Report to: **Cabinet**

Date of Meeting: **5th September 2016**

Report Title: **Coastal Medium Term Plan**

Report By: **Monica Adams-Acton**
Assistant Director for Regeneration and Culture

Purpose of Report

To update Cabinet on a major Coast Protection project that has recently gained approval for grant funding.

Recommendation(s)

1. Delegated authority is given to the Director of Operational Services, in consultation with the Lead Member for Regeneration and Culture for the tender and contract for the works, based on the Environment Agency funding arrangements.

Reasons for Recommendations

Hastings Borough Council as Coastal Protection Authority has permissive powers under the Coast Protection Act 1949 to carry out capital and revenue works to protect against Coastal Erosion. The Environment Agency (EA) maintains responsibility for Flood Risk Management.

In 2009 we successfully bid for approximately £300k from DEFRA (Department of Environment Food & Rural Affairs) for a relatively small scale coast protection scheme, to construct a new rock groyne at Carlisle Parade and to undertake concrete repairs to groyne 1, at Rock a Nore.

The rock groyne was built with the understanding that it would be the initial stage of improvement works in this vulnerable area of our seafront and the hope was that within five years the scheme would be improved, reusing the limestone rocks.

Stage 2 of the scheme will be completed in two phases over 2016 and 2017. It includes the construction of two rock groynes and shingle replenishment at Carlisle Parade and repairs and rock defence construction of the Harbour Arm.

The £4,061,000 is funded almost entirely by FDGiA (Flood Defence Grant in Aid) from DEFRA. HBC will be asked to contribute £30,000 towards the scheme funded from our rolling capital defence works programme.

Hastings Coastal Defence Works Stage 2

Background

1. Up until 2007 overtopping by waves of the seawall at Carlisle Parade occurred on a regular basis. In October 1999 a 1 in 10 year storm caused flooding to the underground car park and other buildings in the area.

2. Since a new rock groyne was built in 2009 and beach recycling into that area has taken place, the incidence of flooding has reduced. However, the beach level there is now very low and flood risk has again become high.

3. The risk of flooding from overtopping in this area has been recognised in the later versions of EA Flood Maps and for that reason the Town Centre is one of the additional areas now included in Multi Agency Flood Plan developed earlier in 2016.

4. Risk from coastal erosion and flooding is identified through studies, surveys and improved modelling. Policy towards risk based management is set down in the Shoreline Management Plan and detailed within Coastal Strategies for the areas covering our coastline.

5. The potential need for schemes to be funded through FDGiA grants are highlighted and evaluated centrally by the EA using a process of Medium Term Planning, towards which Hastings Borough Council submits an updated programme each year. The scoring system allows DEFRA to allocate central government budgets.

6. Hastings Borough Council received £85,000 of funding and support for this proposed scheme to be developed through the RFCC (Regional Flood & Coastal Committee) in 2015. A Project Appraisal Report (PAR) that details the issues, design, costs and benefits was produced on HBC's behalf by Canterbury City Council (CCC). They will also project manage the scheme's delivery and provide site supervision during the construction phase.

7. CCC still retain an extensive engineering department and we benefit from both their skills and local experience through a framework agreement with the East Kent Engineering Partnership. They have provided both informal advice and support and well as project management services (including the 2009 capital works) for a number of years to HBC at considerably reduced rates than we would pay for commercial engineering consultants.

Present Situation

8. Over the last year, there has been a significant reduction in the size of the beach protecting the seawall along the main Hastings seafront for a distance of 700m east of the Pier. The overall rate of erosion of this length of beach from 2009 to 2015 has averaged 3,700 m^3 per year. Accurately measured by the Strategic Coastal Monitoring Programme surveys that includes Hastings.

9. The most critical location for seawall stability and overtopping is a 50m length immediately downdrift of the existing rock groyne. Using the long term rate of change at this location it is predicted that the beach will all be lost within 15 years. In a further 5 years (2036), a further length of 250m of seawall would have no beach protection to the toe and would be at risk of breaching.

10. Once the seawall has breached erosion of the land behind will commence. The land for at least 300m behind the seawall east of the Pier is reclaimed. This is made up of sandstone eroded from the cliffs behind, beach shingle and general fill material. As soon as the seawall fails the action of the sea on the unprotected fill behind the breach will quickly extend the spread of erosion.

11. Flooding from overtopping, caused by water flowing across to Harold Place and then running downhill to the low level area of the town centre, potentially effects 32 residential properties and 178 commercial units. If nothing is done a further 272 residential and 93 commercial properties will be lost as a result of coastal erosion over a 50 year period.

12. The main A259 coastal route from Folkestone through to Brighton is also protected behind the seawall along this stretch of seafront. This road would be immediately lost as soon as the seawall fails. There is a trunk sewer rising main running under the A259 which would also be lost as soon as the seawall fails.

13. The second problem area is at the Harbour Arm, which acts as a terminal groyne protecting the large beach to the west. There are gaps in the upper part of the structure and in general the overall condition is poor. The length most at risk is the middle section where the remaining life of the structure is identified as between 0 and 15 years.

14. As well as the structural integrity problem, overtopping has increased at the parts where the upper structure is missing, resulting in cliffing of the beach and difficulty with launching of the fishing fleet. This issue was identified and explored in detail as part of the Coastal Adaptation Pathfinder Project.

15. If the middle part of the structure fails this will eventually cause the whole beach to the west to retreat to its natural orientation. In total 305,000 m3 of shingle would be lost through the failed Harbour Arm. A conservative rate of 30,000 m3 is used in this analysis resulting in it taking 10 years for the beach to regress from the present condition to a substantially reduced beach in front of the seawall at Pelham Place car park. Further west, where the beach is currently much smaller, the beach would regress such that there would be minimal protection to the seawall.

16. In addition to the loss of property, the failure of the seawall would also result in a rapid degradation in the amenity, tourist and recreation value of the seafront and seaside town, particularly because a part of the town centre would also be eroded. The Tourism Southeast annual report for Hastings for the year 2014 estimates staying trips in the order of 420,000 and day trips of 3,200,000.

Options Considered and Design Choice

17. A full range of options were considered to improve the situation and protect the seawall and Harbour Arm. These included building a new higher seawall, placing a

rock revetment in front of the seawall and various forms of groynes to contain the beach. Timber groynes were also examined, but they would have to be relatively close-spaced and would tend to distract from the open beach at this location.

18. A new rock groyne together with beach recycling at Carlisle Parade was chosen, as this was considered to be most in keeping with the existing environment at this location - an open beach with minimal intrusions. The existing rock groyne to the west blends in well with the environment and the type and colour of the rock for the new groyne would be similar.

19. It is considered that the new rock groyne will not impact on the significance or setting of the conservation area and its construction will benefit the area in that it will protect it from damage and loss as a result of coastal erosion and sea flooding.

20. Using the preferred option the standard of defence would be sustained at 0.5% standard of protection for the 50 year life of the project i.e. a 1 in 200 year storm.

21. The work will be carried out in two phases with phase 1 of the contract programmed to be in Year 1 (2016). One new rock groyne would be built using 1,760m^3 of 3-6 tonne limestone or granite armour rock. Delivery of the rock would be by sea, probably on side tipping vessels. The existing rock groyne would also be raised to be of similar profile to the new groyne, requiring a further 610m^3 of rock.

22. The improved beach would be formed by recycling approximately 27,000m^3 of shingle from the large existing beach to the west of the Harbour Arm. The cost savings through shingle recycling, as opposed to dredging and importing, have contributed to the cost benefit of the scheme.

23. In order to maintain access to the beach between the existing rock groyne and the new one, a set of new timber steps will be constructed of similar form to those that exist elsewhere along the Hastings seafront. These will provide valuable additional access to an increasingly popular area of beach and promenade.

24. The second phase programmed for 2017 would be for the reinforcement works to maintain the structural integrity of the middle and outer section of the Harbour Arm. A total of 14,500m^3 of rock protection is likely to be required using 9-12 tonne armour rock placed on both sides of the existing structure and on the top where there are gaps. At the same time the inner landward section of the Harbour Arm structure would be refaced with a total of 175m^3 of concrete over a 70m length.

Financial Implications

25. Phase 1 costs in 2016/17 were estimated at £812,000 including contingency, fees and supervision. Phase 2 costs are similarly estimated at £3,249,000, giving a total scheme total of £4,061,000 as part of the PAR submitted in March 2016 to National Project Assurance Service (NPAS) of the EA.

26. We applied to NPAS for an approval sum for the two contracts of £3,275,000 plus an Optimism Bias contingency of £786,000 making a total project cost of £4,061,000. Funding through FDGiA has now been approved for £4,031,000 with a contribution of £30,000 from HBC.

27. The £30,000 contribution will be funded from HBC's Coast Protection Works Capital programme which has an allocation of £35,000 annually. Any planned maintenance and refurbishment works that would have been carried out during 2016/17 will be postponed until 2017/18. Responsive repairs and maintenance can still be carried out using revenue budgets.

Next Steps

28. The scheme requires a licence through the Marine Management Organisation (MMO) and this has been applied for in advance of approval. In addition, the scheme has also been advertised by HBC in the local paper and initial notification and consultation has been carried out with a range of local stakeholders (including the Fishermens Protection Society, RNLI, Coastguard, Angling Clubs, Pier etc)

29. More detailed consultation and liaison will be essential, particularly with fishermen once the contract is awarded and a detailed programme of works is developed. This will be specially critical for the Harbour Arm works in phase 2.

30. A planning application has been submitted for the construction of the new rock groyne. A second application for the Harbour Arm works will be made once the works are detailed.

31. Work will be undertaken outside of summer months in order to avoid disruption to tourism and minimise the risk to people during plant movements. During works, safety barriers and clear signage will be used to prevent the public from being in the vicinity of heavy plant. Subject to receipt of the necessary consents and approvals it is anticipated that phase 1 works will start on site during mid-September 2016 and should be completed by early December.

32. CCC has already tendered phase 1 works and these are currently being evaluated. Once a contractor has been identified and appointed CCC will work with HBC Legal Services who will be responsible for issuing the contract documents.

33. Further surveys and site investigation will be carried out in November 2016 to inform the Phase 2 works to the Harbour Arm. These will then be tendered during April/May 2017 with works starting during September 2017. They are anticipated to last 12 weeks, finishing in early December.

34. There is likely to be considerable local interest in the works and the last smaller scheme that was carried out also attracted local and national news teams. The rock delivery, for example, can be particularly dramatic.

Wards Affected

Castle, Old Hastings

Policy Implications

Please identify if this report contains any implications for the following:

Equalities and Community Cohesiveness No

Crime and Fear of Crime (Section 17)	No
Risk Management	Yes
Environmental Issues	Yes
Economic/Financial Implications	Yes
Human Rights Act	No
Organisational Consequences	No
Local People's Views	Yes
Anti-Poverty	No

Additional Information

Appendix A – Plan of Proposed Works

Officer to Contact

Nick Sangster
nsangster@hastings.gov.uk
01424 451138