

# Environment and Sustainability Committee

## E&S(4)-20-12 paper 7

### Inquiry into Coastal Protection in Wales – Evidence from Halcrow Group Limited

#### Introduction

The National Flood and Coastal Erosion Risk Management Strategy (Welsh Government, November 2011) sets out four overarching objectives for flood and erosion risk management in Wales:

- **reducing the consequences** for individuals, communities, businesses and the environment from flooding and coastal erosion;
- **raising awareness of and engaging people in the response** to flood and coastal erosion risk;
- **providing an effective and sustained response** to flood and coastal erosion events;
- **prioritising investment** in the most at risk communities.

A summary of how the objectives of the Strategy have been reflected in the Lavernock Point to St Ann's Head second generation Shoreline Management Plan is provided below.

#### Lavernock Point to St Ann's Head second generation Shoreline Management Plan (SMP2)

Halcrow Group Limited (Halcrow) was commissioned by the Swansea and Camarthen Bay Coastal Engineering Group in January 2009 to develop the second generation Lavernock Point to St Ann's Head Shoreline Management Plan (SMP2).

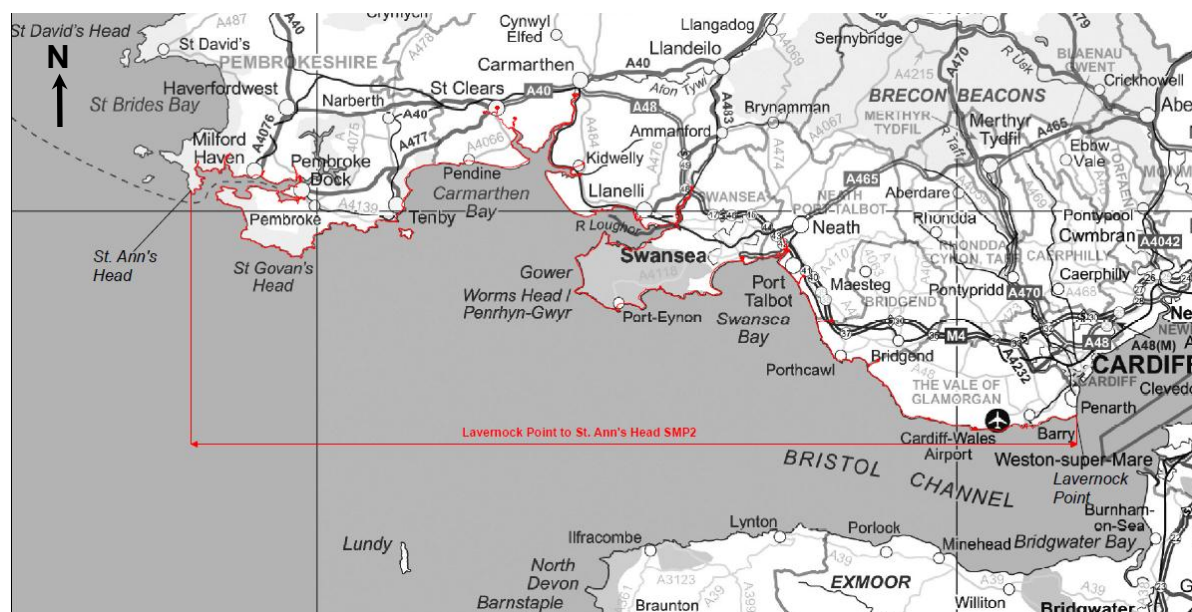


Figure 1.1: Lavernock Point to St Ann's Head SMP2 Study Area

The National Strategy had not been developed at the start of the SMP2 study, but the former "New Approaches" programme was in place. SMP2 policy appraisal was based on an examination of all benefits with a focus on reducing the risk of coastal erosion and flooding to people and maintaining the tourist/ recreation value of existing coastal amenities which have socio-economic benefits to the wider community.

From the outset of the development of the SMP2 it was recognised by Halcrow and the Client Steering Group (CSG) that there is a risk with respect to the future availability of public funding for coastal erosion and flood risk management and that alternatives to continuing

present management practices such as “hold the line” policies needed to be considered seriously.

On 19 February 2009 Halcrow (Marcus Phillips) attended an initial meeting with officials representing the Welsh Government (Kerry Keirle) and Environment Agency Wales (Natalie Newton) to seek guidance on Welsh Government scheme priority and future funding availability to inform the development of the SMP2. It was confirmed that the Welsh Government were in the process of considering options with respect to scheme prioritisation.

SMP2 Guidance developed collaboratively by Defra and WAG recommends that preferred policies are as sustainable as possible into the long term, defining sustainable policies as “those which take account of the relationships with other defences, developments and processes, and which avoid, as far as possible, committing future generations to inflexible and expensive options for defence” (Defra, 2006). From this statement, it is apparent that the best theoretical policy would be to work with natural processes and seek to maximise the extent of coastline that can change naturally. However since it is also necessary to consider the balanced needs of the human, natural and historic environments, this is not always acceptable or appropriate.

One of the main objectives of the Lavernock to St Anns Head SMP2 was to achieve ‘balanced sustainability’ by considering together the needs and objectives of people, nature, cultural heritage and economic development. It is however often impossible to fully achieve all of the often conflicting objectives of these sectors together. For example, building large-scale defences to reduce the risk of coastal erosion and flooding to a coastal town would conflict with objectives to allow the coastline to develop naturally. Careful planning, management and close liaison with the Client Steering Group (CSG – including representatives from the maritime local authorities (engineers and planners), Environment Agency Wales and Countryside Council for Wales) throughout the development of the SMP2 has resulted in a balanced plan which considers these issues both now and into the future.

All SMP2s have been developed consistently around the coast to consider policy development over 100 years split into three epochs, the short term (0 to 20 years), medium term (20 to 50 years) and long term (50 to 100 years). Welsh Government requested that a transition period was adopted in the short term (0 to 20 years) prior to adopting a change to the existing coastal erosion and flood risk management approach. This ties in with the typical residual life of existing coastal defences for the Lavernock to St Anns Head SMP2 study area, although the risk of flooding is likely to increase over this period. Since a risk management approach to coastal erosion and flood risk management has only recently been adopted in Wales some period of transition is necessary.

For example at Amroth, Pembrokeshire County Council, the preferred SMP2 policy between year 0 and year 50 was defined as Hold the line for as long as possible through maintaining the existing defences to ensure that the risk of erosion is managed, but do not improve the standard of flood protection. Adopt adaptive measures to manage increased risk of overtopping and flooding over time. Thereafter, between years 50 and 100 the policy is no active intervention, once the defences fail, allow the shoreline to naturally evolve and retreat along this frontage. Sensitivity of preferred policy: Amroth is a small holiday resort comprising a limited number of residential, amenity and tourist facilities. Coastal erosion and flood risk management is likely to become increasingly difficult and expensive in the long term as a result of sea level rise, in relation to the number of residents and assets at risk. A key influence on long term policy is therefore the technical and economic sustainability of defences. This policy is sensitive to high level future public funding and investment decisions.

The economic appraisal undertaken during the SMP2 identified the number of residential properties, residents, non-residential properties, areas of agricultural land and key/ strategic infrastructure assets which are at risk from coastal erosion and flooding in the long term (100 years). The economic review also included an initial appraisal of undiscounted benefits and costs associated with the preferred SMP2 policies.

As part of the SMP2 economic appraisal a high level sensitivity analysis was undertaken to define the additional number of residential and non-residential properties would be at risk from future sea level rise. Along the SMP2 coastline the additional number of properties at risk was typically small (less than 4% assuming 1m future sea level rise), compared to the number of properties which are currently at risk, since the topography rises steeply from the existing flood plain, see Table 1.1.

Table 1.1: Number of residential and non-residential properties at risk from future sea level rise (1 in 1,000 year return period extreme tide event, excluding existing defences)

<b>Residential properties in coastal flood risk area</b>		
Excluding sea level rise	1m future sea level rise	2m future sea level rise
12,927	13,416 (489 or 3.8%)	14,024 (1,097 or 8.5%)
<b>Non-residential properties in coastal flood risk area</b>		
Excluding sea level rise	1m future sea level rise	2m future sea level rise
2,592	2,686 (94 or 3.6%)	2,767 (175 or 6.8%)
(Figures in brackets indicate the additional number of properties which are at risk from flooding as a result of future sea level rise)		

The CSG is aware of the need to review the affordability of the SMP2 once Welsh Government funding policies and priorities have been confirmed. High level decisions will need to be made on the appropriate distribution of public funds across the whole of Wales. In liaison with Welsh Government, the CSG will review what needs to be delivered against available funding and develop a medium-term delivery plan for the SMP2 area. It will be necessary to investigate alternative funding options where it is not possible to justify or affordable for public investment in coastal erosion and flood risk management.

In addition to funding uncertainties, the justification for a particular preferred SMP2 policy may also change in the future due to other uncertainties such as future climate change (sea level rise, increased storminess, changes of river flows in estuaries), rates of cliff retreat, estuary response, future development of key industrial assets, critical infrastructure, ports and dock operations, future offshore dredging operations and marine renewable energy schemes.

The SMP2 development placed considerable emphasis on raising awareness of the risks. Public consultation on the draft SMP2 (which included policy maps which illustrated the risk of coastal erosion and coastal flooding in the short, medium and long term) was undertaken over a three month period (between 6 September 2010 and 6 December 2010). On 2 September 2010, in advance of the start of the public consultation period, the CSG placed a public notice in the Western Mail and the Evening Post and issued the press release to local newspapers. Announcements were made on Bridge FM and Radio Pembrokeshire. Throughout the period of public consultation (6 September 2010 and 6 December 2010) the draft SMP2 document was available to review at local council offices, libraries and on-line at the SMP2 web-site [www.southwalescoast.org](http://www.southwalescoast.org).

### **Conclusion**

There has not been clarity on availability of public funding for coastal defences in Wales for many years and this has hindered the development of policy for managing the coast. In England there has been a formal prioritisation system for schemes seeking funding for more than ten years, with iterative changes to the system to reflect government priorities and specific targets or outcomes.