# 8 Recommendations and Conclusions

## 8.1 Preferred Strategy

The preferred Strategy for Walney Island as a whole is ***"Selective Intervention"***: This includes continuing the current selective intervention approach, with improvements where justified and more minor works at selective locations. This Strategy also advocates managed realignment of defences where appropriate to facilitate improved management of the coastline (including secondary defence bunds or "backstops", managed retreat/realignment that will generate new habitats, beach management through recharge or recycling and possibly flood re-routing options). It is important to emphasise that this preferred Strategy is subject to review. For example, should the outcome of future monitoring or separate PAR exercises demonstrate an unforeseen increase in the rate of erosion and shoreline recession or impractical defence realignment implementation, then this Strategy can be changed.

Preparation of the Strategy has considered the following key issues:

- Pollution from and protection of landfill sites.
- Threat to public health and safety from widespread flooding.
- The need to minimise effects of future coastal defence management on natural habitats and to maintain the favourable status of protected habitats.

## 8.2 Implementation of Strategy

Section 7 presents the methodology for selecting a coastal management strategy for the Walney Island frontage, which accords with the objectives of Defra PAG series and more recent Supplementary Guidance Notes (Defra, March 2003).

The outcome of this process recommends a series of actions that offer both strategic management and site-specific measures (see section 7.9). The Strategy is summarised below:

- Introduce a Beach Response Management System (BRMS) for the island (PAR 1).
- Ensure that sustainable protection is provided to Bent Haw and Low Bank landfill sites, planning for realignment should this be possible and appropriate in the future (PAR 2).
- Develop an effective strategy for suitable flood re-routing, community flood warning and forecasting based on the current work for the Tidal Triggers (TRITON) project set up for Morecambe Bay and tested for Walney Island (PAR 3). This would follow or include an assessment to gain greater confidence on extreme water levels.
- The above three PAR's may require specific sub-studies to be undertaken in conjunction:
    1. Defence Resource Study (as part of PAR 1 – BRMS). This would be an island wide assessment to identify materials that can be used for more appropriate defences, the nature/volumes of the material, suitable storage locations and possible end uses. This would include study on the effectiveness of the current arrangement of the groyne at Earnse Point.
    2. Implementation of Managed Realignment (as part of PAR2). This study would involve liaison with landowners, and all other key stakeholders on the best approach to implement managed realignment on Walney Island.

All of the preferred solutions presented above are technically sound and adhere to the current priority scoring criteria set by Defra. The three separate PARS are integrally linked and are vital to better determine the social and environmental implications of managed realignment on the island. PAR 1, for example, could also be widened to include habitats such as the east coast salt marshes.

No options proposed are believed to impact adversely on the natural or human environment and in fact, most have the potential to improve both habitat re-creation and safety issues without compromising long term sustainability principles. Appropriate design measures and Appropriate Assessments will need to be proposed as part of the detailed PAR recommendations in due course. The following mitigation measures would need to be implemented as part of this Strategy.

- With specific reference to the potential works on the hinterland, plant equipment and personnel will not be permitted to go onto the vegetated shingle areas without prior agreement and acceptance by English Nature.
- Any works should not coincide when the majority of the passage and wintering birds arrive in the area, between July and August. In addition, there are some specific requirements for monitoring (via BRMS) of the coastal vegetated shingle areas including regular habitat surveys of the vegetated shingle to measure the effectiveness of the recycling/recharge approach for this area.

## 8.3 Funding

Defra administers grant aid for capital defence schemes for both coastal and flood defence. Grants are available to Coast Protection Authorities and the Environment Agency toward approved capital expenditure on the construction of new coast protection schemes, sea defence schemes and flood warning systems. Coastal defence strategy plans, studies and beach management schemes are also grant eligible, which are made under the Coast Protection Act 1949 (for defences against erosion) and sea defences (defences to mitigate against flooding) under the Water Resources Act 1991 and Land Drainage Act 1991.

Following on from this coastal defence strategy, Authorities promoting a scheme are required to produce a summary scheme submission (Form LDW14) for each application. This summary document details the scheme's compliance with the absolute thresholds and forms the basis for the priority score. Schemes attaining the required priority rating proceed to the third level where an Engineer's Report is submitted in support of a formal scheme application to Defra. Once approved, grant aid may then be awarded. Defra may also postpone approval of the grant. LDW14 forms have been prepared for the recommended approach presented in this Strategy (see section 7.8).

Defra will not fund issues linked to landfill or highway relocation (or associated drainage issues). Likewise, studies to assess direct contamination will not be available from Defra Flood Management. Cumbria County Council are the key organisation for funding landfill related projects.

## 8.4 Future Reviews

All coastal defence strategies should be subject to periodic review to reflect changes in the area, improvements in understanding of the processes involved, the results of monitoring and any other information gained from scheme implementation. They are a vital link in the feedback chain, which ensures the expertise and knowledge accumulated is used actively in the development of future strategic planning. The Walney Island Coastal Management Strategy will be reviewed on a rolling five-year programme from the date of the adoption of the final document (Summer 2004). This means that the first review should take place in 2009. The results of future monitoring exercises (BRMS implementation) will be used to assess any changes in the rate of erosions or shoreline recession so the recommended defence strategy can be reviewed accordingly.

## 8.5 Flood Warning and Emergency Planning Recommendations

Flood warning during the February 2002 event was poor on Walney with limited coordinated pre-event or post-event assistance from the Environment Agency. Historically, local residents have relied more on local radio than flood warnings from EA. It is recommended that flood warning and post-event appraisal issues are more closely managed in future, partly through BRMS and better coordination with the Agency (e.g. Tidal Triggers project). The Strategy Study has focused more on how to ensure that emergency services access can be improved. Linked to the issue raised above, it is recommended that a Flood Emergency Action Plan for Barrow BC is produced (as part of PAR 3) through consultation and close liaison with EA. This could put forward flood re-routing options for localised areas (based on from more detailed digital terrain modelling work).

## 8.6 Conclusions

This Strategy Study complies with the guidelines set out in FCDPAG 2, setting out a framework for strategic consideration of appropriate flood or erosion risk areas relating to the Walney Island frontage as a whole.

Importantly, consultation with key stakeholders has been an essential element of strategy development with all relevant stakeholders being involved throughout the process. On-going consultation, liaison and co-operation are seen as being integral to providing workable arrangements that can be adopted by both public authorities and local stakeholders alike.

Risk management, as defined in FCDPAG4 has also been carried out throughout the life of the study and is presented throughout all stages of the report. This starts with an identification of the problems and key issues (Section 3) and is presented as a more detailed Risk Management exercise, summarised in Section 8 and detailed in Appendix G. Opportunities and constraints, as far as possible, have also been set at an early stage to assist in selecting possible options for further study.

Appropriate boundaries have been set in relation to the objectives of the Strategy. These have been established in close consultation with key stakeholders and address the identified problems without presupposing any specific solution.

The economic calculations presented in this Strategy Plan broadly follow the FCDPAG3 approach, including the latest guidance as set out in the Defra Supplementary Note 2003. Environmental appraisal at the strategic level has been followed and complies with the recommendations set out in FCDPAG5.

A range of different options has been considered. These have been sequentially analysed against the key objectives and analysed against risks and sensitivities (natural and economic) to assess option robustness. All of the preferred solutions presented above are technically sound and adhere to the current priority scoring criteria set by Defra.

In conclusion, the proposals adhere to a “Sustainable Selective Intervention” policy which is put forward in this Strategy. This represents the best approach to managing the coastline for the foreseeable future. It is promoted as being of significant benefit in protecting key assets (landfill tip sites) and future risk is managed through the implementation of improved beach monitoring (BRMS) and appropriate flood forecasting and warning.