

Coastal Erosion Risk Maps within the North Solent SMP

The North Solent SMP has undertaken a proactive approach to tackling some of the concerns raised by stakeholders, landowners and the Local Authorities relating to the reality of coastal erosion, such as implications on building insurance, possibility of housing blight and value, and socio-economic and community vulnerability. As a result the following Frequently Asked Questions has been produced, which aims to assist understanding and interpretation of the Coastal Erosion Risk Mapping used to produce the North Solent Shoreline Management Plan.

1 Why have the indicative coastal erosion risk maps been produced?

A Shoreline Management Plan (SMP) provides a broad assessment of the tidal flooding and coastal erosion risks associated with coastal processes. By identifying the scale and extent of the tidal flood and coastal erosion risks, the SMP aims to provide guidance to coastal engineers and managers to produce technically, economically and environmentally sustainable coastal defence policy options to reduce these risks to people, the developed and natural environments over three time periods (called epochs):

- present day (0-20 years)
- medium-term (20-50 years)
- long-term (50-100 years)

At present, flood risk from rivers and the sea are mapped (available from the Environment Agency) to inform the public and authorities. New interactive maps showing how coastal erosion risk will be managed within the North Solent will be published on the Environment Agency's website after the SMP is completed.

The North Solent SMP has produced a visual presentation of the potential areas at risk of coastal erosion and impact of climate change in the coastal zone in a non-technical way, which it is hoped will be a valuable contribution in informing and raising awareness to the public, landowners, Officers and Elected Members, of the locations, scale and extent of the possible implications of coastal change and the potential impacts of climate change within the coastal zone. The SMP has mapped the coastline within the North Solent that are susceptible to erosion and instability from natural processes, such as wave attack, whilst also considering the influence of existing coastal protection and flood defence structures and management activities.

2 How have the indicative erosion rates been calculated?

The current shoreline position was identified and used as the baseline against which average annual erosion rates were applied. Approximately 80% of the North Solent SMP shoreline is currently defended, so a variety of data sources were analysed, that spanned the period from the 1940s to present day, to identify shoreline behaviour prior to the construction of many of the

existing defences; these were generally focussed on the shoreline of the open coast. Data sources included aerial photography, topographic surveys, geology and geomorphology, flood and erosion risk strategies and the National Coastal Erosion Risk Mapping programme.

The harbours were treated differently to the open coast due to lack of data for undefended sections of eroding shoreline. The eroding Hayling Billy frontage was used as a proxy for erosion in Portsmouth, Langstone and Chichester harbours. An average erosion rate of 0.2m per annum was applied to south-westerly facing frontages and a rate of 0.1m per annum to south-easterly facing frontages in all three harbours.

The existing defences were assessed to identify type of defence, condition, and estimates of their remaining or effective design life (termed residual life) and standard of protection they provide. The annual average erosion rates were applied to the shoreline baseline when the existing defences reached the end of their design life or natural defences (e.g. saltmarshes, barrier beaches) were predicted to have sufficiently or completely eroded to no longer provide protection to the mainland from wave attack. Where no defences occur or existing defences had already reached the end of their effective life, the erosion rates were applied from Year 1. Due to uncertainty and variations of climate change, sea level rise, ground water, geology, and other environmental factors, the erosion rates and identification of areas at risk from erosion are indicative only.

3 What do the SMP coastal erosion risk maps show?

The maps present the potential coastal erosion that may be expected under two scenarios:

No Active Intervention – this reflects no expenditure on maintaining or improving existing coastal and flood defences; therefore defences will fail at a time dependent upon their effective design life and the condition of the fronting beaches and inter-tidal areas. This presents a worst case scenario of the scale and extent of properties and assets potentially at risk if defences failed.

With Present Management – this reflects a continuation of all existing defence practices; defences are maintained to provide a similar level of protection over the next 100 years to that provided at present. In some cases this will require considerable improvement to existing defences to maintain their integrity and effectiveness. Presently redundant structures do not form part of this analysis. Erosion is indicated for frontages where the shoreline is currently undefended.

4 What level of detail is available?

The maps are published at the scale of 1:12,000. Total numbers of properties potentially at risk of erosion within each time period (epoch) have been determined for each scenario using Address Point-type datasets. These

datasets identify locations of properties with a registered address. Therefore the totals of properties are purely indicative and do not include out buildings and other buildings that have not been registered with an individual address. Individual properties have not been identified and further detailed studies are required at a more localised scale.

5 What are the implications for house owners whose houses are shown at risk of being eroded, with or without defences?

The maps of potential erosion risk are based on publicly available datasets such as coastal monitoring programme reports and national Environment Agency programmes. The publication of these maps does not introduce a new or increased risk to properties, land holdings or other assets potentially at risk from erosion. The aim of this information is to increase awareness of the potential risk of erosion, to identify those coastal frontages where erosion is a considerable threat, and to identify areas that are generally stable.

The Department for the Environment, Food and Rural Affairs (Defra) is currently working with Local Authorities, government agencies and consultants to better understand, appraise and quantify coastal erosion risks, through the National Coastal Erosion Risk Mapping programme. The SMP development programme will help central government to prioritise funding for appropriate coastal management strategies.

6 What is being done to reduce the risk to properties/ landowners/ businesses affected?

The strategic management framework for coast protection in the UK is set out by the Department for the Environment, Food and Rural Affairs (Defra) and comprises a tiered approach to the management of flood and erosion risks. Due to the current legislative and funding arrangements, climate change and environmental considerations, it may not be possible to protect all land or property from flooding or erosion.

Shoreline Management Plans are strategic policy documents for an entire region or sub-region. They aim to provide a broad assessment of the long-term risks associated with coastal processes and produce high-level coastal policies for improved management of the coast over the next 100 years, which are technically, economically and environmentally feasible, viable and sustainable.

The Floods and Water Management Bill contains proposals to manage flood and coastal erosion risk by widening the portfolio of management measures, from the 'traditional' concrete defences, to awareness campaigns, emergency planning, community defences and resilience measures. This broadened approach, which will encourage and support communities to develop resilience by adapting and building adaptive capacity, is essential if we are to adapt to our changing climate. Furthermore, the proposed Defra Coastal Change Policy focuses specifically on supporting vulnerable coastal

communities and individuals in adapting to coastal change both now and in the future.

7 Is there financial compensation payable for residents whose properties are identified as at risk?

There is no general legal right to provision of flood defences and there is therefore no provision for payment of compensation where the operating authority decides not to provide defences. The homeowner does however have the right to be engaged in the process of appraising whether investment to reduce the risk is justified. Decisions about whether or not to provide defences must be made consistently according to Government guidance and in an open, transparent manner.

The *Land Drainage Act (1991)*, *Water Resources Act (1991)* and *Coast Protection Act (1949)* all make provision for the payment of compensation for damage or injury arising directly from the execution of works, and for the purchase of land required for the construction of defences. There is also currently provision within the existing legal framework for the Environment Agency to pay compensation where it intentionally reduces the level of protection to a property for example by lowering or removing defences to help manage the flood risk elsewhere.

Flood and coastal defence legislation in England and Wales is largely permissive (i.e. there is no statutory duty to protect people or property) and does not confer any right to protection from flooding or coastal erosion or any right to any particular standard of protection where defences are provided. (In a few instances legislation does create a requirement for protection, for example there is a statutory duty on riparian owners to provide flood protection in parts of London; and the Habitats Regulations create a requirement for protection of internationally designated sites from inappropriate or damaging flooding.)

For flood protection that is ultimately funded by the taxpayer, decisions on protection are made in the light of the potential damage to assets measured in national economic terms.

Where an operating authority has provided defences, they have a common-law duty of care to maintain the defences and could be liable for damage or injury arising from negligent acts or failure to act reasonably to prevent predictable damage. If the decision is taken to abandon defences, the operating authority must follow reasonable procedures and give due notice to all affected parties.

The *Human Rights Act (1998)* provides, amongst other things, for the right to peaceful enjoyment of possessions (Article 1 of Protocol 1), and the right to respect for private and family life (Article 8). Any removal of rights must be challengeable in public proceedings under Article 6 (the right to a fair trial). Essentially, no one can be deprived of the unimpeded use of their land except in the public interest. This applies to compulsory purchase cases and to

restrictions on what people may or may not do with watercourses or flood or coastal defence structures on their land.

Private third parties can therefore continue to maintain their defences, at their own expense, without being limited or constrained by the SMP policy applied to that frontage, i.e. a shoreline with a No Active Intervention policy does not prevent the private owner from maintaining their defences. As with all flood and coastal management works, decisions must be rational and take account of the general interest (including the economic interests) of the country.