>No change (back of the beach)</i>	<i>No change (back of the beach)</i>	<i>No change (back of the beach)</i>

Proposed Policy Scenario 1: No Active Intervention (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Beachy Head (4c30)	No management practises and no defences		
	Cliff erosion would continue at similar rates to those experienced historically, c.10m by 2025.	There would be continued cliff erosion, c.20 to 30m by 2055, which will continue to supply mainly fines to the frontage and those downdrift.	Continued cliff erosion anticipated to be in the region of 50 to 60m by 2105.
	Erosion of the cliffs will provide some, albeit minimal, localised beach building material but the majority will be fines.	With sea level rise the rock platform will decrease in its ability to protect the cliff toe from wave attack, erosion will therefore increase providing additional sediment to the system, as the cliffs retreat.	Insufficient toe protection due to sea level rise (and the potential for increased storminess), will increase wave energy at the cliff base, which will trigger further erosion and the potential for instability.
	The limited release of shingle, from the debris, will provide temporary ‘pulses’, to downdrift frontages.	This material will provide temporary toe protection before being transported alongshore.	Despite an increase in cliff erosion, very little additional beach building material will be supplied to the system and transported alongshore.
<i>Feed</i>	<i>Predominantly fines transported alongshore and some offshore</i>	<i>Predominantly fines transported alongshore and some offshore</i>	<i>Predominantly fines transported alongshore / offshore</i>
<i>Rates</i>	<i>10m erosion</i>	<i>20to 30m erosion</i>	<i>50 to 60m erosion</i>

G2.3 ALTERNATIVES TO THE PREFERRED SCENARIO:

G2.3.1 Shakespeare Cliff

Proposed Policy Scenario 1: No Active Intervention (0 – 50 years)			Hold the Line (50 – 100 years)
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Shakespeare Cliff (4c03)	No Defences or Management		A linear defence (seawall) to be constructed to reduce retreat.
	<p>The backshore cliffs and fronting shore platform will continue to erode at a rate similar to that at present, c.10m by 2025.</p> <p>The shingle / debris beach will continue to be retained in front of the cliffs, although this is directly related to the extent of cliff erosion.</p>	<p>The backshore cliffs will continue to erode at a rate similar to that at present, resulting in retreat of 25m by 2055.</p> <p>The shingle / debris beach will continue to be retained in front of the cliffs, due to erosion although the beach might narrow as a result of a lack of sediment entering the system and cliff recession not keeping pace with sea level rise.</p>	<p>The cliffs will erode at a slower rate than the historic trend due to the construction of a linear defence, which will provide some cliff stability (c.40m retreat by 2105)</p> <p>Increased exposure due to rising sea levels will diminish the beaches retention capability and a potential reduction in sediment supply means that there will no longer be a beach fronting the linear defence. Substantial works may be required to maintain the integrity of this defence.</p>
<i>Feed</i>	<i>Shingle and fines</i>	<i>Shingle and fines</i>	<i>Fines</i>
<i>Position</i>	<i>c. 10m erosion</i>	<i>c. 25m erosion</i>	<i>c.40m erosion</i>

Proposed Policy Scenario 2: No Active Intervention(0 – 50 years)			Hold the Line (50 – 100 years)
	Years 0 – 20 (2025)	Years 20 – 50 (2055)	Years 50 – 100 (2105)
Shakespeare Cliff (4c03)	No Defences and no beach management		A linear defence (rock bund) to be constructed to reduce retreat.
	<p>The backshore cliffs and fronting shore platform will continue to erode at a rate similar to that at present, c.10m by 2025.</p> <p>The shingle / debris beach will continue to be retained in front of the cliffs, although this is directly related to the extent of cliff erosion.</p>	<p>The backshore cliffs will continue to erode at a rate similar to that at present, resulting in retreat of 20m by 2055.</p> <p>The shingle / debris beach will continue to be retained in front of the cliffs, due to erosion although the beach might narrow as a result of a lack of sediment entering the system and cliff recession not keeping pace with sea level rise.</p>	<p>The cliffs will erode at a slightly slower rate than they have done historically with the introduction of a rock bund.</p> <p>Increased exposure due to rising sea levels will diminish the beaches retention capability and a potential reduction in sediment supply means that there will no longer be a beach in fronting the linear defence. Substantial works may be required to maintain the integrity of this defence.</p>
<i>Feed</i>	<i>Shingle and fines</i>	<i>Shingle and fines</i>	<i>Mainly fines</i>
<i>Rates</i>	<i>c. 10m erosion</i>	<i>c. 25m erosion</i>	<i>c.40m erosion</i>

G2.3.2 Abbots Cliff

Proposed Policy Scenario: No Active Intervention (0 – 50 years)		Hold the Line (50 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	
Abbots Cliff (4c05)	No Defences / Management		Rock Bund
	The chalk cliffs will continue to erode at a similar rate to that experienced historically c.5m to 10m by 2025. Slow rates of platform lowering are anticipated during this epoch and therefore toe protection and stability will continue. Material released will be predominantly fines and therefore not provide localised and downdrift beach building material.	The chalk cliffs will continue to erode, at a potentially higher rate than they have done historically, due to sea level rise. Retreat could be in the region of 10 to 25m by 2055. Rates of platform lowering are also likely to be slightly higher due to increased wave attack. Any chalk rubble released from rock falls will initially accumulate at the toe of the cliffs until it becomes broken down and transported alongshore	With the introduction of a rock bund the cliffs will erode at a similar pace as historical rates with the introduction of a rock bund. Cliff top recession will however continue due to sub-aerial weathering and adjacent cliff instability. Retreat could therefore be in the region of 30 to 60m by 2105. Any chalk rubble released will initially accumulate at the toe until it is broken down and transported alongshore to Samphire Hoe.
	<i>Feed</i>	<i>Mainly fines and some flints</i>	<i>Mainly fines and some flints</i>
<i>Rates</i>	<i>0.25 to 0.5m/per annum</i>	<i>0.25 to 0.5m/per annum</i>	<i>0.25 to 0.5m/per annum (cliff toe) 30 to 60m by 2105 (cliff top)</i>

G2.3.3 Folkestone Warren

Proposed Policy Scenario: Hold the Line (0 – 50 years)		Managed Realignment (50 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	
Folkestone Warren (4c06)	Concrete sea wall and timber groynes along the warren frontage		Maintenance of the seawall
	The seawall will continue to prevent cliff retreat throughout this epoch Limited cliff erosion will yield minimal and localised material to the foreshore, the majority of which will however be fines. The volume of material exiting the system (in an eastwards direction) will be low.	The seawall will continue to prevent retreat of the backshore beach but the frontage will continue to move seawards at a similar rate to historical rates. Because the frontage is defended, the eroded material will continue to not reach the foreshore and therefore the sand beach will continue to deplete.	The seawall will continue to fix the plan position of the shoreline, resulting in very little beach being present at this point in time. Controlled failure of the cliffs may be endorsed in specific areas to reduce the amount of 'stress' in the system. Controlled failure would release considerable volumes of predominantly fine sediment to the foreshore, which would be removed to downdrift and offshore locations.
	<i>Feed</i>	<i>None</i>	<i>None</i>
<i>Rates</i>	<i>No change at the toe 1.4m by 2025 at the cliff top (0.07m/per annum)</i>	<i>No change (at toe) 2.8 to 3m (at the top) by 2055</i>	<i>No change at the cliff toe 4 to 5m at the cliff top by 2105</i>

G2.3.4 Copt Point

Proposed Policy Scenario: No Active Intervention (0 – 50 years)		Hold the Line (50 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	
Copt Point (4c07)	No Defences and no beach management		Seawall / rock revetment
	At Copt Point the cliffs are fronted by a shore platform, erosion is therefore lower. Rates along this section will continue to be similar to that experienced historically i.e. localised large-scale rotational landsliding, which may cause up to 10m of retreat in a single event. Sediment feed into the system is limited due to the harbour arms at Folkestone. Therefore little material will exit the system with the small amount that does being predominantly fines.	Erosion rates along this section will continue but at a slightly higher rate than that experienced historically due to sea level rise, which will exacerbate localised large-scale rotational landsliding events. Sediment feed into the system will continue to be limited due to the harbour arms at Folkestone. Therefore little material will exit the system with the small amount that does being predominantly fines.	Depending on the nature of the defence i.e. seawall or revetment, the toe of the backing cliffs will either cease to be exposed to toe erosion or the experienced rate of erosion will be slower than the historic rate. Although the defence structure will provide some toe stability, cliff top recession will still occur (albeit a slightly slower rate). Increased wave exposure, due to sea level rise, will diminish the beaches retention capability, which may result in there being no beach in front of the structure. (Substantial works may be required to maintain the integrity of this defence in the future).
	<i>Feed</i>	<i>Mainly fines (sand) some shingle</i>	<i>Mainly fines (sand) some shingle</i>
<i>Position</i>	<i>c.5 to 10m (0.25 to 0.5m/per annum)</i>	<i>c.15 to 25m</i>	<i>Cliff top: c.20 to 30m</i>

G2.3.5 Hythe Ranges

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Hythe Ranges (4c10)	A rock revetment and earth embankment with maintained timber groyne field and shingle beach		Substantial strengthening of the rock revetment Supplement with beach recharge Groynes
	<p>The timber groynes and rock revetment will continue to hold the back of the beach in its present position, although the foreshore may narrow and lower slightly.</p> <p>Material will continue to move alongshore, transporting mainly shingle in an updrift direction.</p>	<p>In order to prevent erosion and the landward migration of the shingle barrier the rock revetment will need to be upgraded, to maintain its defensive effectiveness. The foreshore will narrow and steepen as a consequence.</p> <p>The alongshore transportation of material will continue.</p>	<p>Unless substantial engineering works and management practises are put in place, the shingle beach is likely to reduce in volume, to a point at which very little / none will remain, due to sea level rise and decreasing sediment supply.</p> <p>Little sediment is entering the system and because the shoreline is being held seaward of its natural alignment, sediment will not be reworked and therefore very little sediment will leave the system.</p>
<i>Feed</i>	<i>Shingle</i>	<i>Sand and shingle</i>	<i>Very little sand and shingle</i>
<i>Position</i>	<i>No change to the back of beach</i>	<i>No change to the back of beach</i>	<i>No change to the back of beach</i>

G2.3.6 Hythe Ranges to Romney Sands

Proposed Policy Scenario: Hold the Line (0 – 20 years)		No Active Intervention (20 – 100 years)		
		<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Hythe Ranges to Romney Sands (4c11)	<i>A groyned beach and concrete seawall extends from Littlestone-on-Sea to St. Mary’s Bay, periodic shingle re-nourishment.</i>		<i>No maintenance of defences Groynes failing early on Seawall will fail at the latter stages</i>	<i>No defences or management practises</i>
	The mixed sand and shingle beach will continue to be held, seaward of its natural alignment, by the seawall and groynes.	Upon groyne failure longshore drift along this frontage will initially increase. Consequently the beach will narrow and lower.	Retreat of the shoreline will be imminent during this epoch. Between St. Mary’s Bay and Dymchurch the plan position of the shoreline will become gradually embayed.	
	Alongshore sediment transport will continue to distribute in a predominantly northwards direction, tapering towards Romney Sands, where a null point and a fairly stable sand dune system will continue to exist. Little change in the dunes is anticipated during this epoch.	The failure of the seawall will result in the backshore position of the beach migrating landwards at a fairly rapid rate.	Throughout this epoch flooding of the hinterland will increase in frequency and intensity and with no formal defences it is likely that the hinterland will become a salt marsh.	
		Periodic flooding of the hinterland will be instigated as will the reworking of relict sediments which will provide a throughput of material to updrift frontages.	A lack of shingle entering the system will continue and any reworking of deposits from the backing hinterland will provide material (fines and shingle) to updrift frontages.	
<i>Feed</i>	<i>Shingle</i>	<i>Sand and shingle</i>	<i>Sand and shingle</i>	
<i>Position</i>	<i>No change to the back of the beach</i>	<i>Periodic flooding and roll back of the barrier beach</i>	<i>Flood inundation of Romney Marsh</i>	

G2.3.7 Lydd Ranges

Proposed Policy Scenario: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Lydd Ranges (4c14)	Continuation of periodic recycling and beach profiling Maintenance of the Green Wall.	Increase beach recycling and beach profiling or build a substantial hard defence along the entire length of the frontage. Green Wall still intact long the eastern end of the frontage) and therefore it is likely that this will defence will be sufficient.	
	<p>Erosion will continue to be most threatening at the western end of this frontage and despite shingle recycling the Green Wall, at this location, will be lost.</p> <p>The plan form would continue to try and move towards a swash-alignment and the low-lying alluvium areas would become increasingly susceptible to localised inundation.</p>	<p>To reduce the natural tendency for alignment recycling frequency and volumes will either have to increase significantly or a hard defence would have to be built.</p> <p>Again the most problematic area would be to the west.</p> <p>Either of the proposed management options will have an adverse affect on active coastal processes. A hard structure, for example, would fix the plan position of the shoreline and thus preclude swash alignment whereas recycling would create a shoreline that is artificial as the form of the beach would be determined by mechanical profiling.</p>	<p>Depending on the preferred updrift policy it is likely that some shingle and sand will enter the frontage but if a hard structure is built then this material will not rest here, as transportation rates along this frontage are quite high.</p> <p>If the frontage continues to be managed as it currently is then material will continue to be moved alongshore, resulting in this frontage increasing in vulnerability with time.</p>
<i>Feed</i>	<i>Shingle</i>	<i>Shingle and alluvium</i>	<i>Shingle and alluvium</i>
<i>Rates</i>	<i>Erosion (20 to 35m by 2025)</i>	<i>Erosion (55 to 85m by 2055)</i>	<i>Erosion (115 to 180m by 2105)</i>

G2.3.8 Jury's Gap to The Sutton's

Proposed Policy Scenario 1: Hold the Line (0 – 50 years)		Managed Realignment (50 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Jury's Gap to The Suttons (4c15)	Concrete seawall fronted with timber groynes Shingle recycling on this frontage along the eastern end.		Cessation of shingle recycling Gradual failure of groynes and other defence structures Retired secondary defence (various options)
	<p>The concrete seawall and timber groynes will continue to hold the back of the shingle and sand beach in its current position.</p> <p>The groynes will trap some of the limited beach building material, which combined with shingle recycling will maintain a similar form (beach profile) to that at present.</p> <p>The defences / management at this location will need upgrading if flood propagation is to continue being combated.</p>	<p>The seawall will need to be strengthened and shingle recycling might need to increase or a more substantial defence may need to be built i.e. a rock revetment.</p> <p>Little beach material will be supplied from the west and transported along and offshore.</p> <p>Although the shoreline will be held in place by the seawall, the beach that fronts it will narrow and steepen in form due to the effects of sea level rise.</p>	<p>With the cessation of beach recycling and failure of the timber groynes, beach levels along this frontage will fall dramatically.</p> <p>As soon as the seawall fails then realignment of the shoreline will occur. This process will take immediate effect due to the shoreline being held seawards of its natural alignment for more than 100 years. The process will also be accelerated by sea level rise and updrift structures continuing to arrest sediment entering the system.</p> <p>The failure of these defences would lead to potential inundation of large flood areas.</p>
	Feed	<i>Shingle</i>	<i>Shingle and sand</i>
Position	<i>No change to the back of the beach</i>	<i>No change to the back of the beach</i>	<i>The degree of erosion will depend on the position of the retired defence.</i>

Proposed Policy Scenario 2: Hold the Line (0 – 20 years)		Managed Realignment (20 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Jury's Gap to The Suttons (4c15)	Concrete seawall fronted with timber groynes Shingle recycling on this frontage along the eastern end.	Retired defence structure	
	<p>The concrete seawall and timber groynes will continue to hold the back of the shingle and sand beach in its current position.</p> <p>The groynes will trap some of the limited beach building material, which combined with shingle recycling; will maintain a similar form (beach profile) to that at present.</p> <p>At the boundary between Jury's Gap Lookout and Lydd Ranges there is the potential for outflanking, as the proposed policy, for Lydd Ranges is managed realignment. Consequently the defences / management at this location may need special attention, to combat flood propagation.</p>	<p>With the failure of the seawall and timber groynes the shingle beach along this frontage will retreat quite rapidly before being lost to coastal processes.</p> <p>Limited beach material (mainly fines) will continue to be supplied from the west but this will have little / no impact in sustaining a beach</p>	<p>Unless supplemented by substantial amounts of shingle, a beach along this frontage will be nonexistent due to the low lying nature of the hinterland, sea level rise and insufficient feed (due to the presence of updrift defence structures).</p> <p>The position of the shoreline will retreat to either the secondary defence or to the flood propagation boundary.</p>
	<i>Feed</i>	<i>Some shingle</i>	<i>Sand and shingle</i>
<i>Position</i>	<i>No change</i>	<i>The degree of erosion will depend on the position of the retired defence.</i>	<i>The degree of erosion will depend on the position of the retired defence.</i>

Proposed Policy Scenario 3: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Jury's Gap to The Suttons (4c15)	Concrete seawall fronted with timber groynes Shingle recycling on this frontage along the eastern end.		Strengthen seawall Strengthen groynes Increase volume / frequency / profiling of recycling
	<p>The concrete seawall and timber groynes will continue to hold the back of the shingle and sand beach in its current position.</p> <p>The groynes will trap some of the limited beach building material which combined with shingle recycling, will maintain a similar form (beach profile) to that at present.</p> <p>At the boundary between Jury's Gap Lookout and Lydd Ranges there is the potential for outflanking, as the proposed policy, for Lydd Ranges is managed realignment. Consequently the defences / management at this location may need special attention, to combat flood propagation.</p>	<p>The concrete seawall will need to be strengthened to continue holding the position, preventing flooding and overtopping. Shingle recycling might need to increase in volume and frequency.</p> <p>Some beach material (mainly fines) will continue to be supplied from the west.</p> <p>At Jury's Gap lookout there is the potential for outflanking. Consequently the seawall may have to be extended to combat flood propagation. Although the beach along this entire frontage will be held in place by the seawall, they will be narrower and steeper in form due to the effects of sea level rise, if not supplemented by increased recycling.</p>	<p>Unless supplemented by substantial amounts of shingle, beach levels along this frontage will fall due to sea level rise, updrift structures and insufficient contemporary sediment entering the system.</p> <p>With the shoreline position being held seawards of its natural alignment and a rise in sea level, which combined both increase exposure to wave attack, it will be extremely difficult to retain any beach along this frontage.</p>
	<i>Feed</i>	<i>Shingle</i>	<i>Sand and shingle</i>
<i>Rates</i>	<i>No change to back of beach</i> <i>Foreshore narrowing: (1.5m by 2025)</i>	<i>No change to back of beach</i> <i>Foreshore narrowing: (3.5m by 2055)</i>	<i>No change to back of beach</i> <i>Foreshore narrowing: (3.5m by 2055)</i>

G2.3.9 Rye Harbour

Proposed Policy Scenario: Hold the Line (0 – 50 years)			Managed Realignment (50 – 100 years)
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Rye Harbour (River Rother) (4c17)	Rye harbour terminal groyne East pier training wall	Rye harbour terminal groyne East pier training wall Shingle recycling will commence in preparation for managed realignment	Partial failure of Rye harbour terminal groyne (at the most seaward extent) Increase strength of river training walls Shingle recycling from the western side of the River Rother to Broomhill Sands. Periodic dredging of the River Rother to maintain navigation.
	The shingle beach on the westward side of the terminal groyne will continue to accrete at a similar pace as historical rates, due to the presence of Rye Harbour terminal groyne, which blocks shingle movement to downdrift frontages.	The shingle beach on the westward side of the terminal groyne will continue to accrete, as the presence of Rye Harbour terminal groyne will continue to block shingle movement to downdrift frontages. Shingle recycling, from the western side of the harbour arm to Broomhill Sands will commence to maintain navigation of the River Rother.	The shingle beach on the western side of the River Rother will migrate landwards, with the partial extraction of the terminal groyne and recycling of shingle to Broomhill Sands. The process of partially removing the terminal groyne will allow the coastline to function more naturally.
<i>Feed</i>	<i>Sand</i>	<i>Sand (Shingle will bypass the system via recycling)</i>	<i>Predominantly and some shingle to Camber Shingle to Broomhill (via recycling)</i>
<i>Rates</i>	<i>Accretion (determined by the shingle recycling scheme in place)</i>	<i>Erosion max. c.300m (in preparation for the partial removal of the Terminal Groyne.</i>	<i>No change: Erosion</i>

G2.3.10 Rye Harbour to Winchelsea Beach

Proposed Policy Scenario 1: Managed Realignment (0 – 50 years)		No Active Intervention (50 – 100 years)		
Years 0 – 20 (2025)		Years 20 – 50 (2055)		
Rye Harbour to Winchelsea Beach (4c18)⁸	Rye harbour terminal groyne and east pier river training wall, Groynes, recycling scheme and retreated secondary defence (recycling ceases: 20-50 years).			
	The shingle barrier beach will start to erode at the western end but continue to accrete at the eastern end, due to alongshore transport feed and the presence of the Rye Harbour terminal groyne.	<p>The shingle barrier beach will migrate landwards and as it does so will align itself to a position more commensurate with shoreline energy and sea level rise, which may be in the region of 4 to 6mm/per annum.</p> <p>The shingle beach will continue to accrete, at the eastern end, due to the presence of the terminal groyne.</p> <p>Localised flooding, of the low-lying hinterland, may occur under storm conditions but the impact of this is not anticipated too be great.</p>	The shingle barrier beach will continue to roll back landwards, in response to sea level rise and a lack of contemporary sediment entering the system (depending on the updrift policy), to align itself to a position more commensurate with shoreline energy. Should the terminal groyne remain then the shingle beach will continue to accrete, at the eastern end. If there was partial removal of the terminal groyne however, the shingle beach at the eastern end of this frontage would migrate landwards due to the presence of the terminal groyne. Localised flooding would initially inundate the low-lying hinterland, especially at the western end, but the frequency and magnitude of these events would increase over time (due to sea level rise) to completely change the nature of this frontage.	
	<i>Feed</i>	<i>Sand</i>	<i>Sand</i>	<i>Sand</i>
	<i>Rates</i>	<i>10 to 20m erosion</i>	<i>20 to 50m erosion</i>	<i>40 to 100m erosion</i>

⁸ Note that during the Policy Option Appraisal the frontage between Rye Harbour and Cliff End (4c18) was divided into two sections, however after a thorough technical appraisal, of the coastal processes and consultation with the stakeholders a decision to merge the two frontages.

G2.3.11 Winchelsea Beach to Cliff End

Proposed Policy Scenario1: Hold the Line (0 – 50 years)		No Active Intervention (50 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	
Winchelsea Beach to Cliff End (4c19)	<p>Concrete rubble/timber breastwork and timber groynes at Cliff End Concrete seawall fronted by an apron and groynes along the remainder (will need strengthening with time) Beach recycling (might need to be increased)</p>		<p>Failure of defences and termination of management practises</p>
	<p>Sediment recycling operations and the presence of a seawall / breastwork will fix the present plan-form position of the shoreline and prevent the shingle barrier beach from rolling back.</p> <p>The groynes would continue to trap the limited material supplied from the west, to maintain a beach similar to that at present.</p> <p>To sustain crest height beach recycling is conducted.</p>	<p>The timber breastwork will provide some protection but not halt erosion and therefore it will need to be located landwards of its current position to keep pace with sea level rise.</p> <p>Foreshore narrowing, is likely to occur as a result of sea level rise, and could be in the region of 10 to 20m by 2055. Material (fines) will continue to be supplied to and transported along this frontage.</p>	<p>Sediment feed into this frontage from the west will be minimal. Despite erosion from the cliffs updrift, the shingle beach is likely to have dropped in height and narrowed significantly.</p> <p>The barrier beach will migrate further landwards and re-alignment would be instigated to achieve a position more commensurate with shoreline energy.</p> <p>With no sea defences or management practises in place, the shingle barrier will start to segment, resulting in periodic inundation of the low-lying hinterland.</p> <p>The lack of contemporary sediment entering the system and sea level rise (4 to 6mm/per annum) will exacerbate the situation.</p>
	<i>Feed</i>	<i>Shingle and fines</i>	<i>Shingle and fines</i>
<i>Position</i>	<i>No change (in the back of the beach position)</i>	<i>No change (in the back of the beach position)</i>	<i>Inundation 20 to 50 erosion</i>

Proposed Policy Scenario 2: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Winchelsea Beach to Cliff End (4c19)	Concrete rubble/timber breastwork and timber groynes at Cliff End Concrete seawall fronted by an apron and groynes along the remainder Beach recycling		Concrete seawall along entire length Timber groynes Beach recycling
	<p>Sediment recycling operations and the presence of a seawall / breastwork will fix the present plan-form position of the shoreline and prevent the shingle barrier beach from rolling back.</p> <p>The groynes would continue to trap the limited material supplied from the west, to maintain a beach similar to that at present. To sustain crest height beach recycling is conducted.</p>	<p>The timber breastwork will provide some protection to the western section, but will not halt erosion. Consequently the timber breastwork may need to be located landwards of its current position or raised to keep pace with the retreated position.</p> <p>Foreshore narrowing is likely to occur as a result of sea level rise and could be in the region of 10 to 20m by 2055.</p> <p>A nominal amount of beach material (fines) will continue to be supplied to and transported along this frontage.</p>	<p>Sediment feed into this frontage from the west will be minimal. Despite erosion from the cliffs updrift, the shingle beach is likely to have dropped in height and narrowed significantly.</p> <ol style="list-style-type: none"> 1) Further necessitate the creation and maintenance i.e. increase beach feed volumes. 2) Timber breastwork will become redundant 3) Groynes will experience greater exposure and will need regular maintenance. 4) Hard defences (seawalls) may need to be lengthened and strengthened to prevent a landwards migration of the shoreline, as sea level rise produces higher waves and more volatile conditions.
<i>Feed</i>	<i>Shingle and fines</i>	<i>Fines and some shingle</i>	<i>Predominantly fines</i>
<i>Rates</i>	<i>No change (in the position of the Back of the beach)</i>	<i>No change (in the position of the Back of the beach)</i>	<i>No change (in the position of the Back of the beach)</i>

G2.3.12 Fairlight Cove

Proposed Policy Scenario: Managed Realignment (0 – 50 years)		No Active Intervention (50 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	
Fairlight Cove (4c20)	Rock bund at toe of the cliffs (Concrete rubble, timber breastwork and a few timber groynes at eastern extremity (Cliff End)		Effectiveness of bund reduces
	Cliff erosion will continue at similar rates to that experienced since the construction of the rock bund.	Cliff erosion will continue at a potentially greater rate than that experienced since the construction of the rock bund, due to the impact of sea level rise (c.4 to 6mm/per annum).	Cliff top erosion could be in the region of c.40-60m by 2105. Sea level rise could be as great as 4 to 6mm/per annum which would impact on the cliff toe
	Very small quantities of shingle, from updrift sources, may continue to accumulate in front of the bund.	Although the rock bund will reduce toe erosion, a landward movement in the cliff top position will still occur, which could be in the region of 10 to 20m by 2055. Debris will accumulate at the cliff toe, yielding small quantities of sand and silt to the foreshore.	It is likely that landslide events would be initiated causing low frequency, high magnitude events. This would yield further sand and silt to the foreshore.
	The sand beach that fronts the cliffs, on which the shingle rests, will not alter in any significant way.	The beach in front of the bund will narrow due to sea level rise and a lack of contemporary beach building material entering the system.	Insufficient fresh shingle is entering the system and insufficient beach building material is leaving the system.
<i>Feed</i>	<i>No significant change in sediment input / outputs are expected during this epoch.</i>	<i>Fines</i>	<i>Fines</i>
<i>Rates</i>	<i>c.5 to 10m erosion</i>	<i>c.10 to 20m erosion</i>	<i>c.40 to 60m erosion</i>

G2.3.13 Rockmead Road

Proposed Policy Scenario 2: No Active Intervention (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Rockmead Road (4c21)	No defences		
	<p>Landslips will continue to be the key failure mechanism for this section of the frontage, although the probability of one occurring during this epoch is very slim (as they are high magnitude, low frequency events and with one occurring in the recent past the probability of one occurring during this epoch is unlikely⁹).</p> <p>As the most recent landslip stabilises, retreat could be as great as 25m per annum for the first 2 years, thereafter a lower rate will reside (similar to the past historic rate).</p> <p>Material from the landslip and annual erosion will provide cover to the foreshore for an extended duration before being moved alongshore by active coastal processes.</p>	<p>With the progressive removal of the slip debris, marine erosion at the cliff toe will occur at a rate slightly greater than that experienced historically.</p> <p>During this epoch there is a small probability of a landslip occurring.</p> <p>Material transported alongshore, to Fairlight Cove will not be sufficient to build beaches.</p>	<p>The probability of a landslip occurring during this epoch becomes increasingly likely with time.</p> <p>Despite increased cliff erosion, very little additional 'beach building' material will be provided to the foreshore and to down drift frontages i.e. Fairlight Cove. This combined with the effects of sea level rise, will increase the vulnerability of the cliff toe to wave attack.</p>
	<i>Feed</i>	<i>Fines released</i>	<i>Fines released</i>
<i>Position</i>	<i>c.50 to 60m</i>	<i>c.20 to 30m erosion</i>	<i>c.30 to 70m erosion</i>

⁹ Historic evidence indicates that events have an approximate 1:100 year occurrence

G2.3.14 Fairlight Cove West

Proposed Policy Scenario: No Active Intervention (0 – 50 years)		Hold the Line (50 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	
Fairlight Cove (West) (4c22)	No defences	No defences	Rock bund
	Cliff erosion would continue at a rate similar to that experienced historically. By 2025 it is anticipated that the cliffs will have eroded some 10 to 20m. Material released from cliff erosion along this section will either be: 1) lost offshore, 2) retained on the local beach affording some protection to the toe or 3) transported alongshore, in an eastwards direction. The shoreline will not look too dissimilar to how it currently does.	Cliff erosion will continue at a slightly greater rate to that experienced historically, due to sea level rise. Limited sediment will enter the system due to the continued influence of updrift structures. Cliff erosion will supply a nominal amount of beach building material to the foreshore however with an increase in sea level rise the vulnerability of the cliff toe to wave attack, will increase.	The installation of a rock bund, at the toe of the cliffs, will reduce cliff toe erosion; but slope stabilisation could be in the region of 30 to 70m by 2105. The presence of Hastings harbour arm will continue to restrict feed to this frontage Sea level rise, will lead to the progressive removal of any cliff debris that rests at the cliff toe, which will increase cliff vulnerability. Any material transported alongshore, will be insufficient to build beaches.
	<i>Feed</i>	<i>Fines released</i>	<i>Fines released</i>
<i>Rates</i>	<i>10 to 20m erosion</i>	<i>20 to 30m erosion</i>	<i>30 to 70m erosion</i>

G2.3.15 Hastings East

Proposed Policy Scenario: Hold the Line (0 – 50 years)			Remove the Harbour Arms (50 – 100 years)
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Hastings East (remove Harbour arms) (4c24)	Maintain harbour arms	Minimal maintenance to the harbour arms	Harbour arms will fail
	<p>The shingle beach, which fronts the concrete seawall, will continue to be 'held' in place by a series of timber and concrete groynes. There will be no change in shoreline / back of beach position.</p> <p>The harbour arm, at the eastern extremity of the frontage will continue to 'trap' sediment, restricting alongshore transport to the east.</p>	<p>The seawall will continue to hold the shoreline in its present position. The frontage will start to protrude therefore more substantial structures would be required to sustain defence integrity.</p> <p>The shingle beach width will narrow as sediment supply, from updrift sources becomes increasingly restricted (updrift promontories and defence works). Groynes will struggle to trap the limited sediment (shingle). Cutback will be more apparent at the eastern end of this frontage, downdrift of the harbour arms.</p>	<p>The sea wall will continue to fix the plan position of the shoreline.</p> <p>There will be minimal beach material entering the system from the west, hence the need for recharge, along the main frontage. However with the removal of the harbour arms a significant throughput (a finite quantity) of shingle will occur, to feed downdrift frontages. The ability of this to continue in the long term is however unlikely.</p>
	<i>Feed</i>	<i>Shingle transported alongshore</i>	<i>Shingle and fines will be transported alongshore.</i>
<i>Position</i>	<i>No change to the back of beach position</i>	<i>No change to the back of beach position</i>	<i>No change to the back of beach position but the beach at the eastern end will retreat with the removal of the harbour arm</i>

G2.3.16 Pevensey and Hooe Levels

Proposed Policy Scenario 1: Hold the Line (0 – 50 years)		No Active Intervention (50 – 100 years)	
<i>Years 0 – 20 (2025)</i>		<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Pevensey and Hooe Levels (4c27)	Timber groynes Beach Recycling		Timber groynes fail early on Cessation of beach recycling
	The timber groynes and shingle recycling will continue to ‘hold’ the shingle beach in a similar plan position to its current location.	The position of the shingle beach may have ‘rolled back’ slightly landwards, under the impact of sea level rise. To combat this and associated flooding and overtopping, the timber and rock revetment will need to be strengthened.	Roll back of the shingle barrier would accelerate as soon as beach recycling ceases, this being partially due to the barrier being held seawards of its natural alignment and sea level rise. Cannibalisation of relict shingle ridges will occur. Initially the barrier will segment and then breakdown becoming inundated with marine water.
	Erosion of the beach crest during storm events will start to put specific areas at significant risk from flooding.	There will be little sediment input from updrift frontages due to the heavily managed frontage at Eastbourne and at Eastbourne East.	Very little sediment is likely to enter this system due to the Sovereign Harbour arms (Eastbourne East) and what leaves will be transported along and offshore.
	Feed is intercepted by updrift structures (Sovereign Harbour Arm, Eastbourne East) and the supply of shingle and sand to adjacent frontages (Bexhill West) is restricted by the presence of groynes.	With a lack of contemporary material entering the system and sea level rise, beach volumes will start to decrease, resulting in an increased denudation of the foreshore sediments and a greater propensity for foreshore lowering.	
<i>Feed</i>	<i>No throughput</i>	<i>Small amounts of shingle will leave the system</i>	<i>Shingle and fines will leave the system</i>
<i>Position</i>	<i>No change to the back of beach position Foreshore will narrow</i>	<i>No change to the back of beach position Foreshore narrowing</i>	<i>Tidal inundation of the hinterland (IFM limit)</i>

Proposed Policy Scenario 2: Hold the Line (0 – 50 years)			Managed Realignment (50 – 100 years)	
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>	
Pevensey and Hoe Levels (4c27)	Timber groynes (will need to be strengthened with time) Beach recycling (will need to increase in frequency and volume with time)		Timber groynes fail early on Cessation of beach recycling Secondary defence located inland to stop flood damage to valuable assets	
	The timber groynes and shingle recycling will continue to ‘hold’ the shingle beach in a similar plan position to where it is currently. Erosion of the beach crest during storm events will start to put specific areas at significant risk from flooding. Feed is intercepted by updrift structures (e.g. Sovereign Harbour Arm) affecting the supply of shingle and sand to adjacent frontages e.g. Bexhill.	The position of the shingle beach may have ‘rolled back’ slightly landwards, under the impact of sea level rise. To combat this and associated flooding and overtopping, the timber and rock revetment will need to be strengthened. There will be little sediment input from updrift frontages due to the heavily managed frontage at Eastbourne and Sovereign harbour. With a lack of contemporary material entering the system and sea level rise, beach volumes will start to decrease, resulting in an increased denudation of the foreshore sediments and a greater propensity for foreshore lowering.	The shingle ridge will start to migrate landwards as the timber groynes, which fix the beach, fail and beach recycling ceases. Cannibalisation of relict shingle ridges will occur and result in segmentation and barrier breakdown, up until the limit of the secondary defence. Very little sediment will enter the system due to the updrift structures e.g. Sovereign Harbour. Any shingle reworked from this frontage would be transported in an eastwards direction.	
	<i>Feed</i>	<i>Limited throughput of shingle and fines</i>	<i>Shingle and fines will be transported alongshore</i>	<i>Shingle and fines will be transported alongshore</i>
	<i>Position</i>	<i>No change to the back of beach position</i> <i>Foreshore will narrow</i>	<i>No change to the back of beach position</i> <i>Foreshore narrowing</i>	<i>Roll back to the secondary defence</i>

Proposed Policy Scenario 3: Hold the Line (0 – 100 years)			
	<i>Years 0 – 20 (2025)</i>	<i>Years 20 – 50 (2055)</i>	<i>Years 50 – 100 (2105)</i>
Pevensey and Hooe Levels (4c27)	<p>Timber groynes (will need to be strengthened with time) Beach recycling (will need to increase in frequency and volume with time)</p>		
	<p>The timber groynes and shingle recycling will continue to 'hold' the shingle beach in a similar plan position to where it is currently.</p> <p>Erosion of the beach crest during storm events will start to put specific areas at significant risk from flooding.</p> <p>Feed is intercepted by updrift structures (e.g. Sovereign Harbour Arm) affecting the supply of shingle and sand to adjacent frontages e.g. Bexhill.</p>	<p>The position of the shingle beach may have 'rolled back' slightly landwards, under the impact of sea level rise. To combat this and associated flooding and overtopping, the timber and rock revetment will need to be strengthened.</p> <p>There will be little sediment input from updrift frontages due to the heavily managed frontage at Eastbourne and at Eastbourne East.</p> <p>With a lack of contemporary material entering the system along with sea level rise, beach volume will decrease, resulting in denudation of foreshore sediments and a greater propensity for foreshore lowering.</p>	<p>Erosion along this frontage is anticipated to be greater than current rates, as the barrier struggles to keep pace with sea level rise. Defences may therefore need to be upgraded to limit flood propagation.</p> <p>Any shingle reworked from the barrier beach would be transported in an eastwards direction and during this epoch complete failure of the beach crest is likely</p> <p>Very little sediment will continue to enter this system due to the presence of updrift structures e.g. Sovereign Harbour Arm.</p>
<i>Feed</i>	<i>Limited throughput of shingle and fines</i>	<i>Shingle and fines will be transported alongshore</i>	<i>Remaining material (fines) will be transported alongshore</i>
<i>Position</i>	<i>No change to the back of beach position Foreshore will narrow</i>	<i>No change to the back of beach position Foreshore will narrow</i>	<i>No change to the back of beach position Foreshore will be extremely narrow</i>

G3 Objective Appraisal

For each scenario/policy the extent to which each of the defined objectives¹⁰ for individual locations is achieved. In most instances, consideration of whether the objective is met is based upon the predicted position (e.g. the extent of retreat) and form (e.g. existence of a beach) of the shoreline. This process does not differentiate between objectives of differing importance or the key policy drivers. The differentiation between different objectives is made in the Policy Unit Statements¹¹, where the recommendations for preferred policy are presented.

For presentation purposes this assessment is recorded as simple yes/no/partial (Y / N / P), with brief explanatory text.

¹⁰ See Appendix E.

¹¹ See SMP Chapter 5.

