



Practical answers to coastal risk

Implementing strategies in a changing climate, UK

Our services in flood and coastal risk management help clients to plan confidently and secure funding for managing long-term risk to coastal and estuary communities and businesses.

We apply our extensive experience of flood and coastal risk management in commissions ranging from high-level national and regional strategic planning to the detailed design of capital schemes. Our intimate knowledge of the latest business-case-development and approvals requirements provides reassurance that the solutions and outcomes we offer are technically appropriate, environmentally sensitive, safe, sustainable and affordable.

Our expertise has most recently been applied in the development of the Beach Management Manual update and the CIRIA Rock Manual, as well as the National Coastal Erosion Risk Mapping project for England and Wales and the Department for Environment, Food and Rural Affairs (Defra) guidance on second-generation shoreline management plans.

Our approach

We work closely with clients and local partners to understand their underlying needs and the threats that flood and erosion risk poses to communities, businesses and the environment. The purpose of our work is to enable them to make sustainable, evidence-based decisions for managing the coast and estuaries

that are adaptable, account for climate change and gain stakeholder support.

Successful flood and coastal risk management projects rely on engagement with a diverse range of stakeholder groups, so our strong relationships with government agencies, local-authority departments, conservation bodies and other non-governmental organisations bring additional benefit to our clients.

It is widely understood that our coast and estuaries make up a sensitive interface between land and sea, affected by both local and distant conditions. We consider the many variables that influence the status quo, such as flood and coastal erosion risk, a changing climate and population levels, imposed standards for water quality, environment impact and public health and safety, and human intervention.

We apply our knowledge of coastal flooding and erosion challenges gathered from around the world. Always taking a practical approach, we analyse and develop our understanding of the many variables and processes along the coast. Our clients benefit from sustainable, multi-objective and adaptable solutions, enabling them to win the support of stakeholder groups and make informed decisions with confidence.

We set out to ensure clients can plan the long-term use of coastal and estuarine resources, compatible with natural processes, as well as satisfying management objectives.

We also understand the numerous potential sources of funding, this approach being strongly aligned with our commitment to delivering wider benefits to society.

Our services

Our coastal and estuarine expertise covers:

- data collection and analysis studies
- environmental surveys
- planning and design
- cost-benefit and multi-criteria analysis
- project management and risk analysis
- health and safety assessments
- working with stakeholder organisations and community engagement
- tourism demand surveys
- land-use and marine planning
- numerical and simulation modelling
- construction supervision, management and monitoring
- asset management

We apply these skills to projects involving:

- asset condition and performance assessments
- coastal monitoring and ocean data collection
- strategic beach management
- integrated coastal management plans
- coastal strategy studies
- shoreline management plans
- beach management plans
- coastal development
- geomorphological studies
- harbours, marinas, dredging and reclamation
- outfalls and intakes

Delivering value – case studies

■ National Coastal Erosion Risk Mapping

This project maps lengths of coast susceptible to erosion and instability caused by natural processes, such as wave action. It examines risks to built assets, taking account of existing coastal protection and management policies. The project provides predictions of future erosion hazards along the coast of England and Wales, complementing our work on the Environment Agency's National Flood Risk Assessment. The project is part of Defra's Making Space for Water programme and the Welsh Assembly Government's environment strategy, designed to inform the public and professional bodies involved in flood and coastal erosion risk management. The work also underpins Communities and Local Government's planning policy on development and coastal change.

■ North-west England and north Wales shoreline management plan review

The management plan review covers the shoreline of the open coast and estuaries between Great Orme's

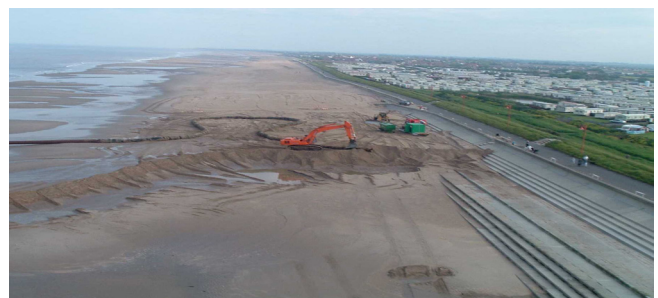
Head in north Wales and the Scottish border at the Solway Firth. We worked closely with a multi-client group, comprising local authorities in the study area, the Environment Agency in England and Wales, Natural England and the Countryside Council for Wales, to understand the range of objectives and identify sustainable policy solutions for the long-term management of flood and coastal erosion risk.

■ Folkestone to Cliff End strategy

This award-winning, 100-year, sustainable coastal strategy extends over one of the largest flood cells in England and along the coast between Folkestone and Cliff End, Rye. By understanding and analysing the complex challenges facing the natural and built environment, businesses and the community, the team identified solutions for reducing coastal flood and erosion risk to over 12,000 households. These remain compatible with natural processes to reduce the environmental impact on the internationally designated sites within the study area.

■ Swanage Beach

Halcrow advanced the design of coastal defence solutions through project appraisal and detailed design. Construction of the scheme comprised renovation or replacement of sections of sea wall, installation of timber groynes and beach recharge, providing sustainable and reduced coastal-risk solutions and significant amenity and tourism benefits. A key factor in the successful delivery was the identification and use of dredged material from the nearby Poole Harbour channel deepening project.



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