

FAREHAM

BOROUGH COUNCIL

Report to the Executive for Decision 11 July 2016

Portfolio:	Planning and Development
Subject:	Hill Head Coastal Protection Project: Proposed Phase 1 Scheme
Report of:	Director of Planning and Regulation
Strategy/Policy:	River Hamble to Portchester Flood and Erosion Risk Management Strategy and North Solent Shoreline Management Plan
Corporate Objective:	Protect and enhance the environment, safe and healthy place to live and work, leisure opportunities for health and fun.

Purpose:

To seek approval to undertake Phase 1 of the Hill Head Coastal Protection Project. The proposed works involve beach re-nourishment and extensive groyne maintenance at Hill Head and to carry out the detailed design, including ground investigation works, required for seawall replacement.

Executive summary:

The coastal defences at Hill Head include the beach, groynes and seawall. Beach levels have fallen in recent years exposing the sea defences to additional and increased wave action, leading to sea defence failure on frontage 'A' (see Appendix A Location Plan). Frontage 'A' has now reached the end of its serviceable life and is unable to withstand this additional and increased wave action, failing regularly, leading to expensive repairs. The groynes also require extensive maintenance.

The recommended policy from the River Hamble to Portchester Strategy, adopted by Fareham Borough Council in 2015, is "Maintain protection – Undertake scheduled maintenance and beach recycling to prevent erosion and maintain beaches through the development of a Beach Management Plan (BMP)". The implementation of a BMP however is yet to be realised.

The Hill Head Coastal Protection Project proposes to address the frontage issues through delivery of two phases:

Phase 1 (commencing 2016) - Beach re-nourishment to replenish historically low beach levels at Hill Head and implement extensive maintenance repairs to Council-owned groynes and progress the detailed design of a replacement seawall along frontage 'A' including ground investigation works.

Phase 2 Seawall replacement works to replace failing sea defences along frontage 'A' (commencing 2017, subject to a separate Executive Report to be considered in March 2017).

The details set out in this report have been developed in collaboration with the Hill Head Coastal Management Members Working Group, chaired by the Executive Member for Planning and Development.

Recommendation:

That the Executive:

- (a) approves the Beach re-nourishment to replenish the historically low beach levels at Hill Head and implement extensive maintenance repairs to FBC owned groynes at Hill Head;
- (b) approves proceeding with Detailed Design of the replacement seawall along frontage 'A' including Ground Investigation works; and
- (c) in the interests of expediency approves that the Director of Planning and Regulation is given delegated authority to award the contracts to deliver Phase 1 of the Hill Head Coastal Protection Project, after consultation with the Executive Member for Planning and Development.

Reason:

The seawall at Hill Head has reached the end of its serviceable life and is at high risk of significant failure during future storm events. At risk from seawall failure is the public promenade which sits on the seawall, 39 beach huts adjacent to the promenade. The important infrastructure route of Cliff Road is at risk 20 years after failure and up to 10 residential properties are at risk 50 years after failure.

The beach management activities of beach re-nourishment adjacent to the poor condition seawall and extensive groyne maintenance works will improve the coastal protection provided by the beach. The advantage of this approach is that the detailed design for replacing the promenade wall (Phase 2) will be developed, during the delivery of Phase 1, allowing for the timely implementation of Phase 2 in 2017.

Cost of proposals:

Phase 1 – Beach re-nourishment, extensive groyne maintenance and develop detailed design, including ground investigation works, for seawall replacement: total cost of proposals are indicated in confidential Appendix F.

Appendices:

- A:** Location Plan
- B:** Channel Coastal Observatory Hayling Island wave buoy data 2003- Present
- C:** Coastal Processes
- D:** Project Programme
- E:** Public Exhibition Feedback Report
- F:** Estimated Cost of Proposals (NOT FOR PUBLICATION by virtue of Paragraph 3 of Part 1 of Schedule 12A of the Local Government Act 1972)

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BOROUGH COUNCIL

Executive Briefing Paper

Date: 11 July 2016

Subject: Hill Head Coastal Protection Project: Proposed Phase 1 Scheme

Briefing by: Director of Planning and Regulation

Portfolio: Planning and Development

INTRODUCTION

1. This report outlines proposals to improve and enhance the coastal defences at Hill Head through the implementation of a series of works.

LOCATION

2. The Council-owned Hill Head frontage is located over an approximately 600 metre (m) length of open coastline, immediately East of Hill Head Sailing Club. A detailed location plan is attached in Appendix A.

BACKGROUND

3. The existing sea defences on frontage 'A' consist of a gabions basket sea wall and a concrete bagwork sea wall, both built approximately 25-30 years ago. Frontage 'B' consists of a concrete wave re-curve sea wall built circa 1937. Seaward of these defences are 13 timber groynes which help retain the beach material. The beach in turn helps to protect the sea walls. These coastal defence assets are owned and maintained by the Council. The Council has carried out reactive maintenance on these defences in recent years to address several issues.
4. A series of failures have affected frontage 'A' in the last 10 years. In 2005 a 30m section of frontage 'A' failed completely and was re-built with similar materials. In 2014 a separate 30m section of frontage 'A' failed and was re-built and patched with similar materials. Frontage 'B', although 60 years older than frontage 'A', is in a fair condition due to its superior construction.
5. The winter storms of 2013/2014 saw a series of severe storms in quick succession erode beach material from the frontage. Additional erosion losses of beach material occurred into 2015 when beach levels were observed to be up to 1.2m below 2012 levels. There are no signs of the beach replenishing naturally from these erosion losses to a substantial degree before winter 2016. This has exposed the coastal defences to increased and additional wave action. The movement of beach material is generally slow with a net movement through tide and wave action from the west to the east along this stretch of the Solent coastline.

6. Data from the Channel Coastal Observatory Regional Monitoring Programme, in operation since 2003, has been used to analyse storms events at the nearest wave buoy (Hayling Island), see Appendix B. This indicates 18 storm events have occurred in the last 3 years, the previous 18 storms to this took 6 years to occur. Four of the 6 most severe storms recorded since 2003 have occurred in the last 3 years. This increase in regional storm frequency and severity has contributed to the lower beach levels.
7. In winter 2015/2016 a further failure of the seawall along frontage 'A' occurred in the same location as the 2005 failure. The promenade was closed for a prolonged period in the interest of public safety for remedial works to re-open the promenade. However, due to the extent of damage, this is not a long term solution with a high risk of future failure along this frontage.
8. Additionally the gabion baskets which were repaired in 2014 have degraded further due to exposure to increased and additional wave action. The 13 Council-owned and maintained groynes require extensive pro-active maintenance to return them to their original condition and functionality.

COASTAL PROCESSES

9. Net sediment movement is west to east and fed by the eroding cliffs between Solent Breezes and Titchfield Haven. Originally the Hill Head beach was also fed by the cliffs which are now directly behind and protected from erosion by the sea defences.
10. The beach at Hill Head is also in the lee of the local headland created by the harbour, during storms the waves tend to focus on these downdrift spots. This has also been seen at other locations on the Solent coastline.
11. Preliminary coastal processes studies were carried out by the Eastern Solent Coastal partnership (ESCP) in 2015 for the sediment cell between Solent Breezes and Portsmouth Harbour entrance. Between 2012 and 2015 beach levels fell substantially along the frontage in the lee of the harbour due to the increased storm frequency and intensity, see Appendix C. The drop in beach level from storm events occurred irrespective of groyne condition. This has also been seen at other locations on the Solent coastline. Natural replenishment of beach levels is highly unlikely to occur to a substantial degree before winter 2016.

LINKS TO STRATEGIES

12. The Hill Head frontage is within Shoreline Management Zone 3 (SMZ 3) of the River Hamble to Portchester Flood and Erosion Risk Management Strategy (The Strategy). The Strategy was adopted by Fareham Borough Council in 2015 and recommends "Hold the Line - Maintain Protection with Scheduled maintenance and beach recycling to maintain beaches and prevent erosion."
13. The Strategy recommendation is in line with the North Solent Shoreline Management Plan Policy, which was adopted by the Council in 2010, which recommended a policy of 'Hold the Line'.
14. The Strategy identifies Fareham as being in the fortunate position of having relatively low numbers of residential and business properties at risk, however this leaves Fareham in the position of being very unlikely to benefit from Flood and Coastal Erosion Risk management Grant in Aid (FCERMGiA).

OPTIONS

15. **Do Nothing** – Wave action will attack the existing sea defences during storm events. Frontage 'A' sea defences are in poor condition and the risk of failure under storm conditions is high. Annual failures along frontage 'A' are expected. The groynes along both frontages are at risk of further degradation which will be more expensive to maintain in the long term. As the groynes along frontage 'B' deteriorate the seawall will be exposed to increased wave action and potentially lead to unnecessary damage. Beach levels will remain low and offer little protection to the sea defences.
16. Assets at risk from failure of the frontage 'A' seawall include the public promenade which sits on top of the seawall, 39 beach huts which pay an annual rent to Fareham Borough Council. The public highway behind the cliff landward of the beach huts is at erosion risk 20-50 years after failure, and up to 10 residential properties are at risk from 50 years after failure.
17. FBC as the landowner has a health and safety duty of care to the public, so would need to remove hazards and close the beach to the public as appropriate.
18. **Do Minimum** – Continue reactive maintenance approach. Wave action will continue to attack the existing sea defences during storm events. Frontage 'A' sea defences are in poor condition and the risk of failure under storm conditions is high. Annual failures along frontage 'A' are expected to increase in regularity and expense.
19. The seawall on frontage 'A' has reached the end of its serviceable life, any maintenance works carried out will be short term solutions only.
20. Groyne repairs will also become more expensive as the wave environment becomes more energetic. Beach material will continue to be lost from the beach as the groynes deteriorate.
21. **Do Something** – Adopt a proactive approach to manage the frontage. In order to address the problems outlined in this Executive Briefing Paper, it is proposed to implement measures in two phases.
22. The first phase of delivery (Phase 1), which is the subject of this Report to the Executive, will aim to reduce the frontage 'A' seawall's exposure to destructive wave action. Phase 1 will consist of re-nourishing the frontage 'A' beach at Hill Head with 3400 cubic metres of imported sediment to reinstate beach levels and the protection afforded by the beach to the seawall structures behind. Refurbish and reconstruct where required 13 Council-owned groynes to improve sediment retention and seawall protection along frontage 'A' and 'B' and design work for a replacement seawall.
23. The second phase (Phase 2) consists of the construction of a replacement sea defence on frontage 'A' based on the detailed design developed in Phase 1 (above). Phase 2 shall be the subject of a separate Executive report to be considered in March 2017.
24. Promote a holistic solution to coastal erosion issues regionally, through the implementation of a Beach Management Plan, as a key part of the long term solution as per the adopted Strategy. The ESCP (on behalf of FBC) propose to prepare and submit a bid to the Environment Agency seeking FCERMGiA. FCERMGiA will be used to develop a Beach Management Plan (BMP) from Hill Head to Portsmouth Harbour entrance. This funding is not guaranteed and will be subject to the development and

approval of a business case.

25. This report to the Executive seeks approval for the ESCP to undertake Phase 1. A further report to the Executive will be submitted in March 2017 seeking approval to commence Phase 2.
26. The programme for implementation of Phase 1 beach nourishment and groyne maintenance works is August to September 2016, with detailed design complete by January 2017, see Appendix D for project timeline.

COMMUNITY FEEDBACK & PROJECT SUPPORT

27. The details set out in this report have been developed in collaboration with the Hill Head Coastal Management Members Working Group.
28. On 29 March 2016 a community exhibition followed by a Community Action Meeting (CAT) was held. The Phase 1 works were presented to the public as part of the events. Approximately 200 members of the public attended the exhibition event and 65 people attended the CAT meeting. All attendees were asked to provide feedback on the proposed project through a feedback form.
29. Feedback from respondents indicate overall community support for Phase 1 of the project with 96% support for groyne maintenance works and 78% support for beach re-nourishment works. Support for Phase 2 seawall replacement works was 96%. Further information on the feedback received is set out in Appendix E.

BENEFITS

30. The proposals would provide for higher beach levels through a combination of sediment import and groyne improvements retaining beach material providing additional protection to frontage 'A' until Phase 2 – Seawall Replacement, is implemented.
31. The proposals maintain the promenade as a leisure asset to the local community with improved access to the beach through higher beach levels.
32. The proposals increase protection to the frontage 'B' seawall through improved sediment retention by the refurbished groynes, most likely with the considerable benefit of extending the residual life of the frontage 'B' seawall.
33. The safety, security and well-being for residents who use the frontage is paramount. The potential for further failures can affect public enjoyment of the frontage. The uncertainty regarding the current promenade seawall condition can cause risk-related anxiety for local residents, while beach hut owners in the area are at risk of flooding and may either be unable to obtain insurance or pay particularly high premiums. The preferred options promoted by the Strategy are therefore likely to have a beneficial impact on human health in this respect.
34. Implementing the works will have positive sustainability benefits for: Hill Head residents and beach hut owners, the environment, human health, accessibility and leisure.
35. The proposals would provide for increased protection to the beach huts from possible destructive damage caused by seawall failure and reducing potential for wave overtopping of the promenade damaging the beach huts. This reduces the potential for

coastal erosion behind the beach huts.

36. The proposals would enhance the beach as an amenity for community enjoyment.

LEGAL IMPLICATIONS

37. The Council as a Coastal Protection Authority can utilise its permissive powers under the Coastal Protection Act 1949 to undertake the proposed works. The Council will also need to comply with the appropriate legislation including, but not limited to, the Town and Country Planning Act 2015 and the Food and Environmental Protection Act 1985.

ENVIRONMENTAL IMPLICATIONS

38. The majority of the frontage is environmentally sensitive with nationally and internationally designated sites including Solent and Southampton Water Special Protected Area [SPA], the Solent and Southampton Water Ramsar Site, the Lee on the Solent to Itchen Site of Special Scientific Interest [SSSI] and the Titchfield Haven SSSI present.
39. These designations are extremely likely to effect the working period allowed for Phase 1 and 2 with no major works likely to be permitted from October to March inclusive due to overwintering birds restrictions.
40. The implication of this restriction is that works will be carried out between April and September in any year when the public are expected to use the beach more frequently. Works will be carried out in a respectful manner to users allowing as much access to the beach and amenity as practical, whilst keeping the public safe from the works.
41. Potential impacts on these sites shall be assessed so that the impacts of the preferred option do not adversely affect the natural environment. This will be assessed through the consenting process in consultation with the relevant environmental bodies.

FINANCIAL IMPLICATIONS

42. The costs associated with this project will need to be fully financed by the Council.
43. Funding for coastal protection works is allocated nationally through FCERMGiA and priority is given to schemes protecting risk to life, then large numbers of residences and businesses where flooding and erosion will likely cause significant damage. The Hill Head Coastal Protection Project does not comply with the current funding mechanism, however officers will discuss this with the Environment Agency who administer the funds.
44. The estimated cost to the Council for these proposals are included in the confidential Appendix F.

COLLABORATIVE WORKING

45. The beach in front of the Giblet Ore properties lowered significantly in the 2013/ 2014 storms resulting in local flooding. A scheme to raise the groynes, to capture more sediment thus increasing beach levels and width, has been proposed by the residents. This scheme would have an enhanced benefit to residents once Hill Head Phase 1 beach re-nourishment is implemented as there will be additional sediment on the

coastline to retain. The Council would benefit as there is more sediment potentially retained in the local area which could be used as a source of material in any future Beach Management Activities.

46. The ESCP has worked with adjacent landowners at the Hill Head Sailing Club and Giblet Ore properties for mutual benefit to identify opportunities for improved coastal defences. These private maintainers have coastal protection and maintenance issues which are their responsibility, and the Council will seek to help where appropriate, through a collaborative approach, to assist these private groups to address their coastal protection issues.
47. The Council will continue to engage with the Giblet ore properties to consider how their scheme relates to the Council scheme.

CONCLUSION

48. Frontage 'A' has reached the end of its serviceable life and is at high risk of significant failure during future storm events, a risk exacerbated by low beach levels allowing increased wave energy to reach the seawall.
49. The approval of Phase 1 works by the Executive will address the danger of further immediate coastal erosion risks associated with the frontage and are an essential part of preparing for the construction works required in Phase 2 of the project. The works will also improve the beach as an amenity asset to the local community.