



**Suffolk SMP2 Sub-cell 3c**  
Policy Development Zone 1 – Lowestoft Ness to Benacre Ness

Suffolk Coastal District Council/Waveney District  
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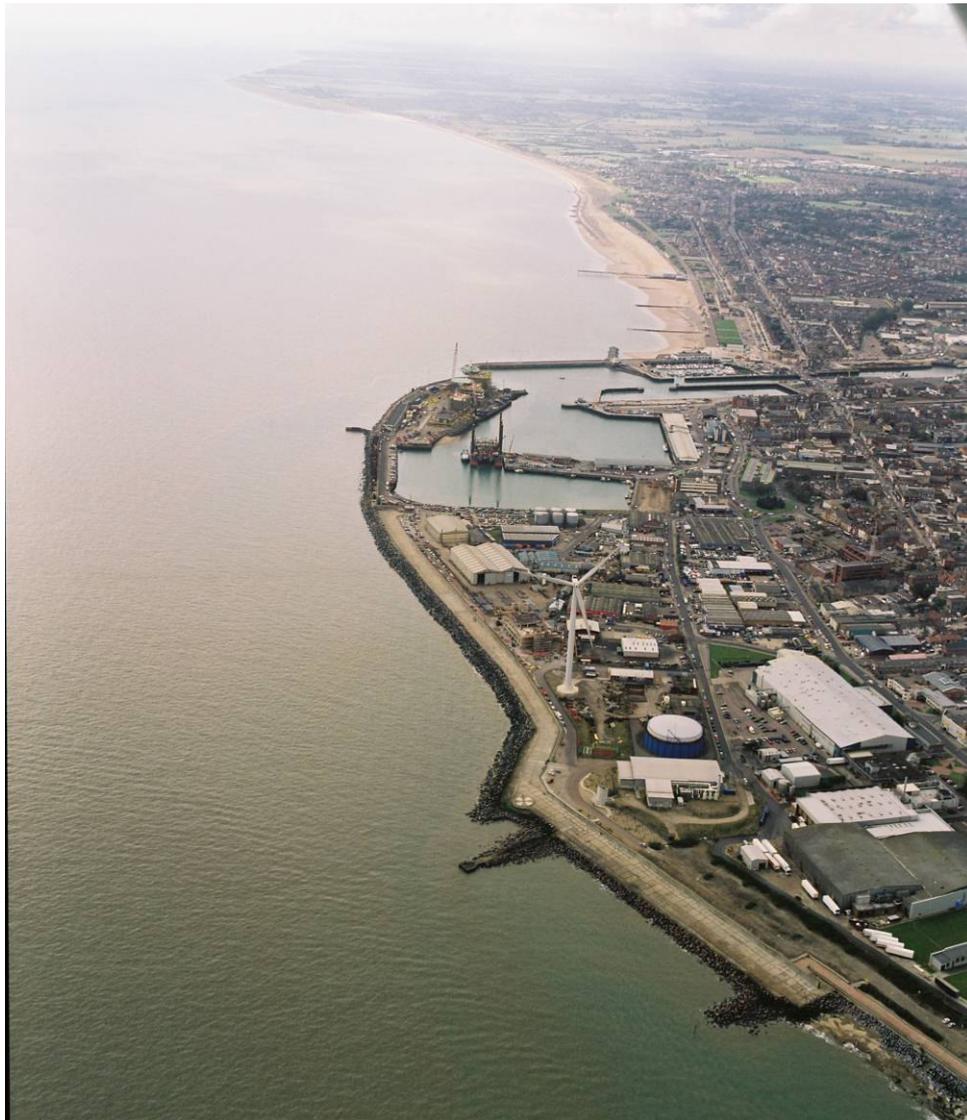
## CONTENTS

		Page
4.1	POLICY DEVELOPMENT ZONE 1	1
4.1.1	<b>OVERVIEW</b>	3
4.1.2	<b>PRESENT MANAGEMENT</b>	11
4.1.3	<b>DISCUSSION AND DETAILED POLICY DEVELOPMENT</b>	16
4.1.4	<b>LOW 01 - LOWESTOFT NESS AND OUTER HARBOUR</b>	23
4.1.5	<b>LOW 02 - INNER HARBOUR</b>	31
4.1.6	<b>LOW 03 - SOUTH BEACH</b>	37
4.1.7	<b>LOW 04 - PAKEFIELD</b>	43
4.1.8	<b>KES 05 - KESSINGLAND</b>	51

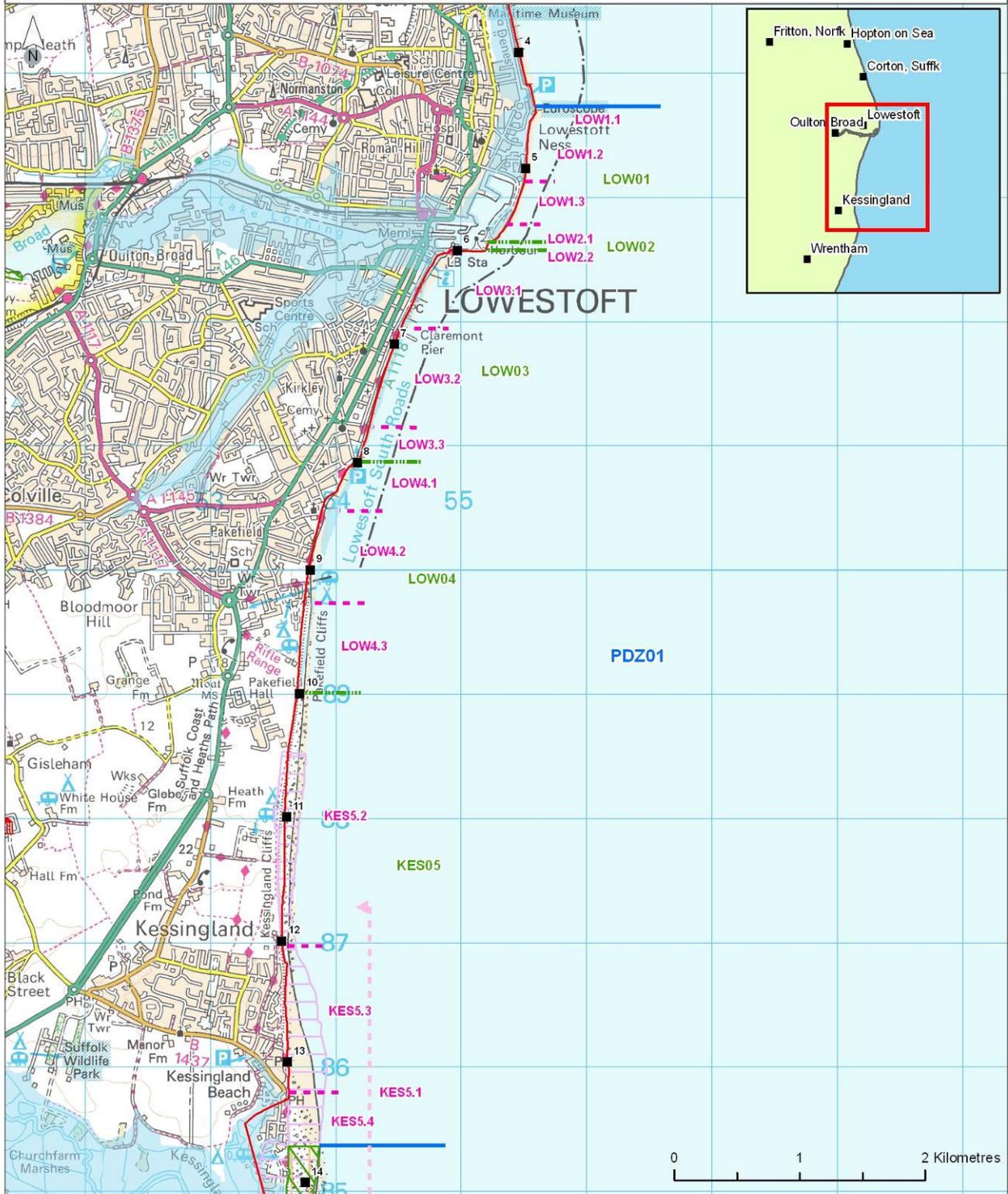


## 4.1 POLICY DEVELOPMENT ZONE 1

Lowestoft Ness to Benacre Ness  
Chainage: 4 to 13.5.



**Shoreline Management Plan Sub Cell 3C - Lowestoft Ness To Felixstowe Landguard Point**  
**Baseline Location Map**  
**Policy Development Zone 1 - Lowestoft Ness to Benacre Ness**



Key:			
	Anticipated 100 Year Shoreline with Present Management		NNR
	Policy Development Zones		SSSI
	Management Areas		Existing Indicative EA Flood Risk Zone
	Policy Units		SPA
			RAMSAR
			SAC
			Scheduled Monuments

1984199:Technical\_Data\GIS\Projects\Figures\Policy Development Zones\With Present Management

#### 4.1.1 OVERVIEW

##### **PRINCIPAL FEATURES** (further details are provided in Appendix D)

###### **Built Environment:**

The zone includes the important regional centre of Lowestoft and the villages of Pakefield and Kessingland. Lowestoft has significant residential areas, principally to the south of the harbour and important commercial areas around the harbour and adjacent to Lake Lothing. Kessingland with the Holiday Parks provides important accommodation.

There are major transport links both along the length of the frontage and at specific locations such as the bridge over the harbour entrance. There is a policy for regeneration to the south of the harbour and to the waterfront within Lake Lothing.

###### **Heritage and Amenity:**

Pakefield Cliffs contain some of the earliest evidence for hominid (early human) activity in Europe. Medieval churches at Pakefield and Kirkley are the visible survivors of small Anglo-Saxon and medieval settlements, now within the urban area of Lowestoft. The Euroscope and Maritime Museum, north of the harbour, are important tourism features and South Beach is a highly valued sea front amenity associated with the major tourism venue of the promenade area behind. Kessingland provides an important tourism function with the Holiday Parks providing important accommodation.

###### **Nature Conservation:**

Kessingland and the cliffs to the north of Kessingland are a nationally designated geological site - SSSI (Pakefield to Easton Bavents). Associated with the area are the Ramsar, SAC and SPA designations of Oulton Broad, separated from Lake Lothing by the Mutford Lock. To the south of Kessingland is the Benacre to Easton Bavents SPA and SAC.

##### **STAKEHOLDER OBJECTIVES** (the development of objectives is set out in Appendix B based on objectives listed in Appendix E)

- To maintain Lowestoft as a viable commercial centre and tourist destination in a sustainable manner;
- To reduce flood and erosion risk to residential and commercial properties in Lowestoft;
- To protect the commercial and recreational use of Lowestoft harbour;
- To maintain navigation to Lowestoft harbour and associated areas;
- To maintain and enhance the overall amenity value of the frontage in general and in particular Lowestoft South Beach, its beach and open area behind;
- To maintain regeneration opportunities in and around Lowestoft;
- To maintain transport links in and around Lowestoft;
- To maintain critical regional transport links;
- To maintain a transport link from Lowestoft to Kessingland and throughout the area;
- To maintain the more informal character of Pakefield, retaining important cultural heritage;
- To maintain the geological value of Pakefield Cliffs;
- To maintain Kessingland as a viable commercial centre and tourist destination in a sustainable manner;
- To support adaptation of rural industries and communities;
- To maintain biological and geological features in a favourable condition, subject to natural change and in the context of a dynamic coastal environment;
- To maintain a range of recreational opportunities along the foreshore;
- To maintain access to and along the coastal path.

## DESCRIPTION

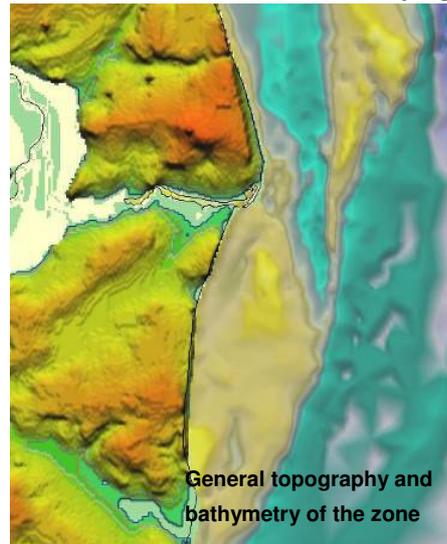
This policy development zone extends from just north of Lowestoft Ness through to the southern end of the concrete wall to the south of Kessingland. It includes Lowestoft Harbour and Lake Lothing.

The frontage comprises:

- the heavily defended headland of the Ness and Hamilton Dock, with the low lying area of the inner harbour area;
- the shallow bay of South Beach running through to the less defined headland at Pakefield Road;
- the more natural coast and cliffs of Pakefield and north of Kessingland.

The coast reduces in level down to the southern area of Kessingland village and the Kessingland levels beyond.

The whole length of the coast is protected by the extensive nearshore sand bank system tailing into the coast at Kessingland and Benacre Ness. This bank system comprises the major extent of banks to the north and the Newcome Bank in front of South Beach. These two areas are separated by the Lowestoft Channel to the south of Lowestoft North Road. This channel varies in size and position.



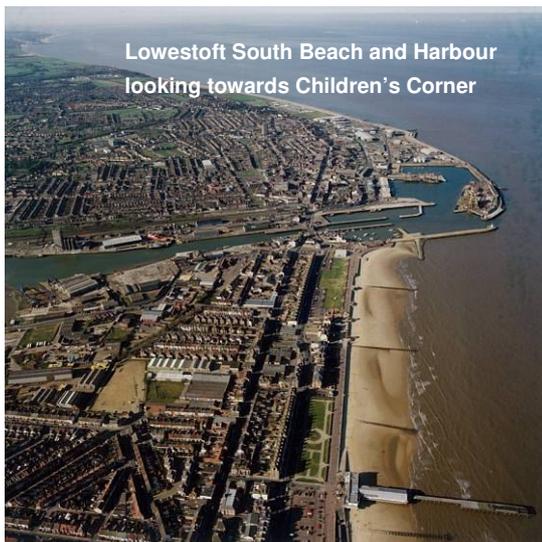
At the northern limit of the zone there is little intertidal foreshore, low water lying hard against the coast at Lowestoft Ness. The beach does widen to the north and has been maintained by groynes, which are now generally derelict. To the south of the Ness there is a slight embayment formed to the knuckle of the Hamilton Seawall, running through to the North Pier of the harbour. Behind the Ness is the low lying reclaimed area of the old shingle ness, backed by rising land some 250m behind the defences.



Within the harbour, both to the north and the south, there are extensive areas of quays and commercial development extending all the way to the artificial cut through to Oulton Broad. To either side, this development covers a 250m width of low lying land, narrowing against the ridge of high ground separating Lake Lothing from Oulton Broad. The main A1117 westerly bypass road crosses the inland end of Lake Lothing along this ridge. At the lock between Lake Lothing and Oulton Broad, the main road passes through the potential coastal flood plain. On the south side of the harbour there is a significant valley of low lying land running to the back of Kirkley. This valley drains just inland of the entrance to the Inner Harbour at Kirkley Ham.

1st East Urban Regeneration Company is facilitating the regeneration and redevelopment of the Lake Lothing and Outer Harbour, and significant changes are planned in these areas. An Area Action Plan is currently in preparation. This will include policies for the redevelopment of former employment land for a range of other uses in the inner harbour area.

The main A12 road crosses the harbour over the Bascule Bridge and this bridge in effect defines the division between the Inner and Outer harbours. The limit of the Outer Harbour is formed by the South Pier, extending out from the southern coast at Children's Corner.



Lowestoft South Beach and Harbour  
looking towards Children's Corner

Children's Corner, at the northern end of South Beach, had traditionally been an area of sand beach up to the 1970s, although the condition of this beach has varied. A rock groyne was introduced to re-establish the beach in 1987. There has been periodic reduction in beach material since the late 1990s.

Over the main area of South Beach there is currently a good width of sandy foreshore. There has been a programme of recycling beach material from the south to the northern end of South Beach to maintain beach levels against the sea wall. There has been a significant variation in level and concern over increasing shingle approaching from the south. Behind the beach is a seawall protecting the promenade and the wide amenity and car park areas. The A12 runs to the rear of the promenade with largely residential development behind. The Claremont Pier runs out from the promenade in the centre of South Beach.

To the southern area of South Beach the land rises to the slight headland at Pakefield Road. The beach at present runs past this headland, although in the past had eroded back to the seawall. Property lies closer to the cliff crest at the headland, with the A12 set back to the rear of the property.

South of the headland the defence line steps back in two stages: initially as the continuation of the promenade wall, protecting the soft coastal slope to the rear, and then back further to the old low wall in front of Pakefield Village. This latter defence lies across the entrance to a slight valley running



Pakefield Road  
Headland

through the village<sup>1</sup>. There is at present a wide vegetated shingle sand beach developed as the backshore defences step back.

South of Pakefield, the coast again rises to the Pakefield and Kessingland Cliffs. At the crest of the cliffs are residential properties, Pakefield Hall and the Pakefield Holiday Centre, with more open land separating this area from Kessingland. Initially at Kessingland there are isolated properties to the land at the crest, including the Heathland Beach Caravan Park, with more dense development and the Sea View Holiday Estate within the village itself.



The land reduces in level to the southern end of the zone, with the end of Church Road running to the shore behind a section of concrete wall. Beach Road continues to the back of the dune, earth bank ridge. To the crest of the ridge, between Beach Road at the back and the continuation of the front concrete seawall, are various properties. The ridge continues south enclosing the northern part of Kessingland levels with the Kessingland Beach Holiday village behind. The massive shingle feature of Benacre Ness fronts the whole of the Kessingland section.

The concrete seawall is to the back of the shingle ness, at present over 200m from the active beach face. This wide foreshore has developed as the Ness has moved north.

<sup>1</sup> There was concern (1907 Commission Report on Coastal Erosion) that erosion of the frontage would open a back flood route to the Kirkley Valley. Levels at the head of the valley in fact preclude this.

## PHYSICAL PROCESSES (further details are provided in Appendix C)

### TIDE AND WATER LEVELS (mODN)

<i>Location</i>	LAT	MLWS	MLWN	MHWN	MHWS	HAT	Neap range	Spring range	Correction CD/ODN
<b>Lowestoft</b>	-1.60	-1.00	-0.50	0.60	0.90	1.30	1.10	1.9	-1.5

### Extremes(mODN)

<i>Location:</i>	1:1	1:10	1:25	1:50	1:100	1:250	1:500	1:1000
<b>Corton</b>	2.02	2.56	2.78	2.94	3.11	3.32	3.49	3.65
<b>Lowestoft</b>	2.04	2.58	2.8	2.96	3.13	3.34	3.51	3.67
<b>Kessingland</b>	2.04	2.58	2.79	2.96	3.12	3.33	3.49	3.65

### WAVE CLIMATE

Dominant offshore wave directions are from the north northeast and south southwest. Potentially waves from a more northerly direction may approach the northern part of the zone along the inshore channel. Though less frequent, there can be high southeast waves. Due to the local nearshore banks, waves are refracted inshore with a net energy from the east. Variation in bank height and extent, both spatially and in time, gives local increase and variation in wave energy at the shoreline.

### TIDAL FLOW

There are strong southerly tidal flows (1.5m/sec) on the flood setting against the shoreline of Lowestoft Ness and tending to be deflected offshore. Flow on the ebb is similarly strong but tending to clip the Ness. Locally at Ness Point, flows are higher than the general flow regime. Flow along the shoreline at South Beach is understood to vary with the nearshore bank configuration. Filling and emptying of the harbour and Lake Lothing generates significant local flow.

## PROCESSES

### Control Features:

The main physical control features of the zone are:

- Lowestoft Ness and Harbour – acting to hold off tidal flows and influencing the nearshore bank system;
- Benacre Ness – influencing sediment drift to the south and directly protecting Kessingland; and
- the nearshore banks – potentially acting as a sediment source but protecting and influencing the whole length of the shore.

More directly, the South Pier to the harbour and the harbour entrance influence protection to the north of South Beach and the headland at Pakefield Road restrains coastal change, rather than directly protecting the beaches to north and south. The southern length of the Pakefield Cliffs also acts in a similar but less evident manner.

### Existing Defences:

To the north of the zone, while the structural integrity of the defences may fail typically within the middle epoch of the SMP (20 to 50 years) their influence on the coast is assumed to continue during the SMP period. These defences continue around the northern part of the outer harbour area. The condition of defences within the inner harbour areas has not been fully assessed with little information within NFCDD.

Along South Beach, areas of the defence could be at risk over the next 20 years, with sections of the Flint Wall potentially failing earlier. The defences are vulnerable to the variation in beach levels, particularly at Children's Corner and below the Pakefield Road headland. At Pakefield the rear wall is buried beneath the beach, its condition is critically dependent on the beach being maintained.

The defence at Kessingland is behind the mass of Benacre Ness and is not seen as critically affected over the SMP period, apart from potentially at the southern end towards the end of this period.

**Processes:**

Coastal processes over the frontage are complex and not fully understood. There are trends, however, which may be deduced and by implication it is possible to assess where human actions might critically increase pressure for erosion and change.

Within the general constraint imposed by Lowestoft Ness and Benacre Ness, the general orientation of the coastline is considered quite stable. This is critically controlled by the nearshore banks, reducing and modifying the direction and focus of wave energy, as well as having an influence on net tidal flow. The development of the nearshore banks in response to sea level rise is very uncertain, but assuming they continue to act as an effective coastal barrier system (as suggested by Leggett and Pethic) it might be expected that they will respond accordingly, rebuilding in line with the rise in water levels.

The principal risk, however, is that the banks may become submerged and potentially flatten, imposing far less control on the coastal processes. In this case there would be greater drift to the south exposing defences and creating a significantly different physical regime. This is not considered as a specific scenario. However, the possibility is highlighted reinforcing the need for continued monitoring of their behaviour.

Both through work undertaken by the Blinks project and records of the frontage, it has been identified that, under different configuration in the nearshore banks, sections of the coast come under differing pressure. It seems probable that overall the shore is a relatively closed system. Within this system it also seems probable that there is differing behaviour of the coarser shingle element and the finer sands.

Typically it would appear, with respect to shingle, that this is moved between areas of the frontage. Only in large areas of retained shingle will the beach tend to form ridges in response to increased wave energy, such as at Benacre Ness and Pakefield. In other areas, constrained by defences, the shingle beach tends to flatten and spread along the coast. The overall trend in recent years would appear to be a northerly movement of shingle north of Pakefield and a continuing feed to the northern flank of Benacre Ness. The source of shingle is uncertain but the indication is that at present there is a shingle drift divide north of Benacre Ness. This division is quite probably transient and associated with



the nearshore banks. The beach in the area beneath the headland at Pakefield Road appears to have developed, in fact, to the north of this headland, suggesting more a ness type formation associated with the headland rather than direct control by the headland. The headland, which was prominent in the past, would have tended to influence the movement of material, forming this bank to the north. This was then self-perpetuating, but with the northerly drift being too weak to drive material further north along South Beach. Considering the shape of the shore at present, the influence of this ness feature terminates at the start of the Flint Wall. Such behaviour is supported by the monitoring, showing quite slow upper beach accretion to

the nearshore banks. The beach in the area beneath the headland at Pakefield Road appears to have developed, in fact, to the north of this headland, suggesting more a ness type formation associated with the headland rather than direct control by the headland. The headland, which was prominent in the past, would have tended to influence the movement of material, forming this bank to the north.



the south in front of Pakefield, significant growth to the south of South Beach and little accretion and potential erosion to the north. As the banks change form this process would change. Historical evidence has shown that the Pakefield Road headland, and indeed the beach in front of Pakefield, can be subject to erosion. It is suggested that this occurs when the nearshore banks change to allow a southerly drift of shingle. Southerly drift of shingle moves material past the headland and further south in front of the Pakefield Cliffs, potentially increasing feed to Benacre Ness.

The Pakefield Road Headland is, therefore, considered to be an important control feature in maintaining the defences to the north, particularly when South Beach is going through a more erosional cycle. During this phase the headland will itself come under pressure for erosion. At the northern end of South Beach, the offshore banks again play an important role in behaviour of the beach and it is at the northern area where there may be most significant change, with local change in the bank formation. In this area the beach is predominantly sand.

It is considered that finer sand sediment acts differently from the shingle; being influenced by the underlying pattern of shingle behaviour but also, to a degree, independently from this behaviour. Where there is a good platform for shingle, this tends to allow sand to accumulate. The finer sediment is more mobile and therefore influenced by lower wave energy events and is more susceptible to movement by tidal flow. Finer sand material is drawn into the area from the nearshore banks and may also feed into the nearshore bank system.

This suggested pattern of fine sediment movement is only indicative but, in terms of management, would:

- Indicate a quasi-cyclic behaviour within the longer term long cyclic process identified to date by the BLINKS project;
- Indicate that the change in processes cannot accurately be predicted – continued monitoring will improve the understanding. Monitoring will help to anticipate change. Modelling of existing conditions may not represent future conditions;
- Suggest that overall the coastal form will remain substantially sustainable, although specific sections of the defences will come under pressure;
- Suggest that management needs to take account of a high degree of variability when considering defence. Pressure on exposed frontages will tend to be increased by sea level rise but that the system in moving these large volumes of material will tend to still provide protection in the future.

With respect to other areas of the frontage at Benacre Ness, existing evidence suggests that the Ness will continue to move north. This is by no means certain in that the broader pattern of behaviour indicates a strong link to the position of the nearshore banks. As such the movement of the Ness may become constrained by the ability of the bank system to move north. However, on present evidence of northward movement there would be increasing exposure of the area to the south of the Ness, potentially exposing the southern end of the hard defence at Kessingland towards the end of the SMP period towards the end of epoch 3. Further photographic evidence has been provided during the consultation process, showing how the cliffs protected by the Ness are able to form a stable slope. Further south the photographs clearly show that erosion of the talus at the toe of the slope is eroded providing sediment to the foreshore and being the primary constraint in not allowing slope stability.

At Lowestoft Ness there will be continued pressure on the frontage, particularly at Ness Point. Maintaining the Point will tend to support existing processes to the south. However, any attempt to divert flows substantially away from the Ness to protect this point on the coast could have significant consequences in terms of the manner in which the banks further south may evolve. This could disrupt

the existing cyclic behaviour of the banks and the protection they provide to the shore.

Within the harbour, the condition and standard of defences has not been fully identified. Abandoning defences overall could potentially double the tidal prism and could, therefore, have an impact on coastal form. With predicted sea level rise over the next 100 years, the tidal prism might increase by half as much as at present. This would increase pressure at the harbour mouth and may have some impact of coastal processes, particularly with respect to the Lowestoft Channel and the behaviour of the banks system to the south.

*Unconstrained Scenario:*

The unconstrained scenario assumes that all defences are removed. Although unrealistic in terms of the residual impact of existing defences, the scenario does highlight the pressure on the coast.

With respect to the main Lowestoft Frontage the consequences of no defence would be significant. With no substantial feed from the north, Lowestoft Ness would erode back to the higher ground and the harbour would no longer exist. The historical development of the Ness was linked closely to the behaviour of, and sediment supply from, the coast to the north. The situation has now changed and it is difficult to predict the natural shape of the coast at this point. Loss of Lowestoft Ness, however, would impose pressure on the coast to the south and there would be extensive erosion. The Pakefield Road headland would still influence the behaviour of the coast and erosion of this point would eventually control the erosion to the north within the South Beach area. With the throughput of sediment from the eroding coast it is probable that some form of ness would tend to develop, protecting Pakefield initially. This whole section of coast would, however, still continue to retreat. Benacre Ness would be influenced but would tend still to function as it is, providing protection to Kessingland.

**POTENTIAL BASELINE EROSION RATES**

Base rates have been assessed from monitoring and historical data. The range of potential erosion is assessed in terms of variation from the base rate and sensitivity in potential sea level rise. Further detail on erosion rates is provided in Appendix C.

*(Sea Level Rise assumed rates: 0.06m to year 2025; 0.34m to year 2055; 1m to year 2105)*

Location	NAI Base Rate (m/yr)	Notes	100yr. Erosion range (m)
North of Harbour	0.0	Existing defences are likely to determine erosion over the 100 yrs.	Locally between 50 and 70
South Beach	0.3	Locally held by harbour, changing from an area of erosion to stable when harbour works were undertaken.	65 to 80
Pakefield Rd.	0.7	Erosion here influences erosion to north.	50 to 165
Pakefield Cliffs	0.1	An area generally protected by beach.	10 to 40
Kessingland Cliffs	0.3	Influenced by Benacre Ness.	5 to 45
Kessingland	1	Protected by Benacre Ness and progression of Ness.	0

Note: The movement of Benacre Ness to the north gives rise to a varying pattern of erosion and accretion. To the south of the Ness, as it moves north, there is a pattern of increased erosion. To the north of the Ness, there tends to be a period of increased erosion immediately north of the feature. As the Ness moves north, the area to the north gains protection and the shoreline in effect accretes. The projected extent of the Ness over the hundred years is still some distance short of Pakefield, based on current rates of movement. If the pattern of erosion to the north of the ness is maintained then this could influence the area of Pakefield towards the end of the SMP period (2105).

#### 4.1.2 PRESENT MANAGEMENT

Present Management is taken as that policy defined by SMP1, modified by subsequent strategies or studies. It should be noted that both in the case of SMP1 and that of many of the strategies undertaken before 2005, the period over which the assessment was carried out tended to be 50 years.

SMP1			REVIEWED POLICY		
MU	LOCATION	POLICY	REF	LOCATION	POLICY
BEN 1	Lowestoft Ness	HTL	S5	Lowestoft Ness	HTL
BEN 2	Lowestoft Harbour to Pakefield Cliffs	HTL	S5 S5	Lowestoft South Beach Pakefield Beach	HTL NAI
BEN 3	Pakefield Cliffs to Kessingland	Retreat or HLT	S5	Kessingland Cliffs	NAI
BEN 4	Kessingland to Benacre Pump Station	HTL	S5 S5	Kessingland Hundred River and Benacre Denes (within PDZ2)	NAI / HTL Managed realignment

**References:**

S5

*Lowestoft to Thorpeness Coastal Study*

The policy determined from the Catchment Flood Management Plan (CFMP 2008) for the Lowestoft Area is set out below.

As identified by the CFMP, Policy 5 (P5) is to take further action to reduce flood risk now and in the future to a particular area. The Environment Agency is currently undertaking a flood risk study to investigate options for reducing flood risk in Lowestoft. Detailed analysis of the actual current and future risk based on hydraulic modelling would be undertaken so viability of future options, such as flood defence walls and embankments or a tidal barrier, can be assessed. We would continue with our programme of flood warning improvements and continue to work with 1st East and Waveney DC to ensure that new development is appropriate to the flood risk.

**Baseline scenarios for the zone**

**No Active Intervention (Scenario 1):**

Under this scenario there would be no further work to maintain or replace defences. At the end of their residual life, structures would fail. There would be no raising of defences to improve standards of protection.

With the extensive defences in place at and south of Lowestoft Ness, these structures would continue to act as a control to the coast. However, with their failure and as sea level rises, there would be increased flooding to the hinterland and effective protection to the outer harbour would be lost. Navigation to the harbour would be increasingly difficult and the harbour would not continue to function. New development to the land behind the outer harbour would be constrained by flood risk and existing development would suffer regular damage.

Within the inner harbour there would be increased dilapidation as operation of the harbour decreased. Flood defence to the surrounding land would be to a substantially reduced level and opportunity for waterside development would be reduced. There would be increased risk of flooding within the Kirkley valley. Access across the Bascule Bridge would be lost as the outer harbour became more exposed

to wave action. Furthermore, the western town centre bypass at Mutford Lock would be subject to possible increased risk of flooding. Potentially tidal influence would affect Oulton Broad, as the cut between was no longer maintained.

While relatively local, the impact of general failure to the South Pier would reduce the ability of South Beach to retain sediment. Failure at Children's Corner would lead to a secondary breach to the harbour. Within probably the second epoch, although locally over the next 20 years, the defences to South beach would fail. This would be accompanied by a rapid set back in the coast with substantial loss of the promenade. It would probably not be until the final epoch (50 to 100 years) that property behind the lower promenade would be lost.

To the southern end of South Beach, defence to the Pakefield Road Headland would fail, subject to the condition of the beach. The failure and retreat of this headland, although continuing to provide some control of the beach to the north, would result in loss to the beach area to the north. This would eventually hasten the loss of the main promenade. There would also be the loss of beach generally due to the loss of the harbour structures to the north.

The beach in front of the Pakefield Road Headland is believed to vary in width as a result of changes in the bank system. Assuming failure of the headland occurred when beach levels were at a low point in the cycle, the defence to the south of the headland would also fail over much the same period. There would be erosion of the land behind and the instability of coastal slope, to the rear, would be reactivated with potential loss to property and more generally to the community at the crest.

At Pakefield, the beach may be initially retained such that the defences only come under pressure in 50 years time. These defences would then rapidly fail with a retreating shoreline and erosion would commence. This would be largely controlled by the then eroding headland to the north and the retreat of the cliffs to the south. The increased supply of sediment resulting from erosion elsewhere would mean that, following initial failure of the defence and slump of the bank behind, erosion might be quite slow, but cutting back as far as the church over the next 100 years.

The cliffs to the south would only come under significantly increased pressure from erosion in the final epoch of the SMP (2055 – 2105). Further south this would start to be compensated for by the movement of Benacre Ness from the south. This assumes continued movement of Benacre Ness to the north. There would still be loss of property immediately south of Pakefield and this erosion is likely to affect the cliff as far south as the Pakefield Holiday Centre. Erosion may only be of the order of 5m to 45m.

Benacre Ness would continue to protect Kessingland and would develop naturally. As it moves north, the old shoreline behind would come under pressure to erode at the southern end. Over the first epoch there would be little immediate impact. Over the period from 2025 to 2055 erosion may well cut into the dunes in front of the Holiday Park. In the final period through to 2105 it would be anticipated that erosion would be impacting on the end of the concrete wall, with the possibility that the earth bank and dunes to the south would have already been lost. Under a general No Active Intervention scenario, there would be substantial loss of property and flooding to property behind the ridge (this is discussed further in PDZ2).

***With Present Management (Scenario 2):***

The With Present Management scenario assumes that policies of either the SMP1 or subsequent strategies apply. This does not necessarily imply a Hold the Line approach throughout the area.

The present policy is maintaining the existing defences to the area around Lowestoft Ness. This also extends to the north as defined in SMP 3b. It is assumed that defences would be increased to take account of the increased pressure and that a similar standard of defence as at present is maintained. The current standard of defence is understood to be of the order of 1:200 years, although there is no information with respect to the level within Hamilton Dock. Management responsibilities lie in part with ABP in management of the port. The future management of the area does, to a degree, depend upon the continued viability of the harbour. Maintaining the defence would maintain the influence on coastal processes and it is assumed that this would have similar impact as at present. With this policy applied to the whole of the dock area, the port operation would be sustained and the commercial use of the area, together with the opportunity for development, would also be sustained.

Within the inner harbour and Lake Lothing, there is limited existing information on defences although this is being examined at present. The indicative level of the quay is typically some 2.7m to 3.0m AOD (with a standard of flood defence of 1:100 years). SMP1 did not cover this area and there has until now been no formal definition of policy. The strategic flood risk assessment indicates that defences provide a protection to a 1:200 year standard. Under the scenario, and given the high potential value of the waterfront area, it is assumed that defences would be raised in line with sea level rise and flood risk managed in a manner appropriate to the use of the area. This would need to be assessed in detail as part of the planned development of the area. There would be loss of some intertidal area and there is limited scope for recreation of such habitat within the harbour. The defences would provide protection to the large commercial interest and to residential property. With sea level rise, there is the probability that drainage of areas such as the Kirkley valley will become more problematic, with greater periods of tidal locking or the need for pumping. The open areas within this valley could become more significant in the management of inland flooding.

The existing policy for South Beach is to Hold the Line. It has been identified in the Lowestoft to Thorpeness study that this could result in loss of beach area and that in the final epoch of the SMP this is likely to be significant. The strategy does highlight the value of retaining and strengthening defence to the headland at Pakefield Road, the intention being to maintain beach levels to South Beach.

Under this scenario the policy at Pakefield is for NAI. Maintaining the northern headland would tend to reduce the initial rates of erosion. In the final epoch of the SMP it is likely that the erosion pattern will be as NAI, with the potential loss of the church (shortly beyond the SMP period, it is almost certain that the church will be lost). This rate of erosion and the likelihood of loss will increase with the erosion to the cliffs to the south. The policy for these cliffs is NAI with the possibility of loss of property to the cliff crest.

The policy for Kessingland Cliffs and for the main village section of Kessingland is defined as NAI, this being the case because of the anticipated movement of Benacre Ness providing protection. The intent of this present management is that the unprotected cliffs would be allowed to erode but that the defended section of Kessingland would remain protected. In terms of policy, it could be argued that the policy for Kessingland itself is to Hold the Line, even though there would be no anticipated action required to do so. This does not imply any action to manage the Ness, but the policy would prevent loss to the village. This distinction becomes more important with respect to the southern end of the village as – and if – the influence of the Ness moves beyond the limit of the sea wall. Here there are a significant number of properties at potential risk in the last epoch of the SMP. The implication of the policy is that those properties protected by the sea wall would continue to be protected.

### Economic Assessment

The following table provides a brief summary of damages determined by the SMP2 MDSF analysis for the whole PDZ. Further details are provided in Appendix H. Where further, more detailed information is provided by studies, this is highlighted. The table aims to provide an initial high level assessment of potential damages occurring under the two baseline scenarios.

#### MDSF ASSESSMENT OF EROSION DAMAGES

<b>NAI</b>		<i>Assets at risk</i>	<b>Present Value Damages (£x1000)</b>
<i>Location</i>			
Lowestoft Ness		No erosion damages.	-
Lowestoft South Beach		218 properties.	5,792
Pakefield Rd to Kessingland		34 properties.	733
<b>WPM</b>		<i>Assets at risk</i>	<b>Present Value Damages (£x1000)</b>
<i>Location</i>			
Lowestoft Ness		No erosion damages.	-
Lowestoft South Beach		No erosion damages.	-
Pakefield Rd to Kessingland		22 properties.	374

#### MDSF ASSESSMENT OF POTENTIAL FLOOD RISK

<i>Location</i>		<i>Assets at risk</i>	<b>Present Value Damages (£x1000)</b>
Lowestoft Ness and outer harbour			
Lowestoft South, including inner harbour		Properties.	196,434

#### OTHER INFORMATION:

The South Lowestoft Coastal study identifies NAI damages ranging between £25M to £30M. This includes £4M - £4.7M property (234 properties), £18M - £23M amenity damages and £2.5M deprivation damages. This study considered damages associated only with the northern section of Lowestoft South Beach.

## General Assessment of Objectives

The following table provides an overall assessment of how the two baseline scenarios impact upon the overall objectives agreed by stakeholders. These objectives are set out in more detail within Appendix E. The table aims to provide an initial high level assessment of the two baseline scenarios, highlighting potential issues of conflict. These issues are discussed in the following section, examining alternative management scenarios from which SMP2 policy is then derived.

STAKEHOLDER OBJECTIVE	NAI			WPM		
	Fails	Neutral	Acceptable	Fails	Neutral	Acceptable
To maintain Lowestoft as a viable commercial centre and tourist destination in a sustainable manner						
To reduce flood and erosion risk to residential and commercial properties in Lowestoft;						
To protect the commercial and recreational use of Lowestoft harbour						
To maintain navigation to Lowestoft harbour and associated areas						
To maintain and enhance the overall amenity value of the frontage in general and in particular Lowestoft South Beach, its beach and open area behind						
To maintain regeneration opportunities in and around Lowestoft						
To maintain transport links in and around Lowestoft						
To maintain critical regional transport links						
To maintain a transport link from Lowestoft to Kessingland and throughout the area						
To maintain the more informal character of Pakefield, retaining important cultural heritage						
To maintain the geological value of Pakefield Cliffs						
To maintain Kessingland as a viable commercial centre and tourist destination in a sustainable manner						
To support adaptation of rural industries and communities						
To maintain biological and geological features in a favourable condition, subject to natural change, and in the context of a dynamic coastal environment						
To maintain a range of recreational opportunities along the foreshore						
To maintain access to and along the coastal path						

### 4.1.3 DISCUSSION AND DETAILED POLICY DEVELOPMENT

The With Present Management scenario provides significant economic benefit and generally meets stakeholders' objectives. There is a continuing reliance on defence but this is outweighed in favour of meeting the fundamental needs of the area. There are, however, continuing concerns with respect to retaining the full amenity area of South Beach due to the potential longer term loss of the beach, although this is in part due to cyclic variation in the configuration of the sand banks. There is also concern with respect to the long term policy at Pakefield and the intent of management to the south of Kessingland. Also, there is limited scope for enhancement of the natural heritage and nature conservation. Potential loss of intertidal area within the harbour, while not specifically designated, would detract from the overall biodiversity.

In contrast, No Active Intervention results in significant disbenefit to the area, to the point that the economic revival and economic viability of Lowestoft would be questionable. As a baseline, With Present Management is appropriate and issues raised are discussed below in defining individual policy.

#### SUB-DIVISION AND DETAILED ASSESSMENT

Since the overall structure of the frontage would remain as it is, in assessing detailed policy the area may be discussed area by area, taking account of more local interactions.

#### *Lowestoft Ness and the Outer Harbour*

The general policy would be to hold the line of defence and this would be compatible with the policy development of the SMP 3b immediately to the north (3b24), although the policy further north is for eventual realignment (3b23). The defended area at risk from coastal flooding extends as far north as the Maritime Museum and inland over a width of some 250m. Realistically, this area could be separated from the adjacent flood area to the south. The current defence at the coast is in two elements: that of the coast protection at the shore and that of a flood bank or wall to the rear. There is little scope for increasing this width still further, or indeed realistically subdividing the area across the width. Future management of the frontage is, therefore, constrained by increasing the height of the defence and increasing front face protection. In the long term this approach will separate the area behind, visually, from the sea. Development of the area should take account of this and the potential increasing flood risk and reliance on defences. The area behind is being considered for redevelopment associated with sustainable energy. It is recommended that such future development should recognise increased risk of flooding and that floor levels and the type of development should be appropriately considered. The space behind the existing defences should be maintained to allow for defence raising. Given this on-going risk of flooding, even if only on more extreme events, there is a need to continue to provide flood warning for the area and to maintain an emergency plan for the area.

The outer harbour is essential for the wellbeing and economic viability of Lowestoft and the policy here would be to allow necessary protection of port operations. Management of the area is in part the responsibility of Associated British Ports. It is to be taken, therefore, that while the use of the port remains viable, defences should be maintained.

#### *Inner Harbour and Lake Lothing*

As with the area above, the overall policy would be to hold the line of defences. Further studies would be required to examine the specifics of this approach. There could potentially be loss of intertidal area. The only scope for addressing this would be

considering the opening up of areas such as Leathes' Ham on the northern side of Lake Lothing. The land behind this area rises steeply and this is not anticipated to increase flood risk, subject to detailed examination. The level and position of the railway line needs to be considered in detail in relation to any master plan for development. An Area Action Plan is being prepared for the redevelopment of large areas of the waterfront around Lake Lothing, much of which is currently at high risk of flooding. Restricting such development is unlikely to bring about opportunity to reduce flood risk elsewhere, although the manner of management of flood risk within the development area needs to be considered in detail. Where there is already development or long term operation the policy typically would be to allow defences to be increased with time. Where new development is planned, consideration needs to be given to achieving an appropriate level of flood risk, through raising defences, land and/or floor levels. It has been demonstrated that exclusion of flood water from certain key areas proposed for development would not significantly impact on flood risk in other areas. This approach is in line with that defined in the Catchment Flood Management Plan. Detailed options for managing flood risk in this area are being considered by the Area Action Plan and 1st East URC, and are beyond the remit of the SMP. Flood warning and emergency planning needs to be developed along side the development plan for the area.

At Kirkley valley the open space within the valley should be retained as far as possible to allow sustainable drainage. However, given the significance of development within the valley and the importance of the transport link running across the valley close to the harbour, it would be anticipated that the existing coastal flood defences would be retained and raised. The overall policy within the harbour would be to hold the general line of the existing quays. While at present it is assumed that defence is adequate, it is the approach taken to new development now which would allow sustainable flood risk in the future.

#### *South Beach*

The intent is to maintain the essential features of the area and to maintain coast protection against erosion to these key features. Pakefield Road headland and the South Pier and Children's Corner are considered important in management of the frontage. The policy in these areas would be Hold the Line. In the case of the southern headland it is considered that this should be held as a strong point, rather than as an advanced control point. This would need to be examined in detail but the highlighted risk is that advancing the influence and control may, as the coast works through its cycles of behaviour, result in moving coarser material away from the shore. There would be no guarantee that this material would return to the shore and would, therefore, constrain the natural periodic transfer of sediment across the frontage. There is no other obvious supply of coarse sediment and that which is there is what must be managed.

Over the rest of the frontage, the main concern is with potential beach loss. There is no real disadvantage in the short to medium term (over the next 50 years) in holding the existing line. The main pressure for loss would be over the final epoch of the SMP. Within the area between the Pakefield Road headland and the Claremont Pier this is probably manageable with rock groynes or similar approaches, limiting loss, but only within the variation of the shoreline width. Recent monitoring has shown that the area north of Claremont Pier is susceptible to greater variation than the beach to the south, with variation over shorter timescales than the major cyclic behaviour of the nearshore banks. Changes in the Lowestoft bank and the system local to the harbour have a greater impact on the northern end of South Beach. As a result, the northern beach is considered quite distinct from that further south. The principal material in this area has tended to be sand

and as such is likely to be more significantly affected by sea level rise and greater interaction between waves and the existing defences.

There may, therefore, be a need adjust the specific line of defence in the longer term. This may entail use of cross-shore or shore-linked structures or could possibly involve a combination of this and allowing sections of the defence to be moved back. It has been identified that the area behind the defences, to this corner, provides an important opportunity for regeneration of the frontage. The intent is, therefore, to maintain the overall line of defence to the area and, as such, either approach outlined above would be to Hold the Line.

Monitoring of the area and gaining a better understanding of how it is responding to changes in channel and bank positions will be important. Associated with this and notwithstanding the policy for Hold the Line, consideration has to be given to how the area behind the defences is redeveloped. Any such development should allow a width of up to 40m behind the sea wall to create the future potential to locally adjust defences. Currently, this width is occupied by the promenade and car park.

Management of the area is currently being reviewed. Consideration needs to be given at this stage to the long term vulnerability of this section of defence. Management policy is, however, to retain the core assets of the area and as such the general policy would be for Hold the Line, even though in places the actual line of defence may be changed.

#### *Pakefield and Pakefield Cliffs*

In holding the line to the Pakefield Road headland, some of the long term pressure on the



Pakefield frontage is relieved, retaining as at present a good width of shingle beach in front of Pakefield village. The extension to the promenade south of the headland could become increasingly difficult to manage during periods of erosion over the general frontage, but this extension is important with respect to management of cliff stability behind. In effect, it becomes a secondary headland during periods of erosion. In strengthening this southern corner of the existing defences, consideration would need to be given to the potential additional protection it may offer to Pakefield and also the potential impact it might have on the movement of shingle across the wider area. At Pakefield, the position of the defence, while potentially exposed

intermittently, is seen as principally sustainable. It acts to protect the important historical centre of the village and there seems no reason not to maintain defence in this area. This would be further supported if relatively minor works were carried out to stabilise the toe to the cliff beneath the Cliffs and Arbor Lane, this tending to support the formation of the generally stable bay to Pakefield. The real risk to the frontage would be in the last epoch of the SMP as sea level rises, rather than during the more intermittent pressure on the Pakefield frontage. Overall, the policy here would be one of managed realignment but

with the intent to have a backstop of an existing defence at Pakefield and to reinforce that with local defence of the promenade to the north and potentially at a location along the Pakefield cliff. Funding may be a significant issue in providing this approach to defence, and there may need to be some local realignment to achieve an affordable and sustainable defence in the area. The main intent would be to maintain defence to the core area of the village, taking the opportunity to provide protection locally elsewhere along the frontage if this created a condition that could be shown to assist in sustaining a wider area of shingle beach to the core of the village. Site specific consideration will need to be given to potential interaction with Gisleham waste site.

#### *Kessingland and Kessingland Cliffs*

The overriding intent would be not to intervene in a manner that impacted upon Benacre Ness, maintaining the natural development of the feature. Fixed assets to the crest of the Kessingland Cliff are not likely to be affected due to the protection afforded by the Ness. The policy for the undefended cliff would be one of No Active Intervention, even if assets such as the caravan park or individual property were at risk.

In front of the main village of Kessingland, the policy would be to maintain protection, but in all likelihood there will be little need for action.

As the southern end of the Ness moves north, the southern end of the sea wall could be exposed during the period of the SMP, probably towards the end of that period. The asphalt topped bank would be expected to be affected sooner, with pressure on this defence anticipated within 50 years. Failing to hold this point would rapidly result in erosion to the main area of housing in lower Kessingland with pressure then on the concrete sea wall. Protection of the southern point is unlikely to affect the development of the Ness and protects a characteristic and established part of Kessingland. As such, the boundary for holding the line at Kessingland is set at the end of Beach Road. A policy of Hold the Line is recommended in this area and this needs to be considered in detail with policy development to the south, where the issue of flooding to the rear of Kessingland is considered.

Policy beyond this point is considered in the next zone (PDZ2) and this considers the potential impact of management to the south, including Kessingland Levels. Policy to the south would determine the detailed management approach to the south end of Kessingland and the flood risk in behind the village.

### **Management Areas**

In setting out the discussion above, there are obviously areas of coast and individual policy units that need to be considered together. In summary, therefore, the zone is sub-divided into five management areas, these being:

- Lowestoft Ness and the Outer Harbour (three policy units).
- The Inner harbour and Lake Lothing (two policy units).
- South Beach (three policy units).
- The Pakefield frontage (three policy units).
- Kessingland (four policy units).

The policy and intent of management is set out by management area in the following summary sheets.



## PDZ1

**LOW 01** - LOWESTOFT NESS AND OUTER HARBOUR (CH. 4 TO 6)

**LOW 02** - INNER HARBOUR (CH. 5.5 TO 6)

**LOW 03** - SOUTH BEACH (CH. 6 TO 8)

**LOW 04** - PAKEFIELD (CH. 8 TO 10)

**KES 05** - KESSINGLAND (CH.10 TO 13.5)



#### 4.1.4 LOW 01 - LOWESTOFT NESS AND OUTER HARBOUR

<b>Location reference:</b>	<b>LOWESTOFT NESS AND OUTER HARBOUR (CH. 4 TO 6)</b>
<b>Management Area reference:</b>	<b>LOW 01</b>
<b>Policy Development Zone:</b>	<b>PDZ 1</b>

\* Note: Predicted shoreline mapping is based on a combination of monitoring data, analysis of historical maps and geomorphological assessment with allowance for sea level rise. Due to inherent uncertainties in predicting future change, these predictions are necessarily indicative. For use beyond the purpose of the shoreline management plan, reference should be made to the baseline data.

The following descriptions are provided to assist interpretation of the map shown overleaf.

##### 100 year shoreline position:

The following maps aim to summarise the anticipated position of the shoreline in 100 years under the two scenarios of “With Present Management” and under the “Draft Preferred Policy” being put forward through the Shoreline Management Plan.

-  In some areas the preferred policy does not change from that under the existing management approach. In some areas where there are hard defences this can be accurately identified. In other areas there is greater uncertainty. Even so, where the shoreline is likely to be quite clearly defined by a change such as the crest of a cliff the estimated position is shown as a single line.
- Where there is a difference between With Present Management and the Draft Preferred Policy this distinction is made in showing two different lines:
  -  With Present Management.
  -  Draft Preferred Policy.
-  In some areas, the Draft Preferred Policy either promotes a more adaptive approach to management or recognises that the shoreline is better considered as a width rather than a narrow line. This is represented on the map by a broader zone of management:

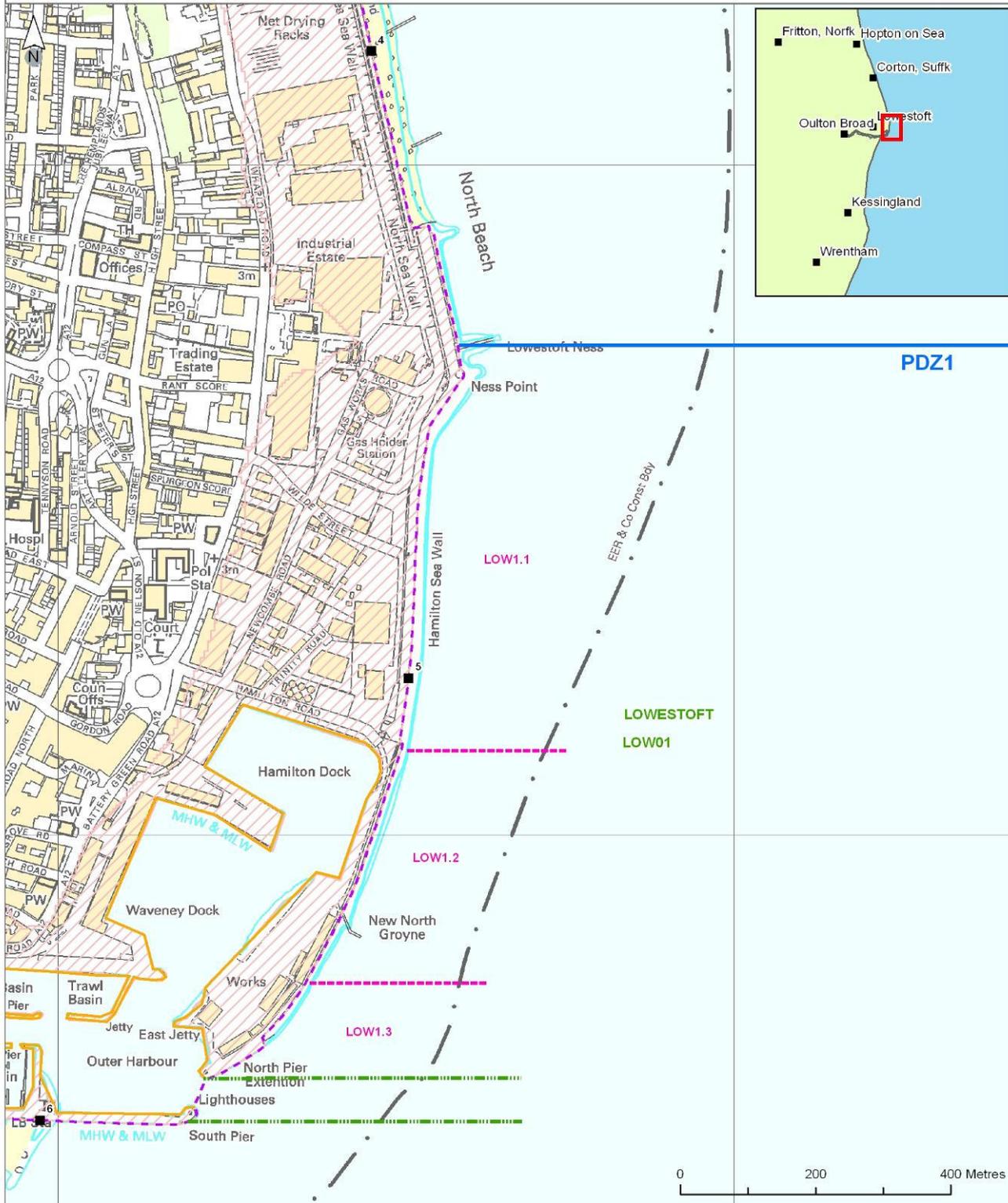
##### Flood Risk Zones

-  General Flood Risk Zones. The explanation of these zones is provided on the Environment Agency’s web site [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk). The maps within this Draft SMP document show where SMP policy might influence the management of flood risk.
-  Indicate areas where the intent of the SMP draft policy is to continue to manage this risk.
-  Indicate where over the 100 years the policy would allow increased risk of flooding.

The maps should be read in conjunction with the text within the Draft SMP document.

**Policy Development Zone 1 - Lowestoft Ness to Benacre Ness  
Management Area 1 - Lowestoft Ness to Outer Harbour (Ch 4 to 6)**

- Key:
- Policy Development Zones
  - - - Management Areas
  - - - Policy Units
  - Chainage
  - Scheduled Monuments



100 yr shoreline position:

- - - Draft preferred policy would be the same as With Present Management
- - - With Present Management where this differs from the Draft Preferred Policy
- - - Draft Preferred Policy where this differs from the With Present Management
- Indicative shoreline zone under Draft Preferred Policy

Note. Further explanation of these lines and zones is provided on the previous page.

- Existing Indicative EA Flood Risk Zone
- EA Flood Risk Zone where Draft SMP policy is for continued management of defence.
- EA Flood Risk Zone 2 where under Draft SMP policy there would be increased probability of flooding.

## SUMMARY OF PREFERRED PLAN RECOMMENDATIONS AND JUSTIFICATION

**PLAN:** The intent of the plan is to maintain the larger scale function of the headland and to support operation of the harbour, maintaining the value of commercial activities in the area. Management responsibilities lie in part with ABP in management of the port. The future management of the area does, to a degree, depend upon the continued viability of the harbour. The plan for this unit is consistent with the policy and plan for defence to the north of Lowestoft Ness as defined in SMP 3b (Nov 2006). However, a caveat is made with respect to this area identifying the increasing pressure on the frontage and the possible longer term need to consider some realignment. There is therefore a need to consider the appropriateness of long term development. Associated with the long term development plan is the need to develop flood warning and emergency planning for extreme flood situations.

PREFERRED POLICY TO IMPLEMENT PLAN:	
<b>From present day</b>	Maintain all defences.
<b>Medium term</b>	Maintain all defences.
<b>Long term</b>	Improve all defences and raise defences in line with sea level rise.

## SUMMARY OF SPECIFIC POLICIES

Policy Unit		Policy Plan			
		2025	2055	2105	Comment
LOW 1.1	Lowestoft Ness	HTL	HTL	HTL	Consider appropriateness of new development.
LOW 1.2	Hamilton Docks	HTL	HTL	HTL	
LOW 1.3	South Pier	HTL	HTL	HTL	
Key: HTL - Hold the Line, A - Advance the Line, NAI – No Active Intervention, MR – Managed Realignment					

## CHANGES FROM PRESENT MANAGEMENT

No substantial change from existing policy

## IMPLICATION WITH RESPECT TO BUILT ENVIRONMENT

Economics		by 2025	by 2055	by 2105	Total £k PV
<b>Property</b>	Potential NAI Damages/ Cost £k PV	2,052	1,678	1,145	4,876
	Preferred Plan Damages £k PV	236	193	132	562
	Benefits £k PV	1,816	1,485	1,013	4,314
	Costs of Implementing plan £k PV	750	250	1500	2,500

**Strategic Environmental Assessment summary table for preferred policy MA LOW 01**

This is an excerpt from the **Strategic Environmental Assessment** undertaken for the Suffolk SMP – for the full assessment, please refer to **Appendix F (Strategic Environmental Assessment: Environmental Report)**.

ISSUE	DETERMINATION
<p><b>ISSUE - Maintenance of environmental conditions to support biodiversity and the quality of life</b></p> <p><b>ISSUE - Maintenance of balance of coastal processes on a dynamic linear coastline with settlements at estuary mouths</b></p>	
<p>The Suffolk coast is a complex system of dynamic and static shingle, beach frontages, urban areas and estuary mouths. The system has been maintained in recent years to provide relative stability to the system in order to protect coastal assets. The effects of sea level rise require a more strategic approach to shoreline management, but the relative stability of the plan area needs to be maintained albeit within a dynamic context.</p>	
<p>Will SMP policy maintain an overall level of balance across the Suffolk coast in regard to coastal processes, which accepts dynamic change as a key facet of overall coastal management?</p>	<p>The Management Area provides protection for the established community of Lowestoft, which is a centre of national and regional importance. SMP policy limits the potential for natural change.</p>
<p>Will SMP policy increase actual or potential coastal erosion or flood risk to communities in the future?</p>	<p>Overall, the Management Area will have a minor positive benefit in regard to this issue.</p>
<p>Will SMP policy commit future generations to spend more on defences to maintain the same level of protection?</p>	<p>The Management Area will not lead to increased levels of erosion or flood risk. The overall effect therefore is neutral.</p>
<p>Does the policy work with or against natural processes?</p>	<p>The HTL policies within this Management Area will protect the communities of Lowestoft but defences heights will need to be increased in regard to SLR. The effect is considered therefore to be minor negative.</p>

ISSUE	DETERMINATION
	<p>The overall intent of the Management Area is to protect a populated urban area, which is of economic and cultural significance to the area. However, despite this, the overall effect is minor negative.</p>
<p><b>ISSUE - Maintenance of water supply in the coastal zone</b></p>	
<p>Agriculture on the Suffolk coast is dependent on the maintenance of a freshwater supply from groundwater aquifers. The delivery of this supply is threatened by intrusion of salt water into freshwater aquifers and from the loss of boreholes at risk from erosion – will SMP policy maintain structures to defend water abstraction infrastructure and to avoid any exacerbation of levels of saline intrusion into freshwater aquifers.</p>	<p>The HTL policy adjacent to Lowestoft will provide a minor positive contribution to the defence of freshwater aquifers and infrastructure.</p>
<p><b>ISSUE - Maintenance of the values of the coastal landscape &amp; Area of Outstanding Natural Beauty (AONB)</b></p>	
<p>The maintenance of the coastal landscape in the face of coastal change on a dynamic coast and estuary system. A key factor being the potential change in the landscape in response to shifts in coastal habitat composition and form.</p>	
<p>Will SMP policy maintain a range of key natural, cultural and social features critical to the integrity of the Suffolk coastal landscape?</p>	<p>The Management Area promotes cultural and social features, while natural features are not present. The Management Area therefore scores minor positive, due to protection of these features.</p>
<p>Will SMP policy lead to the introduction of features which are unsympathetic towards the character of the landscape?</p>	<p>No new features are proposed by this policy.</p>
<p><b>ISSUE - Protection of historic and archaeological features on a dynamic coastline</b></p>	
<p>The Suffolk coast contains a range of historic settlements and harbours typically located on the open coast and mouths of estuaries (for example, Southwold - Walberswick, Aldeburgh, Shingle Street etc). These settlements may be at higher levels of risk from coastal flooding as a result of climate change or levels of erosions along the coast – will SMP policy maintain the fabric and setting of key historic listed buildings and conservation areas?</p>	<p>Policy in this Management Area will continue to maintain the listed buildings and other historic environment features within Lowestoft.  Therefore there is an overall minor positive benefit.</p>
<p>The coastal zone in Suffolk contains a range of archaeological and palaeo-environmental features which may be at risk from loss from erosion within the timeline of the SMP – will SMP policy provide sustainable protection of archaeological and palaeo-environmental features (where</p>	<p>The Management Area provides protection for the industrial area of Lowestoft and the historic environment features within it and is therefore regarded as having a minor positive benefit.</p>

ISSUE	DETERMINATION
appropriate) and ensure the provision of adequate time for the survey of archaeological sites where loss is expected.	
<b>ISSUE - Protection of coastal communities and culture</b> <b>Protection of coastal towns and settlements</b>	
<p>The Core Strategies of Waveney Council and Suffolk Coastal District Council identify key coastal settlements which are important to the quality of life locally and the integrity of the economy of the area. These settlements are likely to face a higher level of risk from coastal flooding and loss due to erosion in response to sea level rise. There is a need therefore to ensure that the settlements below are protected for the duration of the SMP.</p> <p>Will SMP policy maintain key coastal settlements in a sustainable manner, where the impact of coastal flooding and erosion is minimised and time given for adaptation?</p> <p>Will SMP policy protect the coastal character of communities which have historically been undefended?</p>	<p>The HTL policies for defended areas provide defence for the coastal community and so the policy has a major positive benefit.</p> <p>Not relevant to the character of Lowestoft.</p>
<b>Protection of key coastal infrastructure</b>	
<p>The Suffolk coast is served by a network of roads along the coast (primarily the A12) and a network of smaller roads to coastal settlements. The maintenance of these roads is important in regard to the utility it provides for the coastal economy and quality of life etc. The roads themselves are of secondary importance (they could be replaced), the important feature is the actual access provided as a social and economic function. The potential exists for this network to be affected by coastal processes – will SMP policy maintain road based transport connectivity between settlements on the Suffolk coast?</p> <p>The Suffolk coast is visited by a large number of tourists and residents every year. Access to and along the coast is provided by a range of coastal footpaths (the primary footpath being the Suffolk Coasts and Heaths Footpath). The provision of this access, rather than the actual footpaths themselves supports a range of values which contribute to the quality of life and local</p>	<p>The Management Area HTL will provide ongoing defence to the coastal infrastructure in the vicinity of Hamilton and Waveney Docks, as well as the industry in this area.</p> <p>The Management Area therefore provides major positive benefits.</p> <p>The HTL policy will maintain the provision of access in the community of Lowestoft, contributing to the quality of life and local economy of the Suffolk coastal area.</p> <p>The Management Area provides minor positive benefits</p>

ISSUE	DETERMINATION
<p>economy of the Suffolk coastal area. Paths are often located close to the foreshore in areas at risk from coastal erosion (or within potential areas for managed realignment) – will SMP policy maintain or enhance levels of access along or to the Suffolk coast.</p>	



#### 4.1.5 LOW 02 - INNER HARBOUR

<b>Location reference:</b>	<b>INNER HARBOUR (CH. 5.5 TO 6)</b>
<b>Management Area reference:</b>	<b>LOW 02</b>
<b>Policy Development Zone:</b>	<b>PDZ 1</b>

\* Note: Predicted shoreline mapping is based on a combination of monitoring data, analysis of historical maps and geomorphological assessment with allowance for sea level rise. Due to inherent uncertainties in predicting future change, these predictions are necessarily indicative. For use beyond the purpose of the shoreline management plan, reference should be made to the baseline data.

The following descriptions are provided to assist interpretation of the map shown overleaf.

##### 100 year shoreline position:

The following maps aim to summarise the anticipated position of the shoreline in 100 years under the two scenarios of “With Present Management” and under the “Draft Preferred Policy” being put forward through the Shoreline Management Plan.

-  In some areas the preferred policy does not change from that under the existing management approach. In some areas where there are hard defences this can be accurately identified. In other areas there is greater uncertainty. Even so, where the shoreline is likely to be quite clearly defined by a change such as the crest of a cliff the estimated position is shown as a single line.
- Where there is a difference between With Present Management and the Draft Preferred Policy this distinction is made in showing two different lines:
  -  With Present Management.
  -  Draft Preferred Policy.
-  In some areas, the Draft Preferred Policy either promotes a more adaptive approach to management or recognises that the shoreline is better considered as a width rather than a narrow line. This is represented on the map by a broader zone of management:

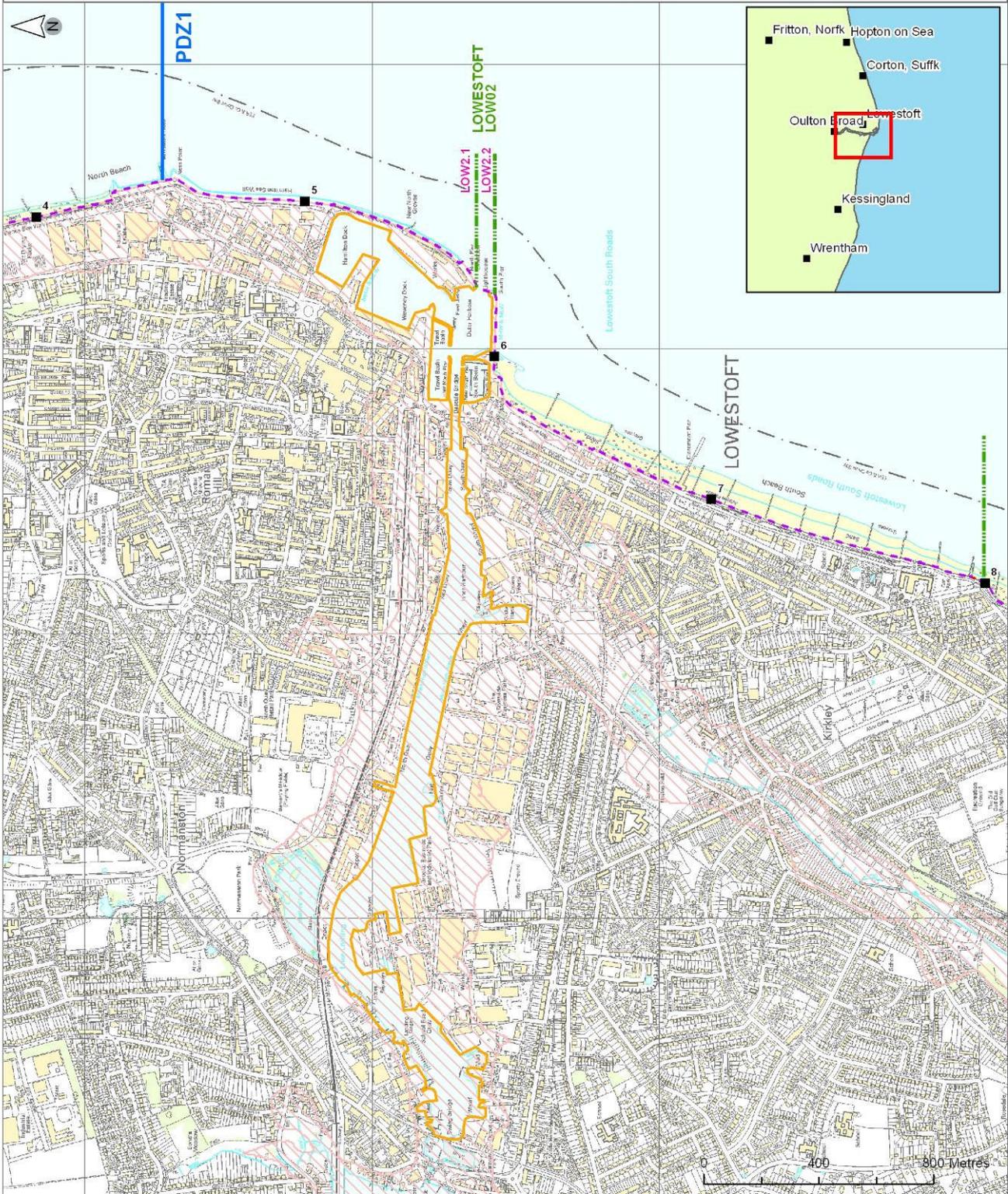
##### Flood Risk Zones

-  General Flood Risk Zones. The explanation of these zones is provided on the Environment Agency’s web site [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk). The maps within this Draft SMP document show where SMP policy might influence the management of flood risk.
-  Indicate areas where the intent of the SMP draft policy is to continue to manage this risk.
-  Indicate where over the 100 years the policy would allow increased risk of flooding.

The maps should be read in conjunction with the text within the Draft SMP document.

### Policy Development Zone 1 - Lowestoft Ness to Benacre Ness Management Area 2 - Inner Harbour (Ch 5.5 to 6)

- Key:
- Policy Development Zones
  - Management Areas
  - Policy Units
  - Chainage
  - Scheduled Monuments



100 yr shoreline position:

- Draft preferred policy would be the same as With Present Management
- With Present Management where this differs from the Draft Preferred Policy
- Draft Preferred Policy where this differs from the With Present Management
- Indicative shoreline zone under Draft Preferred Policy

Note. Further explanation of these lines and zones is provided on the previous page.

- Existing Indicative EA Flood Risk Zone
- EA Flood Risk Zone where Draft SMP policy is for continued management of defence.
- EA Flood Risk Zone 2 where under Draft SMP policy there would be increased probability of flooding.



I:\9S4195\Technical\_Data\GIS\Projects\Figures\Policy Development Zones\With Present Management

### SUMMARY OF PREFERRED PLAN RECOMMENDATIONS AND JUSTIFICATION

**PLAN:** The intent of the plan is to maintain a high level of defence to core commercial and residential areas of Lowestoft. Within this, the plan recognises the need for redevelopment of the dock area and the high potential of waterside development. The recommendations confirm the need for a detailed assessment of flood risk by the Area Action Plan and 1st East URC. This aims to ensure a coherent defence of existing use to encourage redevelopment with an adaptive approach to flood risk allowing possible set back of flood defences in the future in specific locations. There is a need to establish flood warning and emergency planning for extreme flood situations along side the regeneration plan for the area. The aim is also to examine the possibility of habitat recreation, potentially in areas such as Leathes' Ham.

PREFERRED POLICY TO IMPLEMENT PLAN:	
<b>From present day</b>	To maintain or support maintenance of the harbour structures and develop a coherent flood risk strategy to guide development within the Area Action Plan and by 1st East URC.
<b>Medium term</b>	To maintain or support maintenance of the harbour structures.
<b>Long term</b>	To maintain or support maintenance of the harbour structures and implement flood risk strategy.

### SUMMARY OF SPECIFIC POLICIES

Policy Unit		Policy Plan			
		2025	2055	2105	Comment
LOW 2.1	Northern side	HTL	HTL	HTL	Examine possibility of allowing flooding to Leathes' Ham subject to maintaining general flood defence.
LOW 2.2	Southern side	HTL	HTL	HTL	
Key: HTL - Hold the Line, A - Advance the Line, NAI – No Active Intervention MR – Managed Realignment					

### CHANGES FROM PRESENT MANAGEMENT

No previous policy. The policy is in line with present practice in the area.

### IMPLICATION WITH RESPECT TO BUILT ENVIRONMENT

Economics		by 2025	by 2055	by 2105	Total £k PV
<b>Property</b>	Potential NAI Damages/ Cost £k PV	38,323	31,343	21,381	91,048
	Preferred Plan Damages £k PV	1,832	1,498	1,022	4,351
	Benefits £k PV	36,491	29,845	20,359	86,697
	Costs of Implementing plan £k PV	-	-	-	-

As referred to above, although the policy is defined as hold the line, the implementation of this policy is to be developed within an area action plan, involving regeneration. It is therefore not sensible or practical to identify costs against implementing the SMP policy as detailed works would be determined from the area action plan.

**Strategic Environmental Assessment summary table for preferred policy MA LOW 02**

This is an excerpt from the **Strategic Environmental Assessment** undertaken for the Suffolk SMP – for the full assessment, please refer to **Appendix F (Strategic Environmental Assessment: Environmental Report)**.

ISSUE	DETERMINATION
<p><b>ISSUE - Maintenance of environmental conditions to support biodiversity and the quality of life</b></p>	
<p><b>ISSUE - Maintenance of balance of coastal processes on a dynamic linear coastline with settlements at estuary mouths</b></p> <p>The Suffolk coast is a complex system of dynamic and static shingle, beach frontages, urban areas and estuary mouths. The system has been maintained in recent years to provide relative stability to the system in order to protect coastal assets. The effects of sea level rise require a more strategic approach to shoreline management, but the relative stability of the plan area needs to be maintained albeit within a dynamic context.</p>	
<p>Will SMP policy maintain an overall level of balance across the Suffolk coast in regard to coastal processes, which accepts dynamic change as a key facet of overall coastal management?</p>	<p>The Management Area provides protection for the areas of Lowestoft adjacent to Lake Lothing, which is a centre of national and regional importance. SMP policy limits the potential for natural change.</p>
<p>Will SMP policy increase actual or potential coastal erosion or flood risk to communities in the future?</p>	<p>Overall, the Management Area seeks to reduce the risk to the Lake Lothing area and therefore will have a minor positive benefit in regard to this issue. The management of flood risk will be addressed by the regeneration plan. Potential increase in commitment to flood risk management will therefore be assessed against benefit to the community. The overall effect is therefore neutral.</p>
<p>Will SMP policy commit future generations to spend more on defences to maintain the same level of protection?</p>	<p>The HTL policies within this Management Area will protect the community adjacent to Lake Lothing, but defences heights will need to be increased in regard to SLR. The effect is considered therefore to be minor negative.</p>
<p>Does the policy work with or against natural processes?</p>	<p>The overall intent of the Management Area is to protect a populated urban area, which</p>

ISSUE	DETERMINATION
	is of economic and cultural significance to the area. However, despite this, the overall effect is minor negative, due to the fact that no natural processes are present.
<b>ISSUE - Maintenance of water supply in the coastal zone</b>	
<b>ISSUE - Maintenance of the values of the coastal landscape &amp; Area of Outstanding Natural Beauty (AONB)</b>	
<p>The maintenance of the coastal landscape in the face of coastal change on a dynamic coast and estuary system. A key factor being the potential change in the landscape in response to shifts in coastal habitat composition and form.</p> <p>Will SMP policy maintain a range of key natural, cultural and social features critical to the integrity of the Suffolk coastal landscape?</p> <p>Will SMP policy lead to the introduction of features which are unsympathetic towards the character of the landscape?</p>	<p>The Management Area promotes cultural and social features, while natural features are not present. The Management Area therefore scores minor positive, due to protection of these features.</p> <p>No new features are proposed by this policy.</p>
<b>ISSUE - Protection of historic and archaeological features on a dynamic coastline</b>	
<p>The Suffolk coast contains a range of historic settlements and harbours typically located on the open coast and mouths of estuaries (for example, Southwold - Walberswick, Aldeburgh, Shingle Street etc). These settlements may be at higher levels of risk from coastal flooding as a result of climate change or levels of erosions along the coast – will SMP policy maintain the fabric and setting of key historic listed buildings and conservation areas?</p> <p>The coastal zone in Suffolk contains a range of archaeological and palaeo-environmental features which may be at risk from loss from erosion within the timeline of the SMP – will SMP policy provide sustainable protection of archaeological and palaeo-environmental features (where appropriate) and ensure the provision of adequate time for the survey of archaeological sites where loss is expected.</p>	<p>Policy in this Management Area will continue to maintain the listed buildings and other historic environment features within Lowestoft.</p> <p>Therefore there is an overall minor positive benefit.</p> <p>The Management Area provides protection for the urban area of Lowestoft and the historic environment features within it and is therefore regarded as having a minor positive benefit.</p>

ISSUE	DETERMINATION
<p><b>ISSUE - Protection of coastal communities and culture</b></p> <p><i>Protection of coastal towns and settlements</i></p>	
<p>The Core Strategies of Waveney Council and Suffolk Coastal District Council identify key coastal settlements which are important to the quality of life locally and the integrity of the economy of the area. These settlements are likely to face a higher level of risk from coastal flooding and loss due to erosion in response to sea level rise. There is a need therefore to ensure that the settlements below are protected for the duration of the SMP.</p> <p>Will SMP policy maintain key coastal settlements in a sustainable manner, where the impact of coastal flooding and erosion is minimised and time given for adaptation?</p> <p>Will SMP policy protect the coastal character of communities which have historically been undefended?</p>	<p>The HTL policies for defended areas provide sustainable defence and so the policy has a major positive benefit.</p> <p>Not relevant to the character of Lowestoft.</p>
<p><b>Protection of key coastal infrastructure</b></p>	
<p>The Suffolk coast is served by a network of roads along the coast (primarily the A12) and a network of smaller roads to coastal settlements. The maintenance of these roads is important in regard to the utility it provides for the coastal economy and quality of life etc. The roads themselves are of secondary importance (they could be replaced), the important feature is the actual access provided as a social and economic function. The potential exists for this network to be affected by coastal processes – will SMP policy maintain road based transport connectivity between settlements on the Suffolk coast?</p>	<p>The Management Area HTL will provide ongoing defence of local infrastructure adjacent to the Lake Lothing area.</p> <p>The Management Area provides major positive benefits.</p>
<p>The Suffolk coast is visited by a large number of tourists and residents every year. Access to and along the coast is provided by a range of coastal footpaths (the primary footpath being the Suffolk Coasts and Heaths Footpath). The provision of this access, rather than the actual footpaths themselves supports a range of values which contribute to the quality of life and local economy of the Suffolk coastal area. Paths are often located close to the foreshore in areas at risk from coastal erosion (or within potential areas for managed realignment) – will SMP policy maintain or enhance levels of access along or to the Suffolk coast.</p>	<p>The HTL policy will maintain the provision of access in the community of Lowestoft, contributing to the quality of life and local economy of the Suffolk coastal area, especially in the retail centre adjacent to Lake Lothing.</p> <p>The Management Area provides minor positive benefits</p>

#### 4.1.6 LOW 03 - SOUTH BEACH

<b>Location reference:</b>	<b>SOUTH BEACH (CH. 6 TO 8)</b>
<b>Management Area reference:</b>	<b>LOW 03</b>
<b>Policy Development Zone:</b>	<b>PDZ 1</b>

\* Note: Predicted shoreline mapping is based on a combination of monitoring data, analysis of historical maps and geomorphological assessment with allowance for sea level rise. Due to inherent uncertainties in predicting future change, these predictions are necessarily indicative. For use beyond the purpose of the shoreline management plan, reference should be made to the baseline data.

The following descriptions are provided to assist interpretation of the map shown overleaf.

##### 100 year shoreline position:

The following maps aim to summarise the anticipated position of the shoreline in 100 years under the two scenarios of “With Present Management” and under the “Draft Preferred Policy” being put forward through the Shoreline Management Plan.

-  In some areas the preferred policy does not change from that under the existing management approach. In some areas where there are hard defences this can be accurately identified. In other areas there is greater uncertainty. Even so, where the shoreline is likely to be quite clearly defined by a change such as the crest of a cliff the estimated position is shown as a single line.
- Where there is a difference between With Present Management and the Draft Preferred Policy this distinction is made in showing two different lines:
  -  With Present Management.
  -  Draft Preferred Policy.
-  In some areas, the Draft Preferred Policy either promotes a more adaptive approach to management or recognises that the shoreline is better considered as a width rather than a narrow line. This is represented on the map by a broader zone of management:

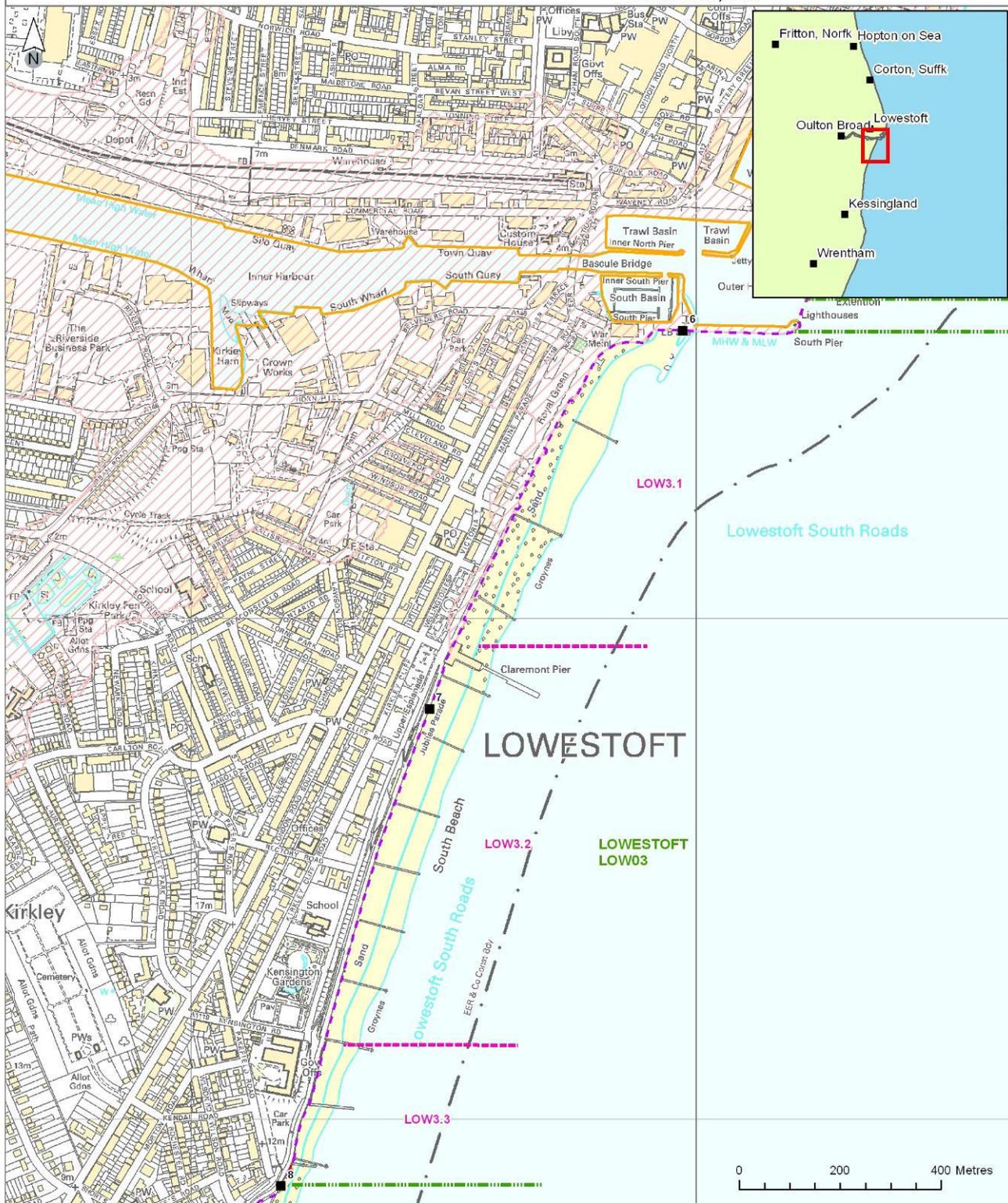
##### Flood Risk Zones

-  General Flood Risk Zones. The explanation of these zones is provided on the Environment Agency’s web site [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk). The maps within this Draft SMP document show where SMP policy might influence the management of flood risk.
-  Indicate areas where the intent of the SMP draft policy is to continue to manage this risk.
-  Indicate where over the 100 years the policy would allow increased risk of flooding.

The maps should be read in conjunction with the text within the Draft SMP document.

### Policy Development Zone 1 - Lowestoft Ness to Benacre Ness Management Area 3 - South Beach (Ch 6 to 8)

- Key:
- Policy Development Zones
  - Management Areas
  - Policy Units
  - Chainage
  -  Scheduled Monuments



100 yr shoreline position:

- Draft preferred policy would be the same as With Present Management
- With Present Management where this differs from the Draft Preferred Policy
- Draft Preferred Policy where this differs from the With Present Management
- Indicative shoreline zone under Draft Preferred Policy

Note. Further explanation of these lines and zones is provided on the previous page.

- Existing Indicative EA Flood Risk Zone
- EA Flood Risk Zone where Draft SMP policy is for continued management of defence.
- EA Flood Risk Zone 2 where under Draft SMP policy there would be increased probability of flooding.



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## SUMMARY OF PREFERRED PLAN RECOMMENDATIONS AND JUSTIFICATION

**PLAN:** The aim of the plan is to maintain key use and features of the area. In the longer term there is uncertainty as to retaining a beach. The plan aims to address this through maintaining potential for set back through current planning or consideration of enhancing cross-shore structures to maintain beach. The Pakefield Road Headland is considered to be an important control feature in maintaining the defences to the north. It is recognised that this is likely to come under periods of erosion pressure and will require possible strengthening. While the offshore banks play an important role in behaviour of the beach, it is at the northern area where there may be most significant change. The policy for the area is to Hold the Line, recognising the particular benefits derived from this area in planning terms. In regeneration of the hinterland in this area the intent would be to maintain a degree of flexibility to allow adaptation of defences in the future. To achieve the above plan there may be a requirement for funding beyond that provided by Flood and coastal erosion risk management.

<b>PREFERRED POLICY TO IMPLEMENT PLAN:</b>	
<b>From present day</b>	Maintain defences and repair the Flint wall.
<b>Medium term</b>	Maintain and repair defences, forming a hard point at the southern headland. Possible need for modified rock groynes to the southern section.
<b>Long term</b>	Maintain and repair defences. Review approach to defence at the north.

## SUMMARY OF SPECIFIC POLICIES

<b>Policy Unit</b>		<b>Policy Plan</b>			
		<b>2025</b>	<b>2055</b>	<b>2105</b>	<b>Comment</b>
LOW 3.1	North	HTL	HTL	HTL	Potential maintained to locally realign actual defence with the intent of holding general line of defence.
LOW 3.2	South	HTL	HTL	HTL	
LOW 3.3	Pakefield Road	HTL	HTL	HTL	

Key: HTL - Hold the Line, A - Advance the Line, NAI – No Active Intervention  
MR – Managed Realignment

## CHANGES FROM PRESENT MANAGEMENT

No substantial change in policy, although planning of land use at the northern end of South Beach needs to recognise the potential need to adjust the position of defences to accommodate a sustainable defence approach.

## IMPLICATION WITH RESPECT TO BUILT ENVIRONMENT

Economics		<b>by 2025</b>	<b>by 2055</b>	<b>by 2105</b>	<b>Total £k PV</b>
<b>Property</b>	Potential NAI Damages/ Cost £k PV	47,927	37,621	27,594	112,178
	Preferred Plan Damages £k PV	1,732	1417	967	4,117
	Benefits £k PV	46,195	36,204	26,627	108,061
	Costs of Implementing plan £k PV	2,000	400	750	3,150

Note: a recent appraisal has indicated higher costs for defence to this frontage (£11M). The appraisal also identifies £18M to £23M amenity loss. The preferred option selection includes for maintaining the beach in addition to improving sea walls. The appraisal focuses on the northern end of the frontage and does not include potential flood damages.

**Strategic Environmental Assessment summary table for preferred policy MA LOW 03**

This is an excerpt from the **Strategic Environmental Assessment** undertaken for the Suffolk SMP – for the full assessment, please refer to **Appendix F (Strategic Environmental Assessment: Environmental Report)**.

ISSUE	DETERMINATION
<p><b>ISSUE - Maintenance of environmental conditions to support biodiversity and the quality of life</b></p> <p><b>ISSUE - Maintenance of balance of coastal processes on a dynamic linear coastline with settlements at estuary mouths</b></p>	
<p>The Suffolk coast is a complex system of dynamic and static shingle, beach frontages, urban areas and estuary mouths. The system has been maintained in recent years to provide relative stability to the system in order to protect coastal assets. The effects of sea level rise require a more strategic approach to shoreline management, but the relative stability of the plan area needs to be maintained albeit within a dynamic context.</p>	
<p>Will SMP policy maintain an overall level of balance across the Suffolk coast in regard to coastal processes, which accepts dynamic change as a key facet of overall coastal management?</p>	<p>The Management Area provides protection for the areas of Lowestoft adjacent to South Beach and Lowestoft Pier, although does limit the potential for natural change.</p>
<p>Will SMP policy increase actual or potential coastal erosion or flood risk to communities in the future?</p>	<p>Overall, the Management Area seeks to reduce the risk to the South Beach area of Lowestoft and therefore will have a minor positive benefit in regard to this issue.</p>
<p>Will SMP policy commit future generations to spend more on defences to maintain the same level of protection?</p>	<p>The HTL policies within this Management Area will protect the important area of South Beach and the area around the harbour entrance, but defences heights will need to be increased in regard to SLR. The effect is considered therefore to be minor negative.</p>
<p>Does the policy work with or against natural processes?</p>	<p>The overall intent of the Management Area is to protect a populated urban area, which is of economic and cultural significance to the area. However, despite this, the overall effect is minor negative, due to the fact that the management area limits natural processes.</p>

ISSUE	DETERMINATION
<p><b>ISSUE - Maintenance of water supply in the coastal zone</b></p>	
<p><b>ISSUE - Maintenance of the values of the coastal landscape &amp; Area of Outstanding Natural Beauty (AONB)</b></p>	
<p>The maintenance of the coastal landscape in the face of coastal change on a dynamic coast and estuary system. A key factor being the potential change in the landscape in response to shifts in coastal habitat composition and form.</p> <p>Will SMP policy maintain a range of key natural, cultural and social features critical to the integrity of the Suffolk coastal landscape?</p> <p>Will SMP policy lead to the introduction of features which are unsympathetic towards the character of the landscape?</p>	<p>The Management Area promotes cultural and social features, while natural features are not present. The Management Area therefore scores minor positive, due to protection of these features.</p> <p>No new features are proposed by this policy.</p>
<p><b>ISSUE - Protection of historic and archaeological features on a dynamic coastline</b></p>	
<p>The Suffolk coast contains a range of historic settlements and harbours typically located on the open coast and mouths of estuaries (for example, Southwold - Walberswick, Aldeburgh, Shingle Street etc). These settlements may be at higher levels of risk from coastal flooding as a result of climate change or levels of erosions along the coast – will SMP policy maintain the fabric and setting of key historic listed buildings and conservation areas?</p>	<p>Policy in this Management Area will continue to maintain the listed buildings and other historic environment features within Lowestoft.</p> <p>Therefore there is an overall minor positive benefit.</p>
<p>The coastal zone in Suffolk contains a range of archaeological and palaeo-environmental features which may be at risk from loss from erosion within the timeline of the SMP – will SMP policy provide sustainable protection of archaeological and palaeo-environmental features (where appropriate) and ensure the provision of adequate time for the survey of archaeological sites where loss is expected.</p>	<p>The Management Area provides protection for the residential areas of Lowestoft and the historic environment features within it and is therefore regarded as having a minor positive benefit.</p>

ISSUE	DETERMINATION
<p><b>ISSUE - Protection of coastal communities and culture</b></p>	
<p><b>Protection of coastal towns and settlements</b></p>	
<p>The Core Strategies of Waveney Council and Suffolk Coastal District Council identify key coastal settlements which are important to the quality of life locally and the integrity of the economy of the area. These settlements are likely to face a higher level of risk from coastal flooding and loss due to erosion in response to sea level rise. There is a need therefore to ensure that the settlements below are protected for the duration of the SMP</p> <p>Will SMP policy maintain key coastal settlements in a sustainable manner, where the impact of coastal flooding and erosion is minimised and time given for adaptation?</p> <p>Will SMP policy protect the coastal character of communities which have historically been undefended?</p>	<p>The HTL policies for defended areas provide sustainable defence and so the policy has a minor positive benefit.</p> <p>Not relevant to the character of Lowestoft.</p>
<p><b>Protection of key coastal infrastructure</b></p>	
<p>The Suffolk coast is served by a network of roads along the coast (primarily the A12) and a network of smaller roads to coastal settlements. The maintenance of these roads is important in regard to the utility it provides for the coastal economy and quality of life etc. The roads themselves are of secondary importance (they could be replaced), the important feature is the actual access provided as a social and economic function. The potential exists for this network to be affected by coastal processes – will SMP policy maintain road based transport connectivity between settlements on the Suffolk coast?</p>	<p>The Management Area HTL will provide ongoing defence of local infrastructure in Lowestoft and therefore provides minor positive benefits.</p>
<p>The Suffolk coast is visited by a large number of tourists and residents every year. Access to and along the coast is provided by a range of coastal footpaths (the primary footpath being the Suffolk Coasts and Heaths Footpath). The provision of this access, rather than the actual footpaths themselves supports a range of values which contribute to the quality of life and local economy of the Suffolk coastal area. Paths are often located close to the foreshore in areas at risk from coastal erosion (or within potential areas for managed realignment) – will SMP policy maintain or enhance levels of access along or to the Suffolk coast.</p>	<p>The HTL policy will maintain coastal footpath in urban areas and would not lead to the loss of any access to Pakefield Cliffs.</p> <p>The Management Area provides minor positive benefits</p>

#### 4.1.7 LOW 04 - PAKEFIELD

<b>Location reference:</b>	<b>PAKEFIELD (CH. 8 TO 10)</b>
<b>Management Area reference:</b>	<b>LOW 04</b>
<b>Policy Development Zone:</b>	<b>PDZ 1</b>

\* Note: Predicted shoreline mapping is based on a combination of monitoring data, analysis of historical maps and geomorphological assessment with allowance for sea level rise. Due to inherent uncertainties in predicting future change, these predictions are necessarily indicative. For use beyond the purpose of the shoreline management plan, reference should be made to the baseline data.

The following descriptions are provided to assist interpretation of the map shown overleaf.

##### 100 year shoreline position:

The following maps aim to summarise the anticipated position of the shoreline in 100 years under the two scenarios of “With Present Management” and under the “Draft Preferred Policy” being put forward through the Shoreline Management Plan.

-  In some areas the preferred policy does not change from that under the existing management approach. In some areas where there are hard defences this can be accurately identified. In other areas there is greater uncertainty. Even so, where the shoreline is likely to be quite clearly defined by a change such as the crest of a cliff the estimated position is shown as a single line.
- Where there is a difference between With Present Management and the Draft Preferred Policy this distinction is made in showing two different lines:

-  With Present Management.
-  Draft Preferred Policy.

-  In some areas, the Draft Preferred Policy either promotes a more adaptive approach to management or recognises that the shoreline is better considered as a width rather than a narrow line. This is represented on the map by a broader zone of management:

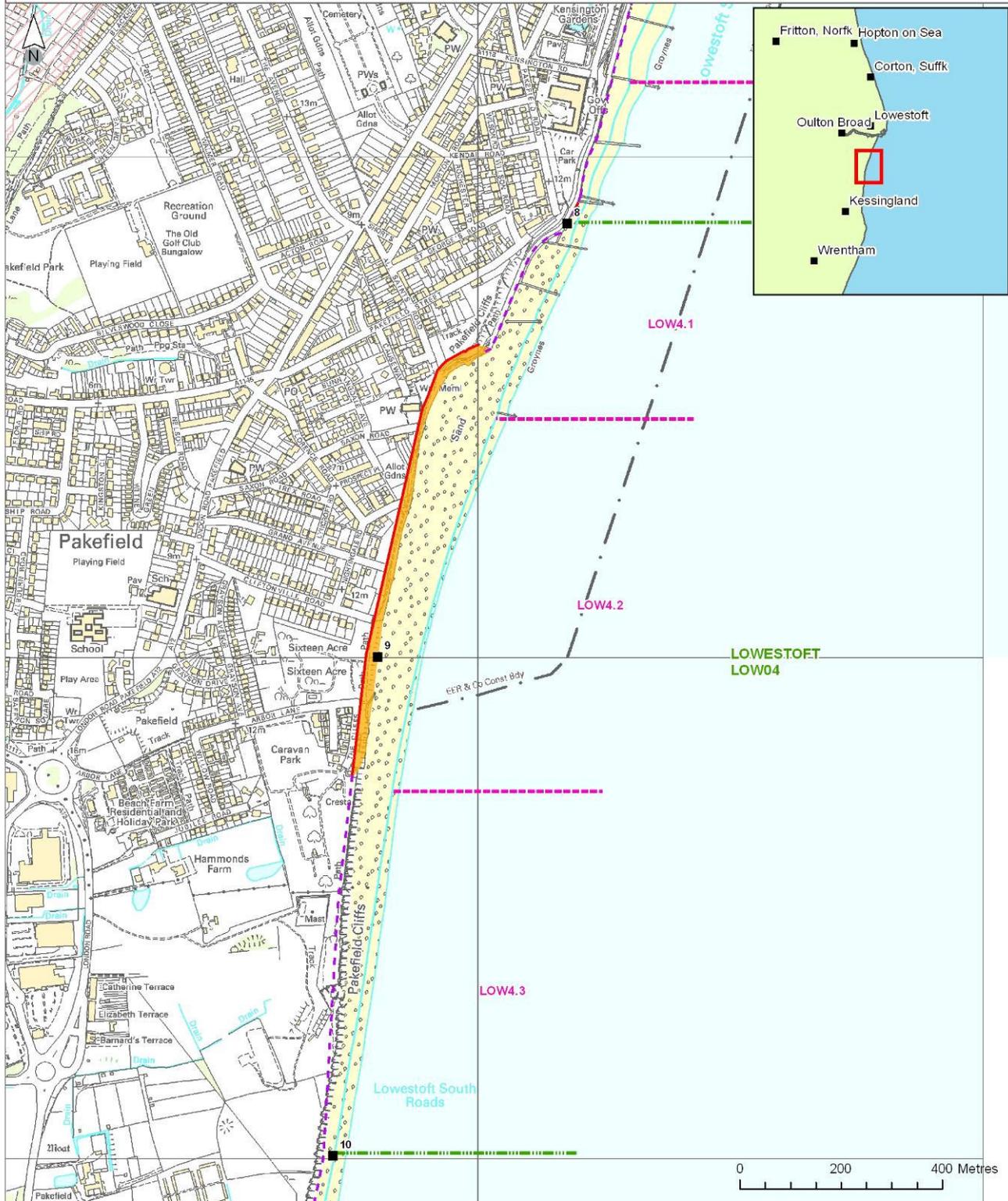
##### Flood Risk Zones

-  General Flood Risk Zones. The explanation of these zones is provided on the Environment Agency’s web site [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk). The maps within this Draft SMP document show where SMP policy might influence the management of flood risk.
-  Indicate areas where the intent of the SMP draft policy is to continue to manage this risk.
-  Indicate where over the 100 years the policy would allow increased risk of flooding.

The maps should be read in conjunction with the text within the Draft SMP document.

### Policy Development Zone 1 - Lowestoft Ness to Benacre Ness Management Area 4 - Pakefield (Ch 8 to 10)

- Key:
- Policy Development Zones
  - Management Areas
  - Policy Units
  - Chainage
  - Scheduled Monuments



100 yr shoreline position:

- - - Draft preferred policy would be the same as With Present Management
- With Present Management where this differs from the Draft Preferred Policy
- Draft Preferred Policy where this differs from the With Present Management
- Indicative shoreline zone under Draft Preferred Policy

Note. Further explanation of these lines and zones is provided on the previous page.

- ▨ Existing Indicative EA Flood Risk Zone
- ▨ EA Flood Risk Zone where Draft SMP policy is for continued management of defence.
- EA Flood Risk Zone 2 where under Draft SMP policy there would be increased probability of flooding.



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## SUMMARY OF PREFERRED PLAN RECOMMENDATIONS AND JUSTIFICATION

**PLAN:** The aim of the plan is to maintain protection to key areas by maintaining a good beach. This requires strategic control of erosion at the promenade south of the Pakefield Headland and beneath the cliffs to the south of Pakefield. In this southern area the opportunity may be taken to provide protection to property at the crest of the cliff. Overall, the plan is for managed realignment of the whole area while holding the line to specific areas within this. In achieving the above plan, funding may be a significant issue. It is probable that some realignment of defences may ultimately be required. The main aim is to maintain protection to core assets of the village. There may be loss of individual properties.

PREFERRED POLICY TO IMPLEMENT PLAN:	
<b>From present day</b>	Maintain defences.
<b>Medium term</b>	Maintain and reinforce defences as required.
<b>Long term</b>	Maintain and reinforce defences and consider need for strategic protection along Pakefield cliffs.

## SUMMARY OF SPECIFIC POLICIES

Policy Unit		Policy Plan			
		2025	2055	2105	Comment
LOW 4.1	Southern Promenade	HTL	HTL	HTL	Consider manner of defence to support beach retention to south.
LOW 4.2	Pakefield	HTL	HTL	MR	Intermittent need to reinforce defence and longer term need to control beach.
LOW 4.3	Pakefield Cliffs	NAI	NAI	NAI	Management in the final epoch needs to be considered in connection with LOW 4.2.
Key: HTL - Hold the Line, A - Advance the Line, NAI – No Active Intervention MR – Managed Realignment					

## CHANGES FROM PRESENT MANAGEMENT

Change in policy to retain protection to Pakefield, recognising that there may still be some loss of individual properties in the future.

## IMPLICATION WITH RESPECT TO BUILT ENVIRONMENT

Economics		by 2025	by 2055	by 2105	Total £k PV
<b>Property</b>	Potential NAI Damages/ Cost £k PV	0	0	374	374
	Preferred Plan Damages £k PV	0	0	0	0
	Benefits £k PV	0	0	347	374
	Costs of Implementing plan £k PV	50	210	10	270

**Strategic Environmental Assessment summary table for preferred policy MA LOW 04**

This is an excerpt from the **Strategic Environmental Assessment** undertaken for the Suffolk SMP – for the full assessment, please refer to **Appendix F (Strategic Environmental Assessment: Environmental Report)**.

ISSUE	DETERMINATION
<p><b>ISSUE - Maintenance and Enhancement of Biodiversity on a Dynamic Coastline</b></p> <p>The interaction between the maintenance of designated freshwater or terrestrial habitat protected by defences and designated coastal habitat seaward of defences – will SMP policy provide a sustainable approach to habitat management?</p>	<p>Only designated site in this Management Area is Pakefield Cliffs, with the policy in front of this site being NAI. This policy would maintain an active face on this site (as existing). The remaining policies are for HTL, with MR in the second epoch at LOW4.2.</p> <p>The Management Area is therefore considered to have an overall minor positive effect for this issue.</p>
<p>Coastal squeeze has the potential to lead to the loss of UK BAP (priority &amp; broad) coastal habitat. Alternative sites for habitat creation are required to help offset the possible future natural losses – will there be no net loss of UK BAP habitat within the SMP timeline up to 2100?</p> <p>Coastal squeeze has the potential to lead to coastal SSSIs falling into unfavourable condition. For example, approximately 50 of 100 SSSI units assessed at the Minsmere-Walberswick Heaths and Marshes SSSI are in unfavourable condition, although the majority of these (36) are in an unfavourable recovering condition. Factors attributable to the unfavourable declining condition relating to the SMP, are cited as coastal squeeze – will SMP policy contribute to further SSSIs falling into unfavourable condition and address the causal factors of existing units which are in unfavourable declining condition (due to coastal management) wherever possible?</p>	<p>The cliffs in this Management Area fall within the BAP classification as Maritime Cliffs and Slopes. The policy however maintains the status quo in allowing the cliffs to naturally erode and maintain the dynamism required for this habitat.</p> <p>The Management Area is therefore considered to have an overall minor positive effect for this issue.</p> <p>The cliffs in this area are dependent on erosion to maintain their condition. The policy relevant to this feature maintains such processes.</p> <p>The Management Area is therefore considered to have a minor positive effect on this issue.</p>

ISSUE	DETERMINATION
<p><b>ISSUE - Maintenance of environmental conditions to support biodiversity and the quality of life</b></p>	
<p><b>ISSUE - Maintenance of balance of coastal processes on a dynamic linear coastline with settlements at estuary mouths</b></p>	
<p>The Suffolk coast is a complex system of dynamic and static shingle, beach frontages, urban areas and estuary mouths. The system has been maintained in recent years to provide relative stability to the system in order to protect coastal assets. The effects of sea level rise require a more strategic approach to shoreline management, but the relative stability of the plan area needs to be maintained albeit within a dynamic context.</p> <p>Will SMP policy maintain an overall level of balance across the Suffolk coast in regard to coastal processes, which accepts dynamic change as a key facet of overall coastal management?</p> <p>Will SMP policy increase actual or potential coastal erosion or flood risk to communities in the future?</p> <p>Will SMP policy commit future generations to spend more on defences to maintain the same level of protection?</p> <p>Does the policy work with or against natural processes?</p>	<p>The Management Area provides protection for established urban frontages and provides a natural NAI approach in front of Pakefield Cliffs, seeking to provide a level of balance. Overall, the Management Area will have a minor positive benefit in regard to this issue.</p> <p>The Management Area will not lead to increased levels of erosion or flood risk. The overall effect therefore is neutral.</p> <p>The HTL policies within this Management Area will protect the communities of Lowestoft but, such defences will need to be increased in regard to SLR. The effect is considered therefore to be minor negative.</p> <p>The overall intent of the Management Area is to maintain balance between protection of a fixed urban area and dynamism of a natural frontage. The overall effect is therefore minor positive.</p>
<p><b>ISSUE - Maintenance of the values of the coastal landscape &amp; Area of Outstanding Natural Beauty (AONB)</b></p>	
<p>The maintenance of the coastal landscape in the face of coastal change on a dynamic coast and estuary system. A key factor being the potential change in the landscape in response to shifts in coastal habitat composition and form.</p> <p>Will SMP policy maintain a range of key natural, cultural and social features critical to the integrity</p>	<p>The Management Area provides a balance of natural and anthropogenic features in</p>

ISSUE	DETERMINATION
<p>of the Suffolk coastal landscape?</p> <p>Will SMP policy lead to the introduction of features which are unsympathetic towards the character of the landscape?</p>	<p>this area and the effect is therefore minor positive.</p> <p>No new features are proposed by this policy.</p>
<p><b>ISSUE - Protection of historic and archaeological features on a dynamic coastline</b></p>	
<p>The Suffolk coast contains a range of historic settlements and harbours typically located on the open coast and mouths of estuaries (for example, Southwold - Walberswick, Aldeburgh, Shingle Street etc). These settlements may be at higher levels of risk from coastal flooding as a result of climate change or levels of erosions along the coast – will SMP policy maintain the fabric and setting of key historic listed buildings and conservation areas?</p>	<p>Policy in this Management Area will continue to maintain such features. In particular, the intent is to protect Pakefield Church.</p> <p>Therefore there is an overall minor positive benefit.</p>
<p><b>ISSUE - Protection of coastal communities and culture</b></p>	
<p><b>Protection of coastal towns and settlements</b></p>	
<p>The Core Strategies of Waveney Council and Suffolk Coastal District Council identify key coastal settlements which are important to the quality of life locally and the integrity of the economy of the area. These settlements are likely to face a higher level of risk from coastal flooding and loss due to erosion in response to sea level rise. There is a need therefore to ensure that the settlements below are protected for the duration of the SMP.</p>	<p>The HTL policies for defended areas provide sustainable defence and so the policy has a minor positive benefit.</p> <p>Not relevant to the character of the area..</p>
<p>Will SMP policy maintain key coastal settlements in a sustainable manner, where the impact of coastal flooding and erosion is minimised and time given for adaptation?</p> <p>Will SMP policy protect the coastal character of communities which have historically been undefended?</p>	<p>The HTL policies for defended areas provide sustainable defence and so the policy has a minor positive benefit.</p> <p>Not relevant to the character of the area..</p>
<p><b>Protection of key coastal infrastructure</b></p>	

ISSUE	DETERMINATION
<p>The Suffolk coast is served by a network of roads along the coast (primarily the A12) and a network of smaller roads to coastal settlements. The maintenance of these roads is important in regard to the utility it provides for the coastal economy and quality of life etc. The roads themselves are of secondary importance (they could be replaced), the important feature is the actual access provided as a social and economic function. The potential exists for this network to be affected by coastal processes – will SMP policy maintain road based transport connectivity between settlements on the Suffolk coast?</p> <p>The Suffolk coast is visited by a large number of tourists and residents every year. Access to and along the coast is provided by a range of coastal footpaths (the primary footpath being the Suffolk Coasts and Heaths Footpath). The provision of this access, rather than the actual footpaths themselves supports a range of values which contribute to the quality of life and local economy of the Suffolk coastal area. Paths are often located close to the foreshore in areas at risk from coastal erosion (or within potential areas for managed realignment) – will SMP policy maintain or enhance levels of access along or to the Suffolk coast.</p>	<p>The Management Area HTL will provide ongoing defence of local infrastructure in Lowestoft and therefore provides minor positive benefits.</p>
<p>The Suffolk coast is visited by a large number of tourists and residents every year. Access to and along the coast is provided by a range of coastal footpaths (the primary footpath being the Suffolk Coasts and Heaths Footpath). The provision of this access, rather than the actual footpaths themselves supports a range of values which contribute to the quality of life and local economy of the Suffolk coastal area. Paths are often located close to the foreshore in areas at risk from coastal erosion (or within potential areas for managed realignment) – will SMP policy maintain or enhance levels of access along or to the Suffolk coast.</p>	<p>The HTL policy will maintain coastal footpath in urban areas and would not lead to the loss of any access to Pakefield Cliffs. Opportunities to realign the footpath would be considered if required.</p> <p>The Management Area provides minor positive benefits</p>



#### 4.1.8 KES 05 - KESSINGLAND

<b>Location reference:</b>	<b>KESSINGLAND (CH.10 TO 13.5)</b>
<b>Management Area reference:</b>	<b>KES 05</b>
<b>Policy Development Zone:</b>	<b>PDZ 1</b>

\* Note: Predicted shoreline mapping is based on a combination of monitoring data, analysis of historical maps and geomorphological assessment with allowance for sea level rise. Due to inherent uncertainties in predicting future change, these predictions are necessarily indicative. For use beyond the purpose of the shoreline management plan, reference should be made to the baseline data.

The following descriptions are provided to assist interpretation of the map shown overleaf.

##### 100 year shoreline position:

The following maps aim to summarise the anticipated position of the shoreline in 100 years under the two scenarios of “With Present Management” and under the “Draft Preferred Policy” being put forward through the Shoreline Management Plan.

-  In some areas the preferred policy does not change from that under the existing management approach. In some areas where there are hard defences this can be accurately identified. In other areas there is greater uncertainty. Even so, where the shoreline is likely to be quite clearly defined by a change such as the crest of a cliff the estimated position is shown as a single line.

- Where there is a difference between With Present Management and the Draft Preferred Policy this distinction is made in showing two different lines:

-  With Present Management.
-  Draft Preferred Policy.

-  In some areas, the Draft Preferred Policy either promotes a more adaptive approach to management or recognises that the shoreline is better considered as a width rather than a narrow line. This is represented on the map by a broader zone of management:

##### Flood Risk Zones

 General Flood Risk Zones. The explanation of these zones is provided on the Environment Agency’s web site [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk). The maps within this Draft SMP document show where SMP policy might influence the management of flood risk.

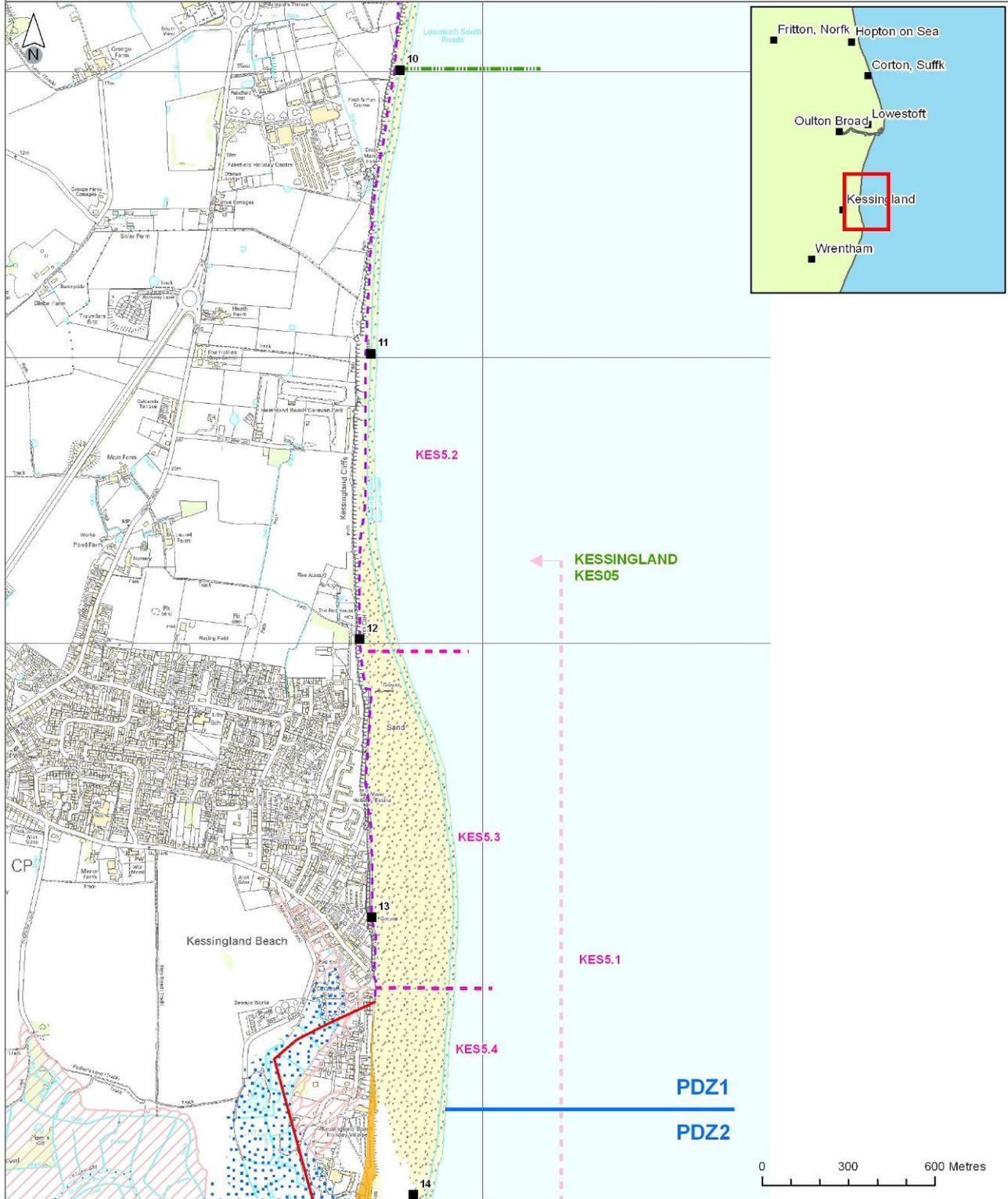
 Indicate areas where the intent of the SMP draft policy is to continue to manage this risk.

 Indicate where over the 100 years the policy would allow increased risk of flooding.

The maps should be read in conjunction with the text within the Draft SMP document.

### Policy Development Zone 1 - Lowestoft Ness to Benacre Ness Management Area 5 - Kessingland (Ch 10 to 13.5)

Key:   
— Policy Development Zones   
- - - Management Areas   
- - - Policy Units   
 Chainage   
 Scheduled Monuments



100 yr shoreline position:

- - - Draft preferred policy would be the same as With Present Management
- With Present Management where this differs from the Draft Preferred Policy
- Draft Preferred Policy where this differs from the With Present Management
- Indicative shoreline zone under Draft Preferred Policy

Note. Further explanation of these lines and zones is provided on the previous page.

- Existing Indicative EA Flood Risk Zone
- EA Flood Risk Zone where Draft SMP policy is for continued management of defence.
- EA Flood Risk Zone 2 where under Draft SMP policy there would be increased probability of flooding.

## SUMMARY OF PREFERRED PLAN RECOMMENDATIONS AND JUSTIFICATION

**PLAN:** The intent would be for no active management of detriment to Benacre Ness. Notwithstanding this aim, the plan is to sustain the core features of Kessingland. As the influence of the Ness moves north, the intent would be to provide additional protection to the southern frontage of the village. The approach to this defence would be associated with the detailed management for the area to the south (BEN 06).

PREFERRED POLICY TO IMPLEMENT PLAN:	
<b>From present day</b>	Maintain existing defences as required.
<b>Medium term</b>	Maintain existing as required.
<b>Long term</b>	Maintain and reinforce existing defences and improve defence to the southern end of Kessingland.

## SUMMARY OF SPECIFIC POLICIES

Policy Unit		Policy Plan			Comment
		2025	2055	2105	
KES 5.1	Benacre Ness	NAI	NAI	NAI	This unit refers to the Ness and as such overlaps other units.
KES 5.2	Kessingland Cliff	NAI	NAI	NAI	
KES 5.3	Kessingland Village	HTL	HTL	HTL	
KES 5.4	Kessingland South	HTL	HTL	HTL	Upgrade defence as Ness moves north.
Key: HTL - Hold the Line, A - Advance the Line, NAI – No Active Intervention * HR – Hold the Line on a retreated alignment, MR – Managed Realignment					

## CHANGES FROM PRESENT MANAGEMENT

Clarification of previous policy

## IMPLICATION WITH RESPECT TO BUILT ENVIRONMENT

Economics		by 2025	by 2055	by 2105	Total £k PV
<b>Property</b>	Potential NAI Damages/ Cost £k PV	0	0	359	359
	Preferred Plan Damages £k PV	0	0	0	0
	Benefits £k PV	0	0	359	359
	Costs of Implementing plan £k PV	0	0	109	109

### Strategic Environmental Assessment summary table for preferred policy MA KES 05

This is an excerpt from the **Strategic Environmental Assessment** undertaken for the Suffolk SMP – for the full assessment, please refer to **Appendix F (Strategic Environmental Assessment: Environmental Report)**.

ISSUE	DETERMINATION
<p><b>ISSUE - Maintenance and Enhancement of Biodiversity on a Dynamic Coastline</b></p> <p>The interaction between the maintenance of designated freshwater or terrestrial habitat protected by defences and designated coastal habitat seaward of defences – will SMP policy provide a sustainable approach to habitat management?</p>	<p>The only designated site in this Management Area is Kessingland Cliffs (Pakefield to Easton Bavents SSSI), the policy in front of this site is one of NAI. This policy would maintain an active face on this site (as existing). The remaining policies are for HTL in front of Kessingland.</p> <p>The Management Area is therefore considered to have an overall neutral effect for this issue.</p>
<p>Coastal squeeze has the potential to lead to the loss of UK BAP (priority &amp; broad) coastal habitat. Alternative sites for habitat creation are required to help offset the possible future natural losses – will there be no net loss of UK BAP habitat within the SMP timeline up to 2100?</p>	<p>The cliffs in this Management Area fall within the BAP classification as Maritime Cliffs and Slopes or Coastal Vegetated Shingle and Coastal Sand Dunes. The policy however maintains the status quo in allowing undefended frontage to behave naturally (via an NAI policy). Management of the Ness will lead to loss of dunes and shingle habitat. This feature is to be allowed to function naturally. Defence of the area to the south may constrain new development of dunes in this area. However, this defence is required for the community at Kessingland.</p> <p>Therefore, the Management Area is considered to have a minor negative effect on this issue.</p>
<p>Coastal squeeze has the potential to lead to coastal SSSIs falling into unfavourable condition; for example, approximately 50 of 100 SSSI units assessed at the Minsmere-Walberswick Heaths and Marshes SSSI are in unfavourable condition, although the majority of these (36) are in an unfavourable recovering condition. Factors attributable to the unfavourable declining condition</p>	<p>The SSSI in this Management Area is designated for sea cliffs (geological) and for vegetated shingle. The policy however maintains the status quo in allowing undefended frontage to behave naturally (via an NAI policy). The HTL policies to the south may lead to the loss (through squeeze) of shingle habitat – however this defence</p>

ISSUE	DETERMINATION
<p>relating to the SMP are cited as coastal squeeze – will the SMP policy contribute to further SSSIs falling into unfavourable condition and address the causal factors of existing units which are in unfavourable declining condition (due to coastal management) wherever possible?</p>	<p>is required for the community at Kessingland. Therefore, the Management Area is considered to have a minor negative effect on this issue.</p>
<p><b>ISSUE - Maintenance of environmental conditions to support biodiversity and the quality of life</b></p>	
<p><b>ISSUE - Maintenance of balance of coastal processes on a dynamic linear coastline with settlements at estuary mouths</b></p>	
<p>The Suffolk coast is a complex system of dynamic and static shingle, beach frontages, urban areas and estuary mouths. The system has been maintained in recent years to provide relative stability to the system in order to protect coastal assets. The effects of sea level rise require a more strategic approach to shoreline management, but the relative stability of the plan area needs to be maintained albeit within a dynamic context.</p>	<p>The Management Area provides protection for established urban frontages and provides a natural NAI approach in front of the Kessingland Cliffs. Therefore the Management Area seeks to provide a level of balance.</p>
<p>Will SMP policy maintain an overall level of balance across the Suffolk coast in regard to coastal processes, which accepts dynamic change as a key facet of overall coastal management?</p>	<p>Overall, the Management Area will, however, have a minor negative effect due to the loss of shingle/dune habitat through squeeze.</p>
<p>Will SMP policy increase actual or potential coastal erosion or flood risk to communities in the future?</p>	<p>The Management Area will not lead to increased levels of erosion or flood risk. The overall effect therefore is neutral.</p>
<p>Will SMP policy commit future generations to spend more on defences to maintain the same level of protection?</p>	<p>The HTL policies within this Management Area will protect the communities of Lowestoft; however, such defences will need to be increased in regard to SLR. The effect is considered therefore to be minor negative.</p>
<p>Does the policy work with or against natural processes?</p>	<p>The overall intent of the Management Area is to maintain balance between protection of a fixed urban area and dynamism of a natural frontage. The overall effect is therefore minor positive</p>
<p><b>ISSUE - Maintenance of water supply in the coastal zone</b></p>	

ISSUE	DETERMINATION
<p>Agriculture on the Suffolk coast is dependent on the maintenance of a freshwater supply from groundwater aquifers. The delivery of this supply is threatened by intrusion of salt water into freshwater aquifers and from the loss of boreholes at risk from erosion – will SMP policy maintain structures to defend water abstraction infrastructure and to avoid any exacerbation of levels of saline intrusion into freshwater aquifers.</p>	<p>The HTL policy adjacent to Kessingland will provide a minor positive contribution to the defence of freshwater aquifers and infrastructure.</p>
<p><b>ISSUE - Maintenance of the values of the coastal landscape &amp; Area of Outstanding Natural Beauty (AONB)</b></p>	
<p>This issue is regarding the maintenance of the coastal landscape in the face of coastal change on a dynamic coast and estuary system. A key factor being the potential change in the landscape in response to shifts in coastal habitat composition and form.</p>	
<p>Will SMP policy maintain a range of key natural, cultural and social features critical to the integrity of the Suffolk coastal landscape?</p>	<p>The Management Area provides a balance of natural and anthropogenic features in this area and the effect is therefore minor positive.</p>
<p>Will SMP policy lead to the introduction of features which are unsympathetic towards the character of the landscape?</p>	<p>No new features are proposed by this policy.</p>
<p><b>ISSUE - Protection of historic and archaeological features on a dynamic coastline</b></p>	
<p>The Suffolk coast contains a range of historic settlements and harbours typically located on the open coast and mouths of estuaries (for example, Southwold - Walberswick, Aldeburgh, Shingle Street etc). These settlements may be at higher levels of risk from coastal flooding as a result of climate change or levels of erosions along the coast – will SMP policy maintain the fabric and setting of key historic listed buildings and conservation areas?</p>	<p>Policy in this Management Area will continue to maintain such features, therefore there is an overall minor positive benefit.</p>
<p>The coastal zone in Suffolk contains a range of archaeological and palaeo-environmental features which may be at risk from loss from erosion within the timeline of the SMP – will SMP policy provide sustainable protection of archaeological and palaeo-environmental features (where appropriate) and ensure the provision of adequate time for the survey of archaeological sites where loss is expected.</p>	<p>The Management Area provides protection for urban areas and features within them. The policy of NAI at Pakefield Cliffs encourages a fresh face on these features and provides a natural timeline for investigation and study.</p> <p>The Management Area provides minor positive benefits.</p>

ISSUE	DETERMINATION
<p>The coastal zone in Suffolk contains a range of archaeological and palaeo-environmental features which may be at risk from erosion within the timeline of the SMP – will SMP policy provide sustainable protection of archaeological and palaeo-environmental features (where appropriate) and ensure the provision of adequate time for the survey of archaeological sites where loss is expected.</p>	<p>The Management Area provides protection for urban areas and features within them. The policy of NAI at Kessingland Cliffs encourages a fresh outlook on these features and provides a natural timeline for investigation and study. The Management Area provides minor positive benefits.</p>
<p><b>ISSUE - Protection of coastal communities and culture</b></p>	
<p><i>Protection of coastal towns and settlements</i></p>	
<p>The Core Strategies of Waveney Council and Suffolk Coastal District Council identify key coastal settlements which are important to the quality of life locally and the integrity of the economy of the area. These settlements are likely to face a higher level of risk from coastal flooding and loss due to erosion in response to sea level rise. There is a need therefore to ensure that the settlements below are protected for the duration of the SMP</p> <p>Will SMP policy maintain key coastal settlements in a sustainable manner, where the impact of coastal flooding and erosion is minimised and time given for adaptation?</p> <p>Will SMP policy protect the coastal character of communities which have historically been undefended?</p>	<p>The HTL policies for defended areas provide sustainable defence and so the policy has a minor positive benefit.</p> <p>Not relevant to the character of Kessingland.</p>
<p><i>Protection of key coastal infrastructure</i></p>	
<p>The Suffolk coast is visited by a large number of tourists and residents every year. Access to and along the coast is provided by a range of coastal footpaths (the primary footpath being the Suffolk Coasts and Heaths Footpath). The provision of this access, rather than the actual footpaths themselves supports a range of values which contribute to the quality of life and local economy of the Suffolk coastal area. Paths are often located close to the foreshore in areas at risk from coastal erosion (or within potential areas for managed realignment) – will SMP policy</p>	<p>The HTL policy will maintain coastal footpath in urban areas and would not lead to the loss of any access in front of Kessingland Cliffs.</p> <p>Therefore the Management Area has a minor positive benefit.</p>

<b>ISSUE</b>	<b>DETERMINATION</b>
maintain or enhance levels of access along or to the Suffolk coast.	

APPROPRIATE ASSESSMENT - PREFERRED PLAN MA 05

This is an excerpt from **Appendix I** of the **Appropriate Assessment** undertaken for the Suffolk SMP – for a full description of the potential effects and any avoidance measures, mitigation or compensation required as a result of the policies, please refer to **Appendix J (Appropriate Assessment Report)**.

Annex I habitats (as a primary reason for selection): Coastal Lagoons (Priority feature*)	
<b>Benacre to Easton Barents Lagoons SAC site features</b>  <b>Sub Feature(s)</b> Shingle ridges along the coastline in front of and to the south of Kessingland. Saline lagoons (priority habitat) to south.	<b>Sensitivity</b> Loss of habitat due to inappropriate coastal management (subject to natural change)
<b>Conservation Objective</b> The conservation objective is, subject to natural change, to maintain*, in favourable condition, the saline lagoon feature.  * maintenance implies restoration if the feature is not currently in favourable condition.	

**KES 5.3 to 5.4**

**Potential effect of policy:**

This Management Area has the potential to adversely affect site integrity to the adjacent SAC through interference to the processes driving the migration of Benacre Ness. The SMP provides a specification of the need to ensure that the works required to implement the Hold the Line policy in KES 5.4 are designed with the requirement to avoid such interference. It is considered then that the policies coupled with this measure would not have an adverse effect on the integrity of any international site.

**Implications for the integrity of the site:**

No adverse effect, subject to mitigation for Policy KES 5.4.

**Avoidance measure:**

An active requirement to prevent measures to hold the line (HTL) in Policy 5.4 to avoid an interruption on the processes driving the migration of Benacre Ness. The works on the defences behind Benacre Ness should be designed so as not to an adverse effect and the integrity of the site and will anyway be subject to an Appropriate Assessment at scheme level.

