

## Management Unit 14 : Solent Breezes to Hook Lake

### Unit limits

2600m from 450700E, 103800N to 448850E, 105300N

### Coastal Processes

The frontage extends from historically eroding cliffs at Solent Breezes to low lying marshes protected by a large shingle spit ending at the mouth of the River Hamble. A natural drift divergence zone at Solent Breezes caused rapid erosion, but the cliffs have been protected and now form a minor headland.

- Geology*
- Bracklesham Beds overlain by eroding River Terrace beds. The upper beach varies from shingle and cobbles at Solent Breezes to shingle at Hook Spit. The lower beach and wide nearshore shelf sediments comprise muddy sands.
- Wave climate*
- Waves approach from southeast through to northwest with approximately equal frequency, though southerly waves tend to be larger
- Tidal regime*
- Flood tide sets to northwest
  - Ebb tide sets to southeast
  - Maximum nearshore current <0.25 m/s
  - Very weak residual currents
- Sediment transport*
- Drift divergence zone at Solent Breezes
  - Weak but strongly directional drift from southeast to northwest
  - Feed of material from cliff erosion now reduced due to protection at Solent Breezes
- Possible future change*
- 300mm sea level rise over 50 years
  - Increased inshore wave energy, with main direction shifting clockwise
  - Decreased nett drift to northwest

**Table 14.1** *Extreme wave heights and water levels*

Probability	1:1year	1:10 years	1:50 years
Nearshore wave height $H_s$ (m)*	1.0	1.2	1.3
Maximum water level (MoD)	2.21	2.50	2.61

\* at the -2m CD contour assuming MHWS tide level.

## Existing defences

The cliffs at Solent Breezes are protected by a timber and riprap revetment flanked by massive gabion retaining walls. To the northwest the cliffs are unprotected and are eroding.

The shingle spit, known as Hook Spit encloses an area of marsh at Hook Lake. The spit is subject to breaching and is protected in places by assorted derelict structures. On the lee side of Hook Spit low masonry and brick walls protect Hook Lake and extend up the River Hamble to protect the School of Navigation at Warsash.

## Natural environment

The foreshore and much of the backshore lies within the Lee-on-the-Solent to Itchenor Estuary SSSI (also a proposed Ramsar site and SPA), the Hook with Warsash LNR and the Solent Maritime possible candidate SAC. The Hook Saltworks CHS is at the neck of Hook Spit. The only backshore areas not designated are the Solent Breezes holiday development and the National Grid property running down to the shoreline immediately to the west. Shoreline management must comply with statutory procedures including the Habitats Directive.

## Land use

The backshore comprises a holiday development at Solent Breezes, the National Grid headworks and associated infrastructure, low grade agricultural land and the designated habitats around Hook Spit and Hook Lake. There is an outfall at Solent Breezes and a slipway giving access to the beach.

## Human environment

Apart from holiday development at Solent Breezes, the area has limited recreational use. The beach is not easily accessible and is formed of cobbles leading to a muddy sand lower foreshore. There are several sites of historical/archaeological interest including the Hook Saltworks.

## Planning policies

The area is entirely designated as Coastal Zone and Countryside, so will remain undeveloped.

*Statutory policy documents* - Hampshire County Structure Plan, Deposit Draft  
 - Hampshire Minerals and Waste Plan, Deposit Draft  
 - Fareham Borough Local Plan, Consultation Draft

## Strategic defence options

**Table 14.2 Impact matrix**

	Do nothing	Hold the line	Retreat the line	Advance the line
Effects on physical environment and coastal processes	Decreased wave attack due to wider beach. Increased wave attack in lee of Spit if breached.	Future increased wave attack. Loss of natural feed to Spit.	Decreased wave attack.	Increased wave attack. Loss of Spit as a natural feature.
Effects on human environment	Flooding of Nat. Grid tunnel and loss of headworks. Loss of holiday properties at Solent Breezes. Loss of Saltworks.	Existing situation improved.	Loss of Nat. Grid tunnel and Solent Breezes properties. Loss of Salt works.	Reclaimed land available for development or recreation.
Effects on natural environment	Increased tidal flooding of Hook Lake.	Natural evolution of Hook Spit stopped.	Loss of part of designated areas.	Loss of foreshore. Natural evolution of Hook Spit stopped.
Implications for coastal defence	Solent Breezes defences lost. Spit regularly overtopped.	New and upgraded defences required, including management of Spit.	New line of defence required to protect Hamble shoreline.	Substantial new defences required.
Impact on adjacent units	Increased wave attack up to Warsash.	Negligible	Increased wave attack up to Warsash.	Negligible

### Losses due to “do-nothing” option

Existing defences at Solent Breezes have short residual life after which time cliff erosion will resume. Damage to holiday chalets and to the slipway will occur in the short term.

The headworks of the National Grid tunnel from Fawley power station are at risk from continuing erosion and from flooding. Temporary flood defences are planned, and a permanent solution to the erosion risk is being developed. Moving the works is not a viable solution and the cost of damage could run to many millions.

Hook Spit is likely to breach in the short term at both the western end and near to the land connection. A permanent breach is not likely to occur until foreshore deposits of shingle are exhausted.

The seawall at Hook Lake and the School of Navigation will suffer damage as a result of overtopping and underscour in the short term. Seawall collapse is likely to occur in the medium term, particularly if Hook Spit is permanently breached allowing more severe wave attack.

### Preferred option

The economic consequences of a do-nothing or retreat policy are unacceptable. There is no existing requirement for reclaimed land to justify the high cost of advancing the line. Therefore the suggested short term policy is to **hold the line** by extending the defences along the developed frontage, with a review of the need for protection of the National Grid tunnel in the medium term. The appropriate standards of defence ranges from 1:1 year at Hook Spit to 1:200 years along the National Grid frontage.

The implications of the proposed SAC should be established through consultation with English Nature. Designation of the intertidal and nearshore areas as a SAC may result in future conflicts of interest.

This approach is compatible with the Draft West Solent SMP.

## Suggested management operations

- Short term*
- Establish erosion and flood defences for the National Grid tunnel
    - Upgrade the defences at Solent Breezes
    - Minor recharge to Hook Spit to prevent the formation of a permanent breach
    - Maintain seawall at Hook Lake and upgrade defences around the School of Navigation
    - Restrict further development of property or infrastructure close to the shoreline
- Medium term*
- Increase height of wall at Hook Lake and Warsash
  - Review the requirement for protection of the National Grid tunnel

## Preliminary economic assessment

### *Losses due to “do-nothing”*

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|----------------------------------|-------|
| - Flood/erosion damage to tunnel | £60M  |
| - Damage to Solent Breezes       | £0.4M |

### *Costs of “hold the line”*

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|---|-------|
| - New and upgraded defences, beach recharge | £1.5M |
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