



**Suffolk SMP2 Sub-cell 3c**  
Policy Development Zone 7 – Cobbold's Point to Felixstowe Port  
(south)

Suffolk Coastal District Council/Waveney District  
Council/ Environment Agency

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Version 9



## CONTENTS

		Page
4.7	POLICY DEVELOPMENT ZONE 7	1
4.7.1	<b>OVERVIEW</b>	3
4.7.2	<b>PRESENT MANAGEMENT</b>	10
4.7.3	<b>DISCUSSION AND DETAILED POLICY DEVELOPMENT</b>	14
4.7.4	<b>MANAGEMENT AREA 19</b>	17
4.7.5	<b>MANAGEMENT AREA 20</b>	25



## 4.7 POLICY DEVELOPMENT ZONE 7

**Cobbold's Point to Landguard Point  
Chainage: 73 to 78.5.**



**Shoreline Management Plan Sub Cell 3C - Lowestoft Ness To Felixstowe Landguard Point**  
**Baseline Location Map**  
**Policy Development Zone 7 - Cobbold's Point to Felixstowe Port (South)**



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



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#### 4.7.1 OVERVIEW

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

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

This zone fronts the important town of Felixstowe. In the north there is residential property on the cliff above Cobbold's Point. Between the point and the pier is a mix of residential and commercial sea front properties and amenity areas. To the south of the pier is an amenity promenade, sea front commercial establishments and, behind this, high density residential areas. Further south is more open ground with high density residential and commercial property behind. To the rear of this area is one of the key aspects of the zone, the port of Felixstowe, together with Landguard Fort and two isolated properties.

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

Landguard Fort, with all its related defensive works is a nationally important site, protected as a scheduled monument. In addition there is a Martello Tower which is of heritage value. The whole frontage has a strong cultural value as a coastal resort. Modern day amusements and recreational facilities have been built along the shore with the pier, Cliff Gardens and the Felixstowe Leisure Centre forming the focus of this. The beach use is also important in this regard.

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

Landguard Common is a SSSI, predominantly sand and shingle spit which protects the northern entrance to the ports of Harwich and Felixstowe. It consists of a loose shingle foreshore, which is backed by a stabilised vegetated beach, earth banks and scrub. Pioneer shingle plants and vegetated shingle beaches are highly fragile and are a nationally scarce habitat type. This site is also of some ornithological interest as a landfall site for passage migrants and for breeding shorebirds, while the bare shingle is also used by nesting Little Tern and Ringed Plover.

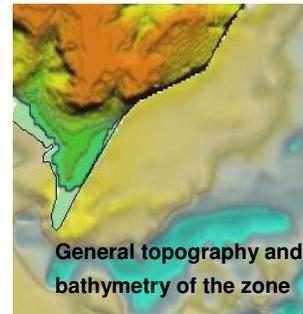
##### **STAKEHOLDER OBJECTIVES** (the development of objectives is set out in Appendix B based on objectives listed in Appendix E)

- To improve Felixstowe as a viable commercial centre and tourist destination in a sustainable manner;
- To protect the Port of Felixstowe and provide opportunities for its development;
- To develop and maintain the Blue Flag beach;
- To maintain flood protection to residential properties;
- To maintain a high standard of ongoing defence to the area;
- To maintain existing facilities essential in supporting ongoing regeneration;
- To integrate maintenance of coastal defence, while promoting sustainable development of the hinterland;
- To maintain the historical heritage of the frontage; and
- To maintain biological and geological features of Landguard Common SSSI in a favourable condition.

## DESCRIPTION

The zone extends from the headland at Cobbold's Point along the Felixstowe frontage around the peninsular of Landguard Point and up to the southern boundary of the Port of Felixstowe.

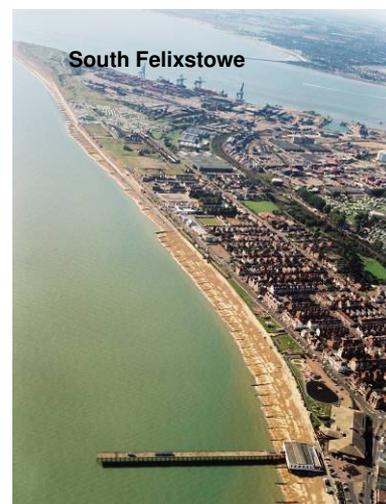
The frontage comprises the heavily defended headland of Cobbold's Point and a shallow bay along the Felixstowe frontage, defended by seawalls and concrete, timber and rock groynes. To the south of Felixstowe is the undefended vegetated shingle of Landguard Common, which forms a well defined peninsula. Landguard Point is at the tip of this peninsula and is the southern boundary of this zone and the SMP. On the harbour side of the peninsula the frontage is defended with sea walls, a rock groyne and timber groynes. The low lying area of Landguard Common is predominantly shingle beach and vegetated shingle dunes. To the south of this point is the entrance to Felixstowe and Harwich docks, which are of national and international economic importance.



At the northern end of this zone the high topography of Cobbold's Point continues south before falling to the central areas of the town. To the north of the pier the frontage comprises a seawall, promenade and coastal access road. There are a number of large residential properties and businesses along this road. To the south of the pier the frontage varies slightly in that commercial and residential properties are more densely distributed on low lying land.

Along the northern extent of the Felixstowe frontage there is a very narrow intertidal foreshore, with the high tide mark against the sea wall. The beach widens along the central area of the frontage to the immediate north and south of the pier. A new scheme comprising rock groynes and beach nourishment has recently been implemented along this frontage, from just north of the pier to Landguard Common. Due to the control at Landguard Point there is an abundance of shingle retained to the south of Felixstowe. This structure maintains a navigable channel to the estuary.

The Blue Flag beach at Felixstowe is an integral feature of the town for both local residents and tourists. It has, however, suffered from erosion in recent years and its maintenance forms an important feature of the present strategy plan for coastal defence. As well as being at risk from coastal erosion, there is also a significant flood risk to the low lying, built up areas of southern Felixstowe which flooded in 1953. The existing flood defences have been constructed at the rear of the promenade to improve the visual aspect and allow easy access to the foreshore. Further south the defence wall runs along the shingle crest before returning inland to close with the bank behind Landguard Common, providing flood defence to residential properties and the port.



To the south of the town the shingle spit of Landguard Common provides key environmental and historical value to this zone. There are nationally important features of biological and geological diversity at this site, giving it a SSSI designation. The historic Landguard Fort was built in 1718 to protect the port of Harwich and is also the site of the last opposed invasion of England in 1667. This site is now a museum as well as a bird observatory.

The timber groyne protruding out to sea is met by a concrete sea wall. This wall is partly exposed along the tip of the peninsula but is buried beneath shingle along the frontage leading up towards Landguard Fort and the southern extent of the port. The beach along this frontage appears relatively healthy, with material coming from the north. Two residential properties are located along this frontage, as well as a number of historical pillboxes.



Landguard Fort is set back from the frontage, with pedestrian access continuing to the foreshore.



## PHYSICAL PROCESSES

### TIDE AND WATER LEVELS (mODN)

Location	LAT	MLWS	MLWN	MHWN	MHWS	HAT	Neap range	Spring range	Correction CD/ODN
Felixstowe Pier		-1.55	-0.85	1.05	1.75		1.90	3.30	-1.95
Harwich	-2.22	-1.62	-0.92	1.38	1.98	2.38	2.30	3.60	-2.02

### Extremes(mODN)

Location:	1:1	1:10	1:25	1:50	1:100	1:250	1:500	1:1000
Felixstowe Pier	2.65	3.01	3.17	3.38	3.54	3.69	3.9	4.06
Harwich	2.02	2.56	2.78	2.94	3.11	3.32	3.49	3.65

### WAVE CLIMATE

Along the Felixstowe frontage the dominant offshore wave directions are from the northeast and southwest, although there can be relatively infrequent but high energy waves from the southeast. Along this section of the coastline nearshore wave climate is strongly influenced by the wider, shallower nearshore zone of London Clay. The net energy is more to the east southeast, giving the relatively stable shape of the overall bay. From within the estuary the highest frequency of wave approach to Harwich is from the south west, though these waves are small (95% with  $H_s < 2\text{m}$ ). Larger offshore waves approach from a north-easterly direction. However, the shingle spit provides some protection to Harwich and Felixstowe ports from these waves. As waves propagate inshore they are modified by shallow water processes as depth of water decreases.

### TIDAL FLOW

Flows are obviously affected by the estuary at the southern end of the zone. The control at Landguard Point interacts with this to create a very distinct anti-clockwise eddy in this local area. Generally, flows across the frontage tend to be relatively low with rates to the south southwest on the flood and to the north northeast on the ebb, with velocities of the order of 0.6m/sec.

The flow in and out of the Stour/Orwell system, combined with the shape of the coast between Felixstowe and Harwich, leads to complicated patterns of tidal currents. On the flood tide, water entering the Harwich harbour passes along the Felixstowe frontage before curving sharply round Landguard Point, leading to a long eddy on the harbour side of the spit. The fastest flood current at the harbour mouth on a mean spring tide is approximately 0.7m/s. On the ebb tide, the outflow from the harbour initially heads eastward in the inner part of the channel then curves to the north east. The ebb currents are strongest at the east of the mouth at Landguard Point, with a peak speed of 1.4m/s.

## PROCESSES

### Control Features:

The main physical control features of the shoreline are Cobbold's Point and Landguard Point, which influence sediment drift. In the nearshore area the overall geomorphology is influenced by the relatively high levels of London Clay which act to create a wide nearshore platform modifying wave energy. In the nearshore to offshore areas are the Gunfleet, Cork Sands and Shipwash banks, all of which act to provide a degree of shelter or wave modification to the frontage. The headland at Cobbold's Point is a prominent hard point along this zone and studies have concluded that shoreline sediments moving from the north tend to be diverted into the nearshore area. At Landguard Point the defence structure retains material, maintaining the navigable harbour and creating vegetated shingle banks at Landguard Common. On a more local scale the defences at Felixstowe to the south of the pier have been aligned such that a small headland has been created within the bay at Manor Terrace. This feature appears to have some influence on shoreline sediment drift to the south, constraining

material moving back to the north.

#### **Existing Defences:**

To the north of the zone, two fishtail groynes protrude from the Cobbold's Point headland. While the structural integrity of these defences may start to fail typically within the second epoch of the SMP (probably towards the end of the 20 to 50 year period), their influence on the coast is assumed to continue during the SMP period.

The Central Felixstowe frontage to the north of the pier is protected by a sea wall and numerous concrete, timber and rock groynes. These groynes are mostly in a poor condition, leaving the sea walls vulnerable to the fluctuating beach levels, particularly to the immediate south of Cobbold's Point. At south Felixstowe, rock armour had been placed as emergency works in 2006. However, there is currently a scheme in place (2008) replacing the defence over this frontage with beach recharge and rock 't-head' groynes. To the rear of the coast protection structures, between the Town Hall and Manor End, is a secondary flood wall set back just behind the promenade or back to the road in other areas. To the south of Manor Terrace a concrete wall provides flood defence. This wall, initially tying into the coast protection works at Manor End, returns to tie in to the earth flood bank set to the rear of Landguard Common.

The defences at Landguard Point are in good condition and appear to be well protected by the mass of shingle to the north of the structure. The southern end of the peninsula is controlled by a timber and steel groyne and concrete step work. Although parts of the apron and timber groyne have broken away, the defences appear to be structurally integral. Rock armour has been placed at the toe for additional protection. Moving around the tip, a sheet piled concrete wall and a rock groyne separate the stepped wall and the concrete revetment with a wave return wall that continues along the frontage up to the port. The southern extent of this concrete revetment is fronted by a series of timber groynes.

There is no information available suggesting a residual life for these structures.

#### **Processes:**

Coastal processes over the frontage are dominated by the overall geomorphological control imposed by the high London Clay nearshore area, over which there is a veneer of mobile sediments. At the shore, drift from the north has a tendency to be diverted away from the shore by the prominence of Cobbold's Point, although such drift is still considered to be important in feeding the general source of sediment in the nearshore area. This nearshore sediment both feeds and is fed by sediments from the shoreline. The actual shoreline drift potential across the Cobbold's Point frontage is normally very weak (some 3000m<sup>3</sup>/yr), although it has been identified that during certain years this may increase significantly.

Analysis of sediment drift over the whole frontage shows the same sort of significant year on year variation, dependent on overall wave climate. Several studies have highlighted this sensitivity. In average terms, however, it has been shown that there is a net drift south from Cobbold's Point towards the central section by the pier and an average net drift north from Manor Terrace. The Black and Veatch model in their strategy report showed that material came from the offshore and tended to move north to a sink point of the pier. However, during any specific event this overall behaviour can change dramatically. A strong north east offshore sea state would result in the whole frontage being mobilised in a southerly direction. Sediment under such conditions would be removed from the pier location towards Landguard.

Landguard Common is considered to be quite a stable frontage, able to adjust quite quickly to net

wave energies. Material carried south to Landguard will tend to remain in this area due to the slight promontory at Manor End. A significant proportion of shingle reaching Landguard Point from the general southerly drift is carried around the beach on the harbour side of the peninsula. Some of this material can be carried to the most southerly berth of the port where small amounts of dredging are required to maintain a suitable operating depth. The harbour mouth marks a divide in the littoral transport system with little or no beach material crossing the channel. Studies have shown that some of the material moving south from Felixstowe is carried offshore by the strong ebb current around Landguard Point.

The Landguard Point structure was constructed in 1867 to restrict and control the growth of the point across and into the estuary. Clearly this structure still acts in this function maintaining vital navigation.

Overall, therefore, the system of the zone is seen as being a relatively closed system, with movement cross shore. At the shore there can be periods of significant beach drawdown and movement, but with a tendency for beaches to be able to reform at the centre of the bay by the pier. Along the shore, sediment carried to Landguard Common will tend to remain there unless there is a major storm which may remobilise material along the frontage. The management of the frontage has relied on an extensive groyne system which has in effect acted to limit the excess of longshore movement under specific events.

*Unconstrained Scenario:*

The unconstrained scenarios assumed 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.

Along this zone the consequences would be significant in certain areas. With no defences at Cobbold's Point, the natural headland will still act as a barrier to material drifting south, although with no fishtail groynes there may be a minor increase in material moving south around the headland. The Felixstowe frontage would come under pressure to form a stable bay and would continue to retreat, particularly to the south of the pier where the coastline protrudes forming a small headland. This would impose pressure on the coast to the south and there would be extensive erosion at Manor End. Without the defences at Landguard Point, much of Landguard Common would be lost as the mouth of the estuary naturally realigns. This would significantly reduce the length of coastline in this zone, leaving Landguard Fort and, potentially, southern Felixstowe at risk of erosion and flooding.

### 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)*

<b>Location</b>	<b>Base Rate (m/yr)</b>	<b>Notes</b>	<b>100yr. Erosion range (m)</b>
Cobbold's Point	0.8	Erosion at toe relatively small, but resulting in significant landslip and retreat at the crest.	Locally between 70 and 150
Felixstowe Beach	0.3	Erosion influenced by Cobbold's Point.	10 to 50
South Felixstowe	1.0	Erosion dominated by surrounding pressure to naturally realign.	20 to 100
Landguard Common	0.1	Dominated by the presence of defences at Landguard Point. This erosion would be greater to the southern end of the frontage in the absence of this structure.	15 to 40
Landguard Point	2.0	Significant loss of material if defences are lost.	20 to 200
Landguard Fort	4.0	Rapid erosion of the shingle spit if defences are not maintained.	Locally between 200 and 340.
Felixstowe Port	0.0	Port will continue to be protected.	0

## 4.7.2 PRESENT MANAGEMENT

SMP1			REVIEWED POLICY		
MU	LOCATION	POLICY	REF	LOCATION	POLICY
FEL 3	North of Dip to Manor End	HTL	S12	SCDC Frontage	HTL
FEL 4	Manor End to Landguard Point	HTL	S12	EA Frontage	HTL
			S12	Landguard Fort	NAI
FEL 5	Felixstowe Port	HTL	S12	Port of Felixstowe	HTL

**References:**

S12

*Southern Felixstowe Coastal Strategy Review: Strategic Assessment*

**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. Defences would not be maintained or improved to improve standards of protection.

The headland to the north of this zone would remain a prominent feature along this section. Although the defences at the base of this headland are likely to fail under No Active Intervention (within the next 50 years), the headland is likely to influence the Felixstowe frontage in a manner similar to present.

With no major sediment supply to this frontage, no further work to the defences and sea level rise would leave the defences vulnerable leading to increased dilapidation of the groynes and sea wall. Erosion of the land behind the defences would occur at a rapid rate to allow the coast to naturally realign once structural failure of the sea wall occurs within the middle epoch (20 to 50 years; potentially earlier at specific locations). This realignment process will be most significant at Manor End where there is likely to be rapid set back with substantial loss of the promenade and numerous residential and commercial properties. There would be loss of the cliff gardens and coastal access road along the frontage north of the pier, together with loss of properties and amenity value. Initial loss could occur within 20 to 50 years, this potentially including the Spa Pavilion. There would be continuing losses of properties behind the promenade over subsequent epochs.

To the southern end of the zone the undefended Landguard Common would remain unchanged, providing the defences at Landguard Point were intact. Failure of the defences here would have a significant impact on the alignment of the coastline and movement of material along this section. With no control point at the tip of the peninsula, material will be lost to the mouth of the harbour. This would significantly reduce the width of the shingle beach at Landguard Common as well as the beach further north at Manor Terrace. This increase in material drifting beyond this point is also likely to have an effect on the continued operations of Felixstowe and Harwich Ports. The beach on the harbour side of the spit may also reduce in width due to a lack of material coming around Landguard Point. This increases the risk of erosion to Landguard Fort and the two properties further south.

Failure of defences along the frontage would result in increased flood risk and in eventual retreat of the coast to the secondary flood wall. This would result in major flooding to the low lying area of South Felixstowe and the port.

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

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

The present policy is to 'hold the existing line' as defined in SMP1 (1998) along the Felixstowe frontage. 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 the defences along this frontage varies between 1:150 and 1:200 year according to the latest NFCDD. However, there is no information on the defences at Landguard Point. By maintaining the defences to the present standards, the coastal processes along this section would have a similar impact as at present.

Under the present management the fishtail groynes at Cobbold's Point would continue to influence the northern extent of the frontage, hence the need to improve defences at this location. The beach further south along the frontage to the immediate north and south of the pier has a sporadic supply of material providing protection to the sea wall. It is assumed that under this scenario, in line with the findings of the strategy study, additional recharge would take place and that this would be retained by local structures.

The area to the south of the pier (Manor Terrace) is an area of the frontage that has been under some pressure due to the alignment of the defences. With sea level rise imposing increased pressure generally on the frontage, there is the potential for this location to become more prominent, forming a local headland within the Felixstowe bay. However, the new beach nourishment scheme and 't-head' groynes aim to reduce this pressure by creating more of a shingle beach along this section.

The shingle at Landguard Common would continue to accumulate behind the defences at Landguard Point if the structures were maintained to the current standards. There may be some general roll back of the frontage with sea level rise.

For the harbour side of Landguard Point, the policy highlighted within the strategy is No Active Intervention for the front line of defence, but to hold the flood defence line and to replace the jetty with a rock structure at the end of its life. It is therefore assumed that flood defences will be maintained as at present.

The strategy recommends that a rock groyne will be constructed when the jetty to the south of the fort fails. This will play a key role in retaining shingle along this frontage and provide some protection to Landguard Fort.

In terms of policy the strategy is recommending a Hold the Line policy protecting assets behind and maintaining the overall configuration of Landguard Point.

**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. It has been highlighted where further, more detailed information is provided by studies. 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>		<b>Present Value Damages (£x1000)</b>
<i>Location</i>	<i>Assets at risk</i>	
Cobbold's Point to Landguard Point	111 properties.	3,011
<b>WPM</b>		
<i>Location</i>	<i>Assets at risk</i>	<b>Present Value Damages (£x1000)</b>
Cobbold's Point to Landguard Point	No loss.	0

**MDSF ASSESSMENT OF POTENTIAL FLOOD RISK**

<i>Location</i>	<i>Assets at risk</i>	<b>Present Value Damages (£x1000)</b>
South Felixstowe	Properties.	1,066,448

**OTHER INFORMATION:**

No allowance has been made for amenity damages.  
The South Felixstowe Strategy gave damages of PV damages of £759m.

### 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
To improve Felixstowe as a viable commercial centre and tourist destination in a sustainable manner				
To protect the Port of Felixstowe and provide opportunities for its development				
To develop and maintain the Blue Flag beach				
To maintain a high standard of ongoing defence to the area				
To maintain existing facilities essential in supporting ongoing regeneration				
To integrate maintenance of coastal defence, while promoting sustainable development of the hinterland				
To maintain the historical heritage of the frontage				
To maintain biological and geological features of Landguard Common SSSI in a favourable condition				

### 4.7.3 DISCUSSION AND DETAILED POLICY DEVELOPMENT

By continuing the present management regime along this zone, there is a significant economic benefit and it generally meets the objectives of the stakeholders. The reliance on defences to protect the frontage remains causing pressure to build up at certain areas. There are, however, continued concerns with respect to retaining amenity value along this section due to the potential loss of the beach at the northern and southern sections of the town.

The No Active Intervention scenario would result in significant disbenefit to the area, with significant erosion taking place towards the southern section of the town and the loss of Landguard Common. As a baseline, With Present Management is appropriate and specific issues are discussed below.

Through this assessment it has been demonstrated that it is worthwhile continuing to manage Cobbold's Point. The fishtail groynes would require improvements within the next 20 years to maintain the seawall at the base of the cliff. There is also the potential need to modify the defence system in the area around the fishtail groynes to develop a natural bay shape in advance of the linear defence along the road. This might be more appropriately undertaken in developing the groynes to the south of the existing fishtail groynes.

At the pier there is currently appropriate management proposed under the strategy which delivers both the key aspects of strengthening the linear defence and maintaining the beach.

Further south at Manor End there is potential for pressure to build up due to the alignment of the defences along this section if the shingle beach is not maintained. This becomes a land use issue over 100 years and any scope within land use planning that allows some width would be beneficial for a possible need for realignment.

In overall terms the concept of managing the beach and promenade with a retired flood defence allows scope for improving defence standards in a sustainable manner.

Landguard Common is largely dominated by the defences to the north and south, and therefore management of this section is heavily reliant on the adjacent policy units. Landguard Point is a crucial control feature for this frontage and for the continued operation of the ports, so holding the line of these defences would be appropriate. This would then also retain the Landguard Common beach.

## Management Areas

In summary, this frontage has to be treated as two management areas covering the full zone, but has been split into 6 policy units:

- Cobbold's Point to Landguard Point.
- Landguard Point to Felixstowe Port (south).

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



#### 4.7.4 MANAGEMENT AREA 19

<b>Location reference:</b>	<b>COBBOLD'S POINT TO LANDGUARD POINT (CH. 73 TO 78.5)</b>
<b>Management Area reference:</b>	<b>FEL 19</b>
<b>Policy Development Zone:</b>	<b>PDZ 7</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.



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:** Felixstowe is recognised to be a significant regional centre. A substantial part of the town is either along the sea front, directly associated with the sea front or within the potential coastal flood zone. This includes the area of the Port. The whole coastal frontage is, therefore, of significant value in maintaining core values of the town. The aim of the plan is to maintain protection to all these key aspects while potentially allowing some adaptation in the way in which specific features of the frontage at the actual shoreline are managed. To the south of this management area in particular, the overall long term aim is to support natural development of the shingle and sand dunes in such a manner as to enhance ecological function while attempting to derive more sustainable natural defence to communities and recreational aspects. Maintaining Landguard Point provides an essential overall structure to the shoreline.

PREFERRED POLICY TO IMPLEMENT PLAN:	
<b>From present day</b>	Maintain and improve defences.
<b>Medium term</b>	Maintain and reinforce defences as required.
<b>Long term</b>	Maintain and reinforce defences.

## SUMMARY OF SPECIFIC POLICIES

Policy Unit		Policy Plan			Comment
		2025	2055	2105	
FEL 19.1	Cobbold's Point	HTL	HTL	HTL	Modify alignment of defences.
FEL 19.2	Felixstowe Beach	HTL	HTL	HTL	Consider manner and height of support to retain beach.
FEL 19.3	South Felixstowe	HTL	HTL	HTL	To maintain defences along this section, width needs to be maintained in the area of Manor Terrace.
FEL 19.4	Landguard Common	MR	MR	MR	
FEL 19.5	Landguard Point	HTL	HTL	HTL	Reinforce defences when required.
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 OF BUILT ENVIRONMENT

Economics		by 2025	by 2055	by 2105	Total £k PV
<b>Property</b>	Potential NAI Damages/ Cost £k PV	448,880	735,892	252,111	1,069,458
	Preferred Plan Damages £k PV	10,193	8,337	5,687	24,218
	Benefits £k PV	438,687	727,555	246,424	1,045,240
	Costs of Implementing plan £k PV	-	-	-	35,500
Whole life costs based on South Felixstowe Strategy. The strategy for South Felixstowe identified potential NAI damages of £750m.					

**Strategic Environmental Assessment summary table for preferred policy MA FEL 19**

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
<b>ISSUE - Maintenance of environmental conditions to support biodiversity and the quality of life</b>	
<b>ISSUE - Maintenance of balance of coastal processes on a dynamic linear coastline with settlements at estuary mouths</b>	
<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 established urban frontages and offers a MR policy to the spit in the south. The area therefore seeks to provide an overall level of balance on the coast. Overall, the Management Area will have a minor positive benefit in regard to this issue.</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 Felixstowe but, 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 to the south. The overall effect is therefore minor positive.</p>

ISSUE	DETERMINATION
<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 Felixstowe 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>Will SMP policy lead to the introduction of features which are unsympathetic towards the character of the 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>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>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>Landguard Common lies entirely within the designated area of Landguard Fort scheduled monument, which will be subject to MR. This is therefore scored as minor negative.</p> <p>The Management Area provides protection for urban areas and features within them.</p>

ISSUE	DETERMINATION
appropriate) and ensure the provision of adequate time for the survey of archaeological sites where loss is expected.	The Management Area provides minor positive benefits.
<b>ISSUE - Protection of coastal communities and culture</b> <b><i>Protection of coastal towns and settlements</i></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. The settlements are listed in Section 3.4.4.</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>The HTL policies for defended areas provide sustainable defence and so the policy has a minor positive benefit.</p>
<b><i>Protection of key coastal infrastructure</i></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 economy of the Suffolk coastal area. Paths are often located close to the foreshore in areas at</p>	<p>The Management Area HTL will provide ongoing defence of coastal roads in Felixstowe. The MR policy to the south will not lead to the loss of any infrastructure.</p> <p>The Management Area provides minor positive benefits.</p>
	<p>The HTL policy will maintain coastal footpath in urban areas.</p> <p>The Management Area provides minor positive benefits</p>

ISSUE	DETERMINATION
<p>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>	



#### 4.7.5 MANAGEMENT AREA 20

<b>Location reference:</b>	<b>LANDGUARD POINT TO FELIXSTOWE PORT (SOUTH) (CH. 78.5 TO 79.5)</b>
<b>Management Area reference:</b>	<b>FEL 20</b>
<b>Policy Development Zone:</b>	<b>PDZ 7</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.

**Shoreline Management Plan Sub-Cell 3C - Lowestoft Ness to Felixstowe Landguard Point**  
**Management Area 20 - Landguard Point to Felixstowe Port (south)**  
**(Ch 78.5 To 79.5)**

- 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.



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

**SUMMARY OF PREFERRED PLAN RECOMMENDATIONS AND JUSTIFICATION**

**PLAN:** The aim of the plan is to maintain the influence of Landguard Point and to continue providing protection to Landguard Fort. Flood defence to the hinterland would be maintained.

<b>PREFERRED POLICY TO IMPLEMENT PLAN:</b>	
<b>From present day</b>	Maintain defences.
<b>Medium term</b>	Maintain and reconstruct jetty as a rock groyne.
<b>Long term</b>	Maintain and reinforce defences as required.

**SUMMARY OF SPECIFIC POLICIES**

<b>Policy Unit</b>		<b>Policy Plan</b>			
		<b>2025</b>	<b>2055</b>	<b>2105</b>	<b>Comment</b>
FEL 20.1	Landguard Fort	HTL	HTL	HTL	Reinforce defences when required.
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 OF BUILT ENVIRONMENT**

Damages for this zone are covered within FEL 19.

**Strategic Environmental Assessment summary table for preferred policy MA FEL 20**

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
<b>ISSUE - Maintenance of environmental conditions to support biodiversity and the quality of life</b>	
<b>ISSUE - Maintenance of balance of coastal processes on a dynamic linear coastline with settlements at estuary mouths</b>	
<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 of a key holding point on the coast at Landguard Point. The point would naturally by a dynamic feature however historically this area has been defended for purposes of coastal defence and navigation.</p> <p>Overall, the Management Area will have a minor negative benefit in regard to this issue.</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 estuary mouth, 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 the protection of a fixed urban/commercial area. The overall effect is therefore minor negative</p>

ISSUE	DETERMINATION
<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 Landguard Point 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>Will SMP policy lead to the introduction of features which are unsympathetic towards the character of the landscape?</p>	<p>The Management maintains an iconic feature in the landscape 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>	

ISSUE	DETERMINATION
<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 such features including the SAM at Landguard Fort.</p> <p>Therefore there is an overall minor positive benefit.</p> <p>The Management Area provides protection for urban areas and features within them.</p> <p>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. The settlements are listed in Section 3.4.4.</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>The HTL policies for defended areas provide sustainable defence and so the policy has a minor positive benefit.</p>
<p>Coastal communities in Suffolk may be dependent on key features which are located outside of the settlement area (for example the relationship of Southwold Harbour (on the Blythe Estuary) to the economy of Southwold). There is a need therefore to ensure that features which support communities are maintained, or the actual utility is maintained) – will SMP policy maintain the</p>	<p>The policy maintains the fixed mouth of an internationally important navigation channel and as such the effects are minor positive.</p>

ISSUE	DETERMINATION
<p>form or function of features located outside of established settlements, which are essential to the economy and quality of life of key coastal settlements?</p>	
<p><b>Protection of key coastal infrastructure</b></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 to Landguard Fort and the viewpoint of Landguard Point.</p> <p>The Management Area provides minor positive benefits</p>

