

Executive Summary

A coastal defence management strategy for Walney Island over the next 100 years has been developed and, following thorough public consultation, is now presented as a final strategy document. The full study has involved the compilation of existing data and examination of the issues and this is presented within the Volume 1 Report (Stage 1 of the study – reported separately) and more recent additional desk and field study to set the most appropriate future defence strategies (Stage 2 - leading to Volume 2 – ie: this document).

Preparation of this Strategy has addressed the following key issues:

- ◆ Rates of erosion along the west coast of Walney Island.
- ◆ The threat to the public from flooding.
- ◆ Flood warning, forecasting and emergency planning (flood re-routing).
- ◆ Prevention of pollution from the various landfill sites on the island.
- ◆ The need to minimise effects of future coastal defence management on natural habitats and to maintain the favourable status of protected habitats.

A key conclusion of this study, based on current information, is that for the foreseeable future (of the order hundreds of years) Walney Island is not at risk of a ‘permanent’ breach caused by coastal erosion. For this study, ‘breach’ is defined as a break in the island at all states of the tide). Whilst stating this, it must be emphasised that the island is currently experiencing occasional ‘temporary breaches’, or flood water linkage caused by waves overtopping defences during extreme storms, but the problem abates as the tide recedes over a period of days. Nevertheless, it is appreciated that this is of great concern to isolated communities, particularly around Biggar and Tummer Hill.

The recommended strategy for protecting Walney Island’s human and environmental assets is “Sustainable Selective Intervention”. This strategy seeks to continue the current approach, with improvements / modifications to some existing defences, but also includes use of beach management techniques through local recycling of shingle or defence material. It encourages, at selective locations, the landward movement of defence lines (managed realignment) if appropriate. Implemented correctly, such defence realignment could reduce flood risk during storm events (via effective flood re-routing schemes) and facilitate better emergency planning.

The preferred strategy provides for the creation of secondary defence bunds (if required), set back from the coastline, to reduce flood risk, and designed to encourage the generation of new habitats. Only key assets on the west coast, such as the landfill site at Low Bank, will be provided with protection from erosion. The protection to landfill sites will continue until more appropriate, cost effective alternative disposal solutions are found.

In the longer term, most likely beyond the economic appraisal period of this Strategy (100 years), if the island is to be maintained as a natural breakwater to Barrow, wide-scale intervention through coastal defence is likely to be the only feasible solution. A critical question that needs to be answered, at a regional level, is what minimum width of Walney Island is acceptable to sustain a thriving community? This is not a question that this generation needs to answer. Indeed, within the timeframe of this Strategy, economic and environmental constraints prevent a recommendation to halt contemporary erosion. To this end, management of the west coast of Walney Island will be focussed on how best to manage its retreat. Any planning decisions on Walney Island should include consideration of this far reaching recommendation.

There are uncertainties over natural shoreline evolution of the island. The sand/shingle beaches along the west coast are subject to a number of stresses, including the net loss of material from the system and wide variations in “year-on-year” storms. This can result in increased erosion rates along un-defended cliffs and increased pressure on existing defences potentially leading to increased flood risk. Therefore, the implementation of a simple monitoring and feedback system, ideally involving local communities, is integral to the success of the Strategy.

To take further the findings of this Strategy, there is a need to develop in more detail the actions potentially required to implement the preferred strategy option. The following studies (known as Project Appraisal Reports (PAR's) - subject to Defra approval) are recommended to be undertaken in a sequential manner over the next few years. The progression of the studies listed here is subject to Defra approval. A draft implementation programme is presented in section 7 of this report.

PAR 1 – Beach Response Management System (BRMS).

The preparation of a structured long term monitoring programme is vital to being able to support the development of sustainable shoreline management options for Walney Island. Whilst monitoring currently takes place, and whilst it is acknowledged that the Cell 11 Coastal Groups are seeking to embark on a Regional Monitoring Strategy, a data management system specifically for Walney Island is required. PAR1 will identify priority areas for monitoring (shoreline/saltmarsh etc) with the results supporting the development of policy decisions for PAR's 2 and 3 (see below).

PAR 2 – Managed Realignment Implementation

Using information collated from PAR 1 on an annual basis and the Regional Monitoring Strategy (currently being proposed), a second PAR is urgently required to determine the long term strategy for the landfill tip site defences at Bent Haw and Low Bank in particular. The current Strategy Study scope was not designed to determine the potential contamination issues associated with relocating the contents of the tips. However, coupled with more robust topographic surveying in the hinterland area, a clearer action plan for how implementing selective or total managed realignment needs to be achieved. PAR2 is a key report to enable this though focused topographic and geotechnical investigations and the potential development of an island wide digital elevation terrain model. Based on these results, proposals for flood re-routing options and redefining a 2050 “defence line” that will be acceptable to all Walney Island stakeholders may be determined.

PAR 3 – Tummer Hill, Middle Hill and Biggar Village Community Flood Risk Assessment

Following on from the preparation and implementation of PAR1 and findings presented in PAR2, a third PAR would focus on undertaking a flood risk assessment, a flood awareness study for all residential settlements, the development of future flood mitigation measures for Tummer Hill and Middle Hill, Biggar Village and a study of access issues to the south of the island and properties adjacent to Jubilee Bridge at Vickerstown (incorporating flood re-routing proposals identified in PAR2). A clear statement on appropriate actions to mitigate against flood risk and seek to reduce flood risk and access route problems to the south will be ascertained and founded on the information presented in PAR1 and strategic long term defence options presented in PAR 2.

It is important to emphasise that the preferred Strategy is subject to review. For example, should the outcome of future monitoring exercises (PAR1 and PAR2) show an unforeseen increase in the rate of erosion and shoreline recession then the preferred strategic option will need to be revised.

In summary, the successful implementation of this Strategy depends on partnership between public authorities and key stakeholders with all future management issues considered on an island wide basis.