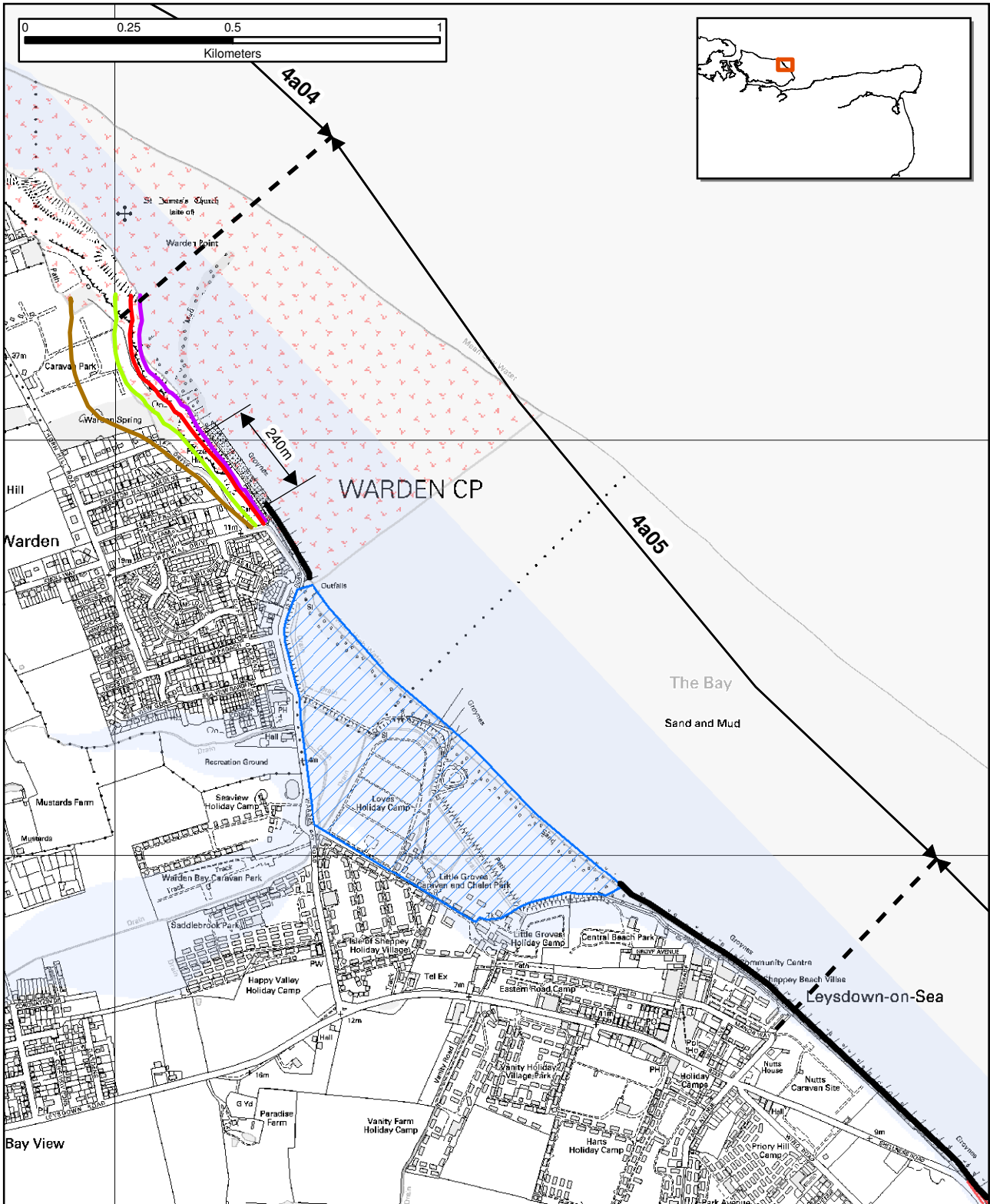


Isle of Grain to South Foreland Shoreline Management Plan Policy Unit 4a 05: Warden Bay to Leysdown-on-Sea - Map 1



Policy

From Present Day:	Medium-Term:	Long-Term:
Hold the Line and Managed Realignment	Hold the Line and Managed Realignment	Hold the Line and Managed Realignment

Erosion Lines

- 0-20 year erosion
- 20-50 year erosion
- 50-100 year erosion
- 0-100 year (HTL)
- - - Policy Unit Boundary
- Current shoreline

- Indicative Realignment Extent
- Proposed coastal protection works (Bund, crest level >5.04m AOD)
- 2005 Indicative floodplain © Environment Agency

Environmental/Cultural Heritage

- National Nature Conservation Designation
- International and National Nature Conservation Designation

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Location reference:	Warden Point to Leysdown-on-Sea
Policy Unit reference:	4a05

SUMMARY OF THE PLAN AND JUSTIFICATION

Plan:

This unit covers the clifftop village of Warden, a low-lying area known as 'The Bay' and the low-lying village of Leysdown-on-Sea. Along this section of coast a number of management structures are currently in place, for example; the cliffed section of the Warden village has a toe defence structure, which limits but does not prevent erosion, whilst the low-lying section of Warden is currently defended by a concrete seawall. At the 'The Bay' there is a secondary defence (clay bund), whilst at Leysdown-on-Sea there is a concrete seawall and groynes. It is acknowledged that the cliff toe structure, at Warden, is scheduled to be upgraded (summer 2007), which will maintain some protection of the cliff top assets. Like the existing structure its design will reduce but not prevent erosion.

The short term plan is to upgrade and maintain the current defences at Warden, limiting the amount of cliff erosion and flood risk and continue to limit the flood risk at The Bay and Leysdown-on-Sea. In the medium and long term it is envisaged that the effectiveness of the toe defence at Warden, will reduce in light of sea level rise and the gradual deterioration of the structure. (During the first two epochs however, there is likely to be a flattening and grassing over of the slope as toe erosion is significantly slowed down. As the upgraded defences begin to deteriorate in the third epoch, toe erosion may be reactivated.) This will result in gradually increasing erosion of the backing cliff, which will ensure the geological value is maintained and a sustainable cliff top position is achieved. However, this approach will involve the loss of some clifftop properties and minor roads, along with coastal paths, which will need re-routing. The number of losses will however, be significantly reduced by the rock defence. Under this approach there is the potential that unknown buried heritage assets will be lost.

At The Bay, a change in the current maximum realignment line (the clay embankment) is recommended, for the medium and long term. This approach will allow the shoreline to respond naturally, as such some inundation of the hinterland is anticipated, reduce the impact of coastal squeeze and prevent uncontrolled flooding. The potential for unknown buried heritage to be lost under this approach also exists.

At Leysdown-on-Sea a continuation of current practises is recommended for the medium and long term. This approach will ensure the protection of the residential area and infrastructure. However, in the long term and under a scenario of sea level rise the beach will narrow. Subsequently significant amounts of beach nourishment will be required if an amenity beach is to be maintained. Again there is the potential buried unknown heritage to be lost under this policy.

Preferred policies to implement Plan:

From present day: The present day policy for Warden to Leysdown-on-Sea is to combine **managed realignment** and **hold the line**. At Warden the plan is to implement managed realignment along the cliffed section of the village, which will be achieved by upgrading the existing rock bund at the toe of the cliffs. As the bund will not prevent but will reduce the rate of erosion, it is recommended that this approach be supplemented with regular monitoring. This policy reduces property loss and geological interest but maintains the designated landscape and does not adversely affect alongshore coastal processes. Any material

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eroded will contribute to the sediment budget.

Along the low-lying section of Warden and Leysdown-on-Sea, the plan is to continue protecting the backing assets from flood inundation under a **hold the line** policy. This will be achieved by maintaining existing defence structures. However, under a predicted scenario of sea level rise it will become increasingly to maintain a beach along this frontage.

At The Bay a policy of **managed realignment** is recommended. This will be achieved by continuing to allow the shoreline to respond naturally. Flood inundation will be limited by a secondary defence. (The position of this defence has not been defined, as it is not within the remit of the SMP to do so).

Medium-term: The medium term policy for Warden Point to Leysdown-on-Sea is to manage erosion and flooding under scenario of **managed realignment** and **hold the line**.

Along the cliffed section of Warden, a policy of **managed realignment** is recommended. It is anticipated that rates of cliff erosion will increase during this epoch, in response to sea level rise and a reduction in the efficiency of the rock bund. This approach will involve the loss of some clifftop properties, although the rock defence will reduce the number.

Along the low-lying section of Warden and Leysdown-on-Sea, the plan is to continue protecting the backing assets from flood inundation under a **hold the line** policy. This will be achieved by maintaining existing defence structures.

At The Bay a policy of **managed realignment** is recommended. This will be achieved by continuing to allow the shoreline to respond naturally. Flood inundation may increase and become more frequent during this epoch, under a scenario of sea level rise, but the secondary defence will limit the flood extent. (The position of which has not been defined, nor is it within the remit of the SMP to do so).

Long-term: The long-term policy for Warden Point to Leysdown-on-Sea is to continue managing erosion and flood inundation under a combined policy of **managed realignment** and **hold the line**.

Along the cliffed section of Warden a policy of **managed realignment** is recommended. Under this policy it is to be accepted that the bunds efficiency will continue to decrease with time, due to ongoing sea level rise. As such, cliff erosion will increase and there will be an ongoing loss of cliff top properties.

Along the low-lying section of Warden and Leysdown-on-Sea, the plan is to continue protecting the backing assets from flood inundation under a **hold the line** policy. This will be achieved by maintaining existing defence structures. Beaches along this section of the coast are anticipated to denude during this

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epoch, under a scenario of sea level rise, and additional maintenance will be needed if an amenity driven frontage is to be sustained.

At The Bay a policy of **managed realignment** is recommended. This will be achieved by continuing to allow the shoreline to respond naturally. Under a scenario of accelerated sea level rise, it is anticipated that flood inundation will increase during this epoch but the secondary defence will limit the extent. (The position of this defence has not been defined, as it is not within the remit of the SMP to do so).

Location reference:		Warden Bay to Leysdown-on-Sea				
Policy Unit reference:		4a05				
IMPLICATIONS OF THE PLAN FOR THIS LOCATION						
Time Period	Management Activities	Property, Built Assets and Land Use	Landscape	Nature Conservation	Historic Environment	Amenity and Recreational Use
2025	Improve the existing rock bund. Maintain flood defences at Warden and Leysdown. The construction of a realigned flood defence structure could take place during this epoch, at The Bay.	Current built assets and land use maintained.	Current landscape maintained	Limited erosion of the cliffs maintains the environmental and geological assets	No significant heritage assets present. Some unknown heritage assets may be exposed / lost.	Current amenity and recreational facilities maintained.
2025 – 2055	Maintain, but not improve the existing rock bund. Maintain / upgrade the flood defences at Warden and Leysdown, allow the shoreline to realign at The Bay.	Up to 16 properties could be at risk/lost due to cliff top retreat and inundation of The Bay.	The current landscape and land use will alter slightly, giving way to a transgressed shoreline and inter-tidal area at The Bay. Further cliff erosion at Warden is anticipated.	A predicted increase in cliff erosion will improve environmental and geological interests. Some freshwater interest will give way to saline habitats at The Bay.	No significant heritage assets present. Some unknown heritage assets may be exposed / lost.	The current amenity assets and recreational use at The Bay is likely to change. At Warden the cliff top footpath may be at risk and if possible should be realigned.
2055 – 2105	Maintain, but not improve the existing rock bund. Significantly increase hard defences in the long term, as beaches narrow and sea level rises.	Up to 5 properties could be at risk/lost due to cliff top retreat and inundation at The Bay.	The current landscape and land use will alter slightly, giving way to a transgressed shoreline and inter-tidal area at The Bay. Further cliff erosion at Warden is anticipated.	A predicted increase in cliff erosion will improve environmental and geological interests. Some freshwater interest will give way to saline habitats at The Bay.	No significant heritage assets present. Some unknown heritage assets may be exposed / lost.	The current amenity assets and recreational use at The Bay is likely to change. At Warden the cliff top footpath may be at risk and if possible should be realigned.