

Seaton Beach Management Plan (BMP)

Non-Technical Summary – Economics Baseline

Background

East Devon District Council, working in partnership with the Environment Agency, are developing a Beach Management Plan (BMP) for Seaton, from Seaton Hole in the west to Harbour Wall on the East side of the River Axe and the Axe River up to the Axe Bridge.

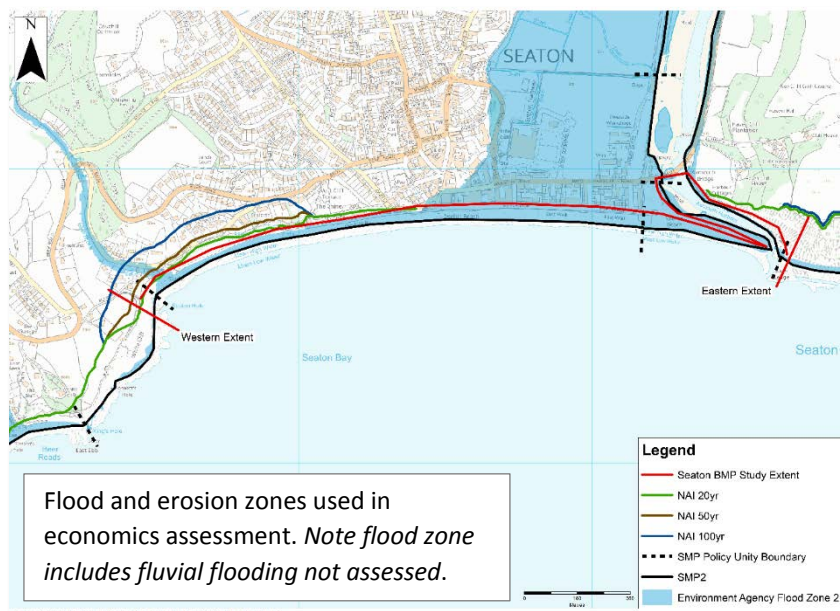
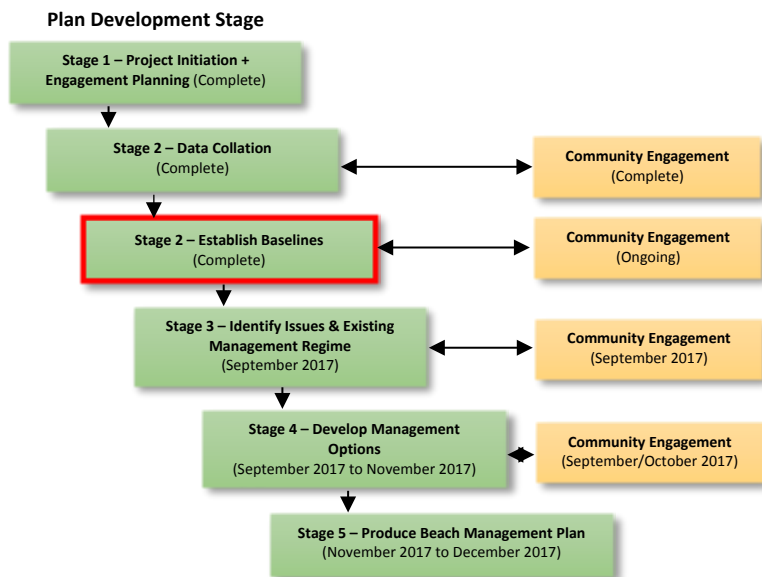
In support of the BMP development, four baseline studies have been completed; this non-technical summary covers the **Economics Baseline**.

Purpose of the Economics Baseline Report

The report provides details of the economic basis (i.e. the economic benefits) for both ongoing and future beach management and coastal flood and erosion risk management activities along the BMP frontage.

What the Economics Baseline Includes

- A review of economic assessment completed for all or parts of the BMP extent as part of previous projects to understand the economic basis on which previous coastal flood and erosion risk management activities have been justified.
- New assessment of potential flood risk damages to Seaton Town as a result of wave overtopping of the existing seawall.
- Assessment of potential erosion risk damages between Seaton Town and Seaton Hole.
- Identification of the potential Flood and Coastal Erosion Risk Management Grant-in-Aid (FCERM GiA) partnership funding contributions likely to be achievable from central government to support management activities along the frontage, as well as possible funding partners who may be able to provide additional funding contributions for future works.



Flood Risk Damages

Flood depth and extent data from the Environment Agency's recent Lyme Bay Coastal Flood Forecasting Phase 2 work has been used to undertake an initial assessment of flood risk damages for the Seaton BMP. Specifically, depth grids were available for the following return periods: 1 in 2, 1 in 10, 1 in 30, 1 in 50, 1 in 75, 1 in 100, 1 in 200 and 1 in 1000 year. All simulations were available for the present-day scenario only and so no assessment of climate change risks are included in the flood risk damages assessment.

The flood damages assessment incorporates direct property damages for saline flooding; emergency services costs; vehicle damages; residential evacuation/accommodation costs; and non-residential property indirect damages.

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Under the present-day scenario, only 20 residential properties are at risk of coastal flooding as a result of wave overtopping up to a 1:200 year (0.5% annual probability of occurrence) event, along with approximately 10 non-residential properties. The total Present Value flood risk damages over 100 years are calculated to be £571,000.

Erosion Risk Damages

Erosion risk damages have been calculated by determining the number of cliff top property assets at risk of coastal erosion under the no active intervention scenario. This used available erosion risk mapping from the Shoreline Management Plan (which also aligns to the National Coastal Erosion Risk Map and assumes an average annual cliff recession rate of 0.5-1.0m/year) along with average property prices for the area based on information from property websites.

A total of 21 properties fall within the 100-year erosion risk extent. In addition, a section of the alternative and important local coastal route is also at risk (at the junction Old Beer Road and the B3172) and costs would be incurred to manage changes to this junction (thus it can be considered in the economics damages assessment as being potential costs avoided by “doing something”). Another 9 properties fall just beyond this 100-year erosion risk extent and could be affected by loss of access or proximity to the realigned cliff edge.

Based on this factors, Present Value erosion risk damages to property assets only over 100 years is calculated to be £4,843,000, whilst Present Value erosion risk damages to highways and utilities only is calculated to be £664,000.

Key Conclusions

Based on the information summarised above, the Present Value damages for the BMP frontage is calculated to total £6,078,000 over 100 years. Given the limitations of available data, this total is considered to be a minimum level of benefits that would justify FCERM activities in the near future, particularly in regards to flood risk along Seaton town part of the frontage. Further assessment (see below) would be expected to significantly increase the PV damages totals over a 100-year appraisal period.

It should be noted that based solely on this £6,078k PV damages figure, plus residential properties assessed as being at present risk, then this would yield approximately £560k of FCERM Grant in Aid funding over 100 years. This returns about £490k for the western erosion risk part of the BMP frontage and £70k for the eastern coastal flood risk part of the BMP frontage. Based on this, a significant proportion of any future funding needs for beach management activities will need to come from non-FCERM-GiA sources.

Recommendations for Further Work

Further work could aid refinement of the economic case calculated as part of the BMP economics baseline. Key areas to focus on would be:

- Additional flood modelling to assess impact of climate change on 100-year flood risk damage total values, supported by a property threshold level survey.
- Refinement of the erosion risk assessment analysis to further define “year of loss” for each property and more bespoke property valuations assuming properties were not “at risk” of coastal erosion, along with refining the assumptions about costs associated with loss of highway infrastructure.
- Assessment of amenity / recreational value the BMP extent, supported by bespoke visitor survey/visitor numbers data for Seaton (only data at East Devon-wide level is currently available).
- Begin discussions with potential funding partners to develop relationships and possible additional funding sources to support what funding will be available from FCERM-GiA.