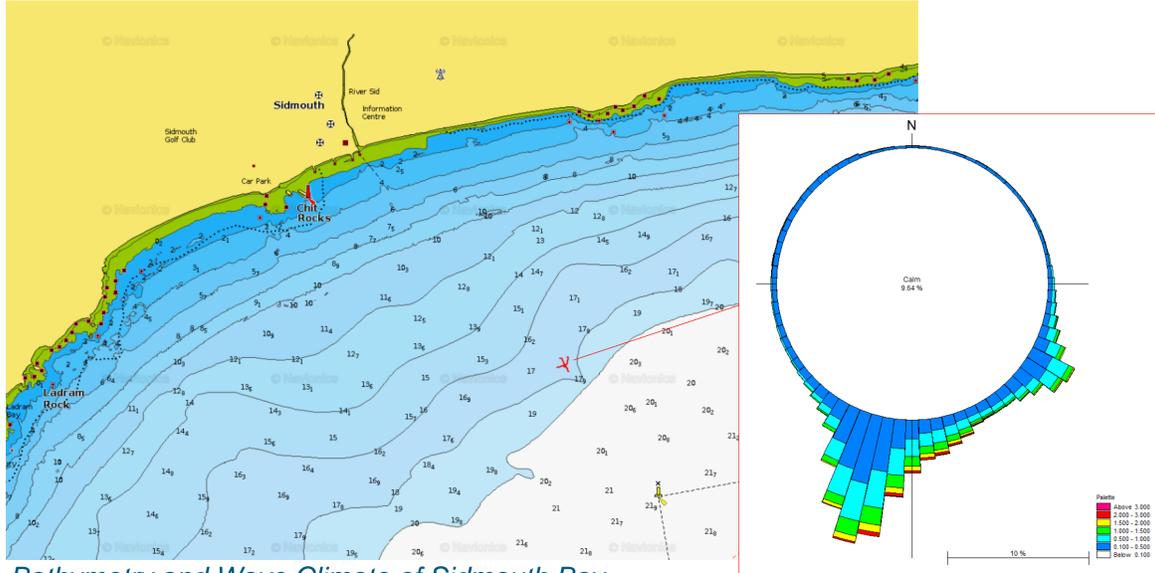


# Sidmouth Coastal Scheme

## Progress to date



Bathymetry and Wave Climate of Sidmouth Bay.

### Coastal Modelling

Detailed coastal and numerical modelling of the Sidmouth frontage has been conducted to understand the effects and impacts of the preferred option on the beach environment, the existing structures and defences and the proposals as part of the scheme.

This modelling allows the changes to shoreline processes, cliff erosion and flood risk to be understood. This was then used to compare the baseline environment to the scheme for different storm events and future scenarios.

The results are then used to estimate the cost of future flooding on the town and then the benefits of reducing this which supports the case for funding.

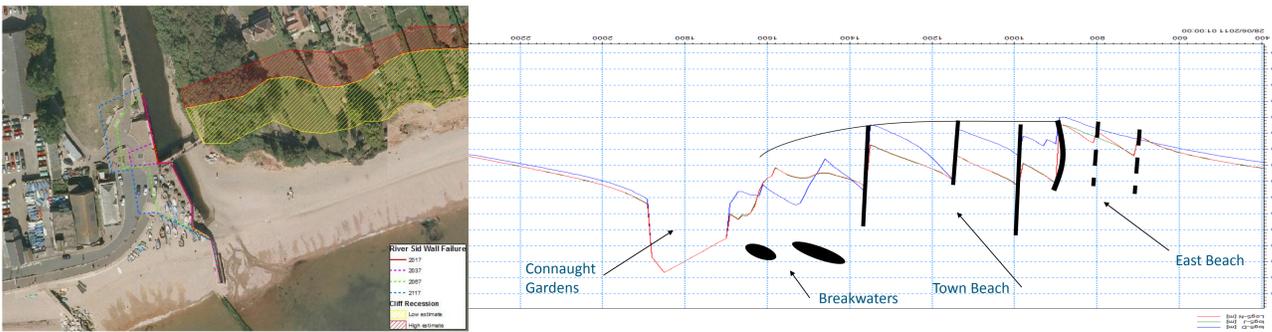
### How is the scheme simulated?

A range of computer software were used to simulate the coastal environment of Sidmouth.

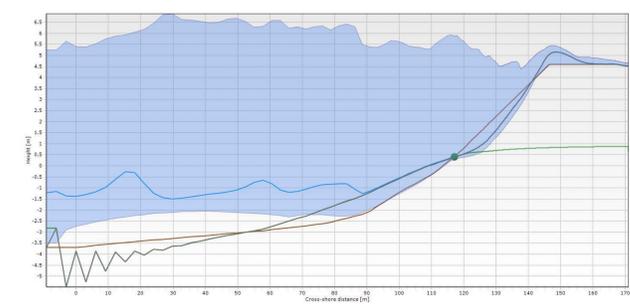
- The wave climate for different storms was simulated using a combination of bathymetric and Met Office offshore tidal data. Statistical analysis of this data allows the size of waves arriving at Sidmouth to be predicted.
- Overtopping modelling is combined with the wave climate to predict how much water might splash or flow over the coastal defences.
- Two-dimensional hydraulic modelling of wave overtopping informs the changes to flood risk within the town, showing how the dynamics affect the rate and depth of flooding.
- Long-shore Litline modelling using the wave climate and shoreline profile is then used to estimate the impact of storm conditions on the rate of movement of shingle and sediment.
- The preferred scheme can then be simulated within the different software to understand how it affects the coastal environment.



Hydraulic modelling of flood risk was conducted for different scenarios.



Shoreline modelling investigating behaviour of structures



Computer modelling analysis of storms and sediment movement.



### Engineering Investigations

In addition to the computer modelling there have been site surveys to assess the existing conditions of the structures and beach. We have also undertaken geotechnical investigations to assess the size of shingle beach material and trial pits to determine the depth of beach and the type of sediment that the new structures will be founded on.

### Environmental Screening and Scoping

Further work has been undertaken in contacting the statutory stakeholders to confirm their formal opinion on the work required to be submitted as part of the Licence and/or Planning submissions. We have also had informal discussions to understand and explore what they see as sensitivities to the protected areas and how we can best manage these with any proposals.

