
3 Management objectives and Units

3.1 Introduction

This section sets out the broad shoreline management objectives applicable to the East Solent area as a whole, and sub-divides the open coast into Management Units.

3.2 Management objectives

The major objective for the East Solent, in common with all other parts of the coastline of England and Wales is to develop and implement sustainable coast defences in line with the Government's Flood and Coastal Defence Policy Aim, defined as:

“To reduce risks to people and the developed and natural environment from flooding and coastal erosion by the provision of technically, environmentally and economically sound and sustainable defence measures”

with the primary Policy focus on:

“The protection of life and hence of urban areas.”

The following important factors relating to the East Solent area have been considered in setting the broad management objectives:

- Large areas are below predicted extreme sea levels and are potentially at risk from flooding.
- Most of the open shoreline is subject to erosion due to the soft surface geology, a lack of available drift material to form stable beaches and a large scale, long term shoreline instability in relation to the wave and tidal climates.
- Much of the coastal area is heavily developed and contains important infrastructure and military facilities.
- Undeveloped areas and the intertidal zone contain considerable environmental assets, including substantial areas subject to protection by the European Union Habitats Directive and other international environmental legislation.
- Much of the shoreline has been protected previously, resulting in land use which is now dependant on continued protection.
- Statutory and non-statutory controls apply to operations affecting the natural environment, navigation, historic sites, high grade farmland, geological exposures and the landscape.
- The shoreline and nearshore zone is heavily used for recreation.
- Sediment transport on much of the open coast is subject to reversals of direction, sometimes lasting for several years, making predictions of the sediment budget and future beach development subject to wide confidence limits.
- The coastline is dissected by the harbour entrance channels, hence continuity of littoral transport is affected by tidal influences and the need for maintenance dredging.
- Long term climatic changes could reverse drift directions and could increase the risk of breaching, damage to shoreline structures and overtopping.
- The rate of local sea level rise is predicted at between 6mm/year and 13mm/year.

Based on these factors, the broad objectives for shoreline management are:

- To protect human life.

- To protect existing developed areas and infrastructure, subject to benefit/cost analysis, taking account of long term environmental as well as socio-economic factors.
- To ensure that management operations comply with statutory obligations with respect to the natural environment, navigation and cultural heritage.
- To implement management operations that allow for future flexibility in response to changes in physical conditions and in economic or social circumstances.
- To implement management operations that recognize the value of retaining or enhancing the quality of life, the natural environment and the landscape.
- To manage the shoreline with due consideration to potential impacts on adjacent areas.
- To restrict future property or infrastructure development except in areas:
 - already adequately protected due to existing development
 - where there is no existing or future risk from flooding or erosion
 - where development will not significantly affect the natural environment.
- To continue or expand the existing monitoring operations to ensure that future management can be based on a fuller understanding of coastal processes, flood and erosion risks, environmental development and changing social aspirations.

3.3 Management Units

Management of the shoreline will be undertaken in Management Units within the wider context of the SMP area. The units are intended to cover lengths of the shoreline with coherent characteristics in terms of coastal processes and land assets, and may form discrete areas for economic appraisal purposes.

The physical factors considered include:

- solid and drift geology
- beach material type, including upper and lower beaches
- wave climate
- tidal regime
- sediment transport pathways, including sources and sinks
- flood risk areas
- backshore geomorphology
- nearshore bathymetry and sediment distribution.

The on land assets of importance are:

- existing development and infrastructure
- nature conservation interests
- existing defences.

The open coastline Management Units have been selected to ensure that future management takes a broad view of the shoreline as a continuous feature along which any coastal activity may cause impact to areas at some distance. It is recognised that some of the Units may require more than one management approach due to changes in the land characteristics or potential future changes in coastal processes, but these management approaches must be inter-related to ensure that the unit as a whole benefits.

Based on the information collated during Stage 1 the open coast has been divided into fourteen Management Units. [Figure 2](#) presents the location of the Units, while [Table 2](#) provides summary descriptions including the existing management operations. [Appendix 1](#) contains the Management Plan for each Unit.

Pagham Harbour has been included within this document in summary form only due to its relationship with Units 1 and 3. The area is considered in greater detail in the companion Volume IV.

Table 2 Management Units

Unit	Length	Description	Existing Management
1 Pagham Beach to East Beach, Selsey	3800m	Area of general shingle accretion, including spits across Pagham Harbour. Fed by northerly longshore drift and onshore transport from inter-tidal banks. Also some longshore feed from north due to local drift reversal. Breach of spits would damage sensitive environments in Pagham Harbour and could cause extensive flooding of farmland, holiday developments and other property. Area has major environmental assets and some backshore residential development at Pagham Beach.	Arun DC maintains rock groynes at Pagham Beach to improve long term stability of shingle beach. Chichester DC maintains wooden groynes south of Church Norton to control drift and thus to protect backshore properties. Environment Agency maintains wooden groynes on south spit and undertakes regular recycling to maintain stability of spit and to maintain land drainage through Pagham entrance. Environment Agency also maintain the training wall to the north of the entrance channel.
2 East Beach to West Beach, Selsey	4400m	Area of natural headland erosion controlled by seawalls, groynes and beach recharge. Some beach feed from nearshore banks. Drift divide at headland of Selsey Bill. Seawall condition variable to west, parts being in private ownership. Overtopping occurs along most of the Unit. Breach of east facing defences would result in flooding of residential areas and open ground. Land levels behind southwest facing defences are above maximum water level.	Chichester DC maintains most of wall and groynes, and undertakes recharge operations. Private frontagers are responsible for maintaining remaining sections of wall.
3 West Beach, Selsey to Bracklesham	4200m	Area of general erosion of shingle ridge and lower foreshore, with exposures of soft formation of Bracklesham Clays, plus short length of eroding soft cliff at south end of ridge. Some beach feed from southeast and some from nearshore banks. Breach of ridge would flood extensive areas of farmland and holiday development plus some homes. Continued erosion of cliff may outflank ridge, causing extensive flooding. May also cause loss of residential property along western limit of Selsey. Beach and backshore includes environmental assets.	Private frontager does not protect length of eroding cliff at the south east end of frontage, though continued erosion may lead to outflanking of ridge. Chichester DC have undertaken minor work to reduce erosion at boundary with Unit 2. Environment Agency maintain groynes along ridge and undertake extensive shingle recharge and recycling operations.
4 Bracklesham to East Wittering	3400m	Area of soft cliff erosion controlled by seawalls / breastworks and groynes. Some beach feed from south east. Overtopping damage along wall, but little damage to residential areas behind the first line of properties. Foreshore lowering taking place slowly but will cause overtopping and beach erosion in the long term.	Chichester DC maintain most of the walls and groynes. Private frontagers are responsible for maintaining remaining short sections of wall.
5 Cakeham Estate to East Head	3500	Area of soft cliff erosion extending into eroding shingle ridge and sand dunes. Groynes and short sections of gabions and breastwork control erosion along main frontage, but not East Head. Residential area set back from shoreline in east. Potentially floodable farmland behind ridge to west. Some beach feed from south east. Lower beach extends out to 2km wide low tide East Pole sand bank. Complex sand transport around bank due to influence of strong currents in Chichester Harbour entrance.	Chichester DC maintains groynes, breastwork and gabions. East Head dune system is maintained by National Trust. Chichester Harbour Conservancy manage the neck of East Head.
6 Sandy Point to the Inn on the Beach, Hayling Island	5600m	Low lying residential area built on eroding shingle foreland. Main frontage protected by sea wall fronted by a recharged beach. Unstable shingle spit extends up Chichester Channel. Drift divide causes erosion at Eastoke. Overtopping of wall or breach of spit will cause flooding.	Havant BC maintain wall, rock revetment, timber breastwork, groynes and recharge from Eastoke Point to "Inn". Private frontagers maintain spit and Sandy Point. Beach management review underway by Havant BC.

Table 2 Continued

	Unit	Length	Description	Existing Management
7	Inn on the Beach to Langstone Ferry, Hayling Island	2700m	Area of shingle accumulation, with a spit extending to the Ferry in Langstone Harbour. Subject to cyclic variations, but long term trend is erosion to the east, accretion at Gunner Point and erosion/accretion to Langstone Ferry. Shingle beach west of the Inn on the Beach protected by timber sloping revetment. Miscellaneous seawalls along the spit facing into Langstone Channel, some subject to damage.	Havant B.C. maintain revetment and minor walls near Langstone Ferry and defences west of Inn on the Beach Hayling Golf Club maintain a short length of wall which protects access road on spit facing Langstone Channel. Wall outside Ferry Boat Inn privately maintained.
8	Hayling Ferry to Southsea Castle, Portsea Island	5000m	Low lying land protected by shingle beach, and spit extending into Langstone Harbour. Area of minor erosion south of Hayling Ferry, major accretion at Eastney and relative stability at South Parade. Gabions and timber groynes protect the spit facing into Langstone Harbour. Concrete walls form a hard defence around Fort Cumberland. Future beach erosion could result in overtopping of seawall/promenade with flooding of residential or recreational land, opposite Lumps Fort and east of Southsea Castle.	Portsmouth C C maintain most of the defences, including protection of the spit within Langstone Harbour. The defences around Fort Cumberland are the responsibility of the MoD and Southern Water Services.
9	Southsea Castle to Portsmouth Harbour entrance, Portsea Island	2700m	Southsea and Old Portsmouth once protected by shingle beach, though this is greatly reduced due to waterfront development since the C15th. Seawalls extend around Southsea Castle and to the Royal Naval War Memorial. Masonry walls protect Old Portsmouth and have historic importance. Long term beach losses are small. Failure to maintain defences at Old Portsmouth would lead to flooding of high density urban development.	Portsmouth C C maintain the seawalls, groynes, historic walls and beach. Old Portsmouth also subject to flooding from groundwater and from harbour side overtopping.
10	Fort Haslar to Fort Gilkicker, Gosport	3000m	Massive revetment (Haslar Seawall) protects MoD property as well as low lying land. Levels in front have fallen so that original shingle beach no longer exists, and toe protection has been required. Potential breach or overtopping near Fort Monckton. Littoral drift along this frontage is now very low. Seawall and embankment protect low lying lagoon near Fort Gilkicker. Narrow shingle beach with groynes fronts the wall. Breaching of the embankment would cause flooding of the lagoon and loss of rare habitat.	Haslar Seawall is maintained by the Ministry of Defence as are the defences from Fort Monckton to Fort Gilkicker.
11	Fort Gilkicker to Browndown Ranges	4100m	Area of shingle accretion with its apex at Gilkicker Point. Supply of beach material to the area is now limited due to construction of coast protection works to the northwest at Lee-on-the-Solent and Hill Head. Erosion at the northwestern end of Browndown Ranges. Slow accretion continues to take place west of Gilkicker Point. Much of the backshore is undeveloped and has major environmental and recreational assets. Short section of road protected by wall is subject to erosion and overtopping. The River Alver outfall crosses the beach and is subject to blocking by shingle.	The Ministry of Defence maintains a riprap revetment and groyne system at the northwest end of Browndown Range. The seawall protecting the coast road in Solent Bay is maintained by Gosport BC. The Environment Agency maintains the River Alver outfall.

Table 2 Continued

Unit	Length	Description	Existing Management
12 Lee-on-the-Solent to Hill Head Harbour	4200m	Frontages of clay cliffs, with pockets of low lying land. Mainly a residential area. Littoral drift from the northwest is interrupted by Hill Head Harbour with shingle swept onto nearshore banks and sand transported offshore by tidal currents. Outfalls also affect drift. There are stretches of seawall and a number of groyne systems. Some areas on the Hill Head frontage have no built protection.	Gosport BC maintain the seawalls and groynes to boundary. A recharge and groynes scheme on the Lee-on-the-Solent frontage is underway. Fareham BC maintain the seawalls and groynes and locally nourish beaches with shingle on the Hill Head frontage. SWS Ltd maintains a number of large outfalls across the beach at Hill Head.
13 Hill Head Harbour to Solent Breezes	3300m	Frontage of eroding cliffs of clay, sand and gravel. Low lying land is restricted to Titchfield Haven in the southeast. Seawalls, timber groynes and timber and sheet steel piling provide erosion and flood protection at Titchfield Haven. Cliff erosion provides material for the spit along the Titchfield Haven frontage. There is a drift divide at Solent Breezes in the north west.	The Environment Agency maintains protection of Titchfield Haven. Hampshire CC control much of the backshore. Hill Head Sailing Club maintain harbour spit.
14 Solent Breezes to Hook Lake	2600m	Frontage of eroding cliffs of clays, sand and gravel feeding Hook Spit to the northwest. Cliff protection at Solent Breezes consists of a short lengths of gabion and timber bulkhead. National Grid have major infrastructure north of Solent Breezes at risk from erosion and flooding.	Protection at Solent Breezes is in private ownership. National Grid are reviewing their protection requirements.
Pagham Harbour	8000m	Area of mud flats, shingle banks, saltmarsh and reeds, protected by massive shingle spits at the harbour entrance. Inner margins generally stable with the exception of eroding bank alongside the dismantled railway north of Ferry House and erosion/overtopping of embankment separating the lagoon and harbour. Saltmarsh erosion in front of Pagham Wall and bordering banks on the north margin of the harbour. Much of the hinterland is low lying farmland at risk from flooding. Present state depends on maintenance of spit (see Unit 1).	The Environment Agency maintains sluices and protects the embankment around the sluice north of Ferry Channel. The Environment Agency maintains integrity of Pagham Wall, which is subject to considerable wave action. Private frontagers protect the backshore at Little Weybourne, adjacent to Pagham Wall. Chichester flood relief scheme planned for Pagham Wall and the low land behind. The Environment Agency maintain sheet pile wall on the north side of harbour entrance channel.