

FAREHAM

BOROUGH COUNCIL

Appendix A - Report to the Executive for Decision 20 April 2015

Portfolio:	Planning and Development
Subject:	River Hamble to Portchester Coastal Flood Risk & Management Strategy Proposed for Adoption
Report of:	Director of Planning and Development
Strategy/Policy:	Environmental Sustainability Strategy
Corporate	Protect and enhance the environment, Safe and Healthy place to live and work, leisure opportunities for health and fun.
Objective:	To reduce the risks to people, the developed and natural environment from flooding and coastal erosion through the development and implementation of a sustainable strategy that encourages provision of technically, economically and environmentally sound defence measures.

Purpose: To seek approval of the final strategic policies proposed to sustainably address coastal flood and coastal erosion risk for a 58km (36 mile) frontage running from Portchester Castle, in Portsmouth Harbour, to Burr ridge, on the east bank of the River Hamble.

Executive summary:

The Eastern Solent Coastal Partnership (ESCP), in collaboration with AECOM (Formally URS Consulting Engineers), has undertaken a Coastal Flood and Erosion Risk Management Strategy on behalf of Fareham Borough Council and Gosport Borough Council (2011 – 2015). The project has been fully funded by Flood Defence Grant in Aid administered by the Environment Agency.

The North Solent Shoreline Management Plan, adopted by Fareham in 2011, provides the high level policy approach for managing coastal flood and erosion risk.

The coastal Strategy sets out how to deliver these policies and identifies where and when coastal flood and erosion risk management works are required over the next 100 years and their likely cost.

The Strategy provides a long term plan for the implementation of capital projects, routine maintenance, further studies, surveys and investigations. The Strategy also helps the Local Authorities and Environment Agency prioritise day-to-day activities whilst ensuring the best use of public funds.

Recommendation:

That the Executive adopts the preferred strategic management options for the Strategy as set out below and detailed in Appendix A:

- **Strategy Management Zone 1 (North Portsmouth Harbour)**

Hold the Line - Delay Sustain. Maximise life of existing defences and then sustain minimum 1:100 year Standard of Protection (phased) from 2030, with environmental improvements to currently eroding former landfill sites

- **Strategy Management Zone 2 (Fareham and Gosport, Portsmouth Harbour West):**

Hold the Line – Sustain. Sustain a minimum 1:100 year Standard of Protection (phased)

- **Strategy Management Zone 3 (Lee-on-the-Solent and Stokes Bay)**

Hold the Line - Maintain Protection – Scheduled maintenance and beach recycling to prevent erosion and maintain beaches through the development of a BMP. Accept that the flood risk Standard of Protection is likely to fall in the longer term.

- **Strategy Management Zone 4 (Hook Lake to Titchfield Haven)**

Environmental Enhancement - Allow natural processes to continue but sustain protection to environmentally important sites at Titchfield Haven and at Hook Lake (with regulated tidal exchange)

- **Strategy Management Zone 5 (River Hamble East Bank)**

Do Minimum until 2060, but with Solent Way footpath adaptation from 2030, then sustain a minimum 1:100 flood Standard of Protection at key flood risk locations – Maximise life of existing defences managing flood risk with local measures and footpath adaptation from 2030, then provide minimum 1:100 year SoP.

Reason:

The dominant risk faced along the frontage is from tidal flooding during storm surges, particularly in the lower lying historically reclaimed former tidal creeks in Fareham and Gosport.

There is currently no existing strategy in place to provide a framework for the long term management of the coastline and to deliver the higher level management

policies of the North Solent Shoreline Management Plan.

The cash value of all assets at risk of flooding and erosion across Fareham and Gosport is over £500 Million by 2115 under a 'Do Nothing' scenario.

Cost of proposals:

None arising directly from this report.

The estimated whole life present value cost to implement the recommendations in the strategy is between £19,365,00 & £30,981,000.

These funds would need to be pursued through Flood Defence Grant in Aid from the Environment Agency and a partnership funding approach seeking contributions from local, public and private sources.

Appendix A: Location maps, Strategic option summary & Option Development Unit detail

Background papers: Executive Agenda and Minutes, 8th November 2010.
Adoption of North Solent Shoreline Management Plan.

Planning and Development Policy Development and Review Panel Printed minutes 9th July 2014
Approval of Strategy Options for Public Consultation

Supporting Technical Reporting available via
www.escp.org.uk/strategy

Appendix A - Coastal Processes Report

Appendix B - Defence Condition Assessment

Appendix C - Desktop Contaminated Land Report

Appendix D - Wave Modelling Report

Appendix E - Joint Probability and Wave Overtopping

Appendix F - Flood Modelling Report

Appendix G - Stakeholder Engagement Report

Appendix H - Option Development and Appraisal

Appendix I - Economics

Appendix J - Strategic Environmental Assessment

Appendix K - Habitats Regulations Assessment

Appendix L - Water Framework Directive Assessment

Appendix M - Broader Outcomes and Contributions

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BOROUGH COUNCIL

Executive Briefing Paper

Date: 20 April 2015

Subject: River Hamble to Portchester Coastal Flood Risk & Management Strategy
Proposed for Adoption

Briefing by: Director of Planning and Development

Portfolio: Planning and Development

INTRODUCTION

1. The Eastern Solent Coastal Partnership (ESCP), in collaboration with AECOM (Formally URS Consulting Engineers), has undertaken a Coastal Flood and Erosion Management Strategy on behalf of Fareham Borough Council and Gosport Borough Council (2011 – 2015). The project has been fully funded by Flood Defence Grant in Aid administered by the Environment Agency.
2. The North Solent Shoreline Management Plan (NSSMP 2010) provides high the level policy information for managing the Fareham and Gosport coastline.
3. The Coastal Strategy sets out how to deliver these policies and manage the complex local issues along this coastline. It identifies where and when coastal flood and erosion risk management works are required over the next 100 years and their likely cost.
4. The principle aim of the Strategy is:

'to reduce the risks to people, the developed and natural environment from flooding and coastal erosion through the development and implementation of a sustainable strategy that encourages provision of technically, economically and environmentally sound defence measures.'
5. The preferred strategic options have now been selected based on a detailed economic appraisal of the costs / benefits of a variety of different options and their impacts on the environment. This appraisal has been undertaken in line with the Environment Agency Flood and Coastal Erosion Risk Management Appraisal Guidance (FCERM-AG). These options went out to public consultation for a period of 3 months from 1st September – 1st December 2014 and received 90 % public support.
6. Following Local Authority Adoption the Strategy will be presented to the Environment Agency's Large Project Review Group for Technical Approval in July 2015. Once approved the Strategy will provide the formal evidence base to secure funding for future flood and coastal erosion risk management schemes.

STRATEGY KEY BENEFITS

7. The Strategy identifies the most cost effective and sustainable way of managing coastal flood and erosion risk over the next 100 years. A table detailing all of the proposed measures can be found in Appendix A.
8. The estimated whole life present value cost to implement the recommendations in the strategy is £19,365,000 or £30,981,000 including 60% Optimism Bias.

Optimism bias is included to account for the tendency for appraisers to be overly optimistic in early assessment of project costs, timescales and benefits in comparison to the final values. In line with FCERM-AG policy and HM Treasury Guidance, an optimism bias of 60% was applied to the present value whole life costs for each strategic option. This is likely to be reduced at the scheme appraisal stage once more detailed design and costs have been completed.

9. These funds would need to be pursued through Flood Defence Grant in Aid from the Environment Agency and a partnership funding approach seeking contributions from local, public and private sources.

Strategy Management Zone (SMZ)	SMZ1	SMZ2	SMZ3	SMZ4	SMZ5	Total
Total Present Value Costs inc 60% Optimism Bias (£K)	4,074	17,094	1084	4,445	4,284	30,981
Present Value Benefits (£K)	10,010	79,653	10,281	6,291	8,983	115,218
Benefit Cost Ratio	2.4	4.7	9.5	1.4	2.1	3.7

Table 1 – Total Present Value Costs and Present Value Benefits by Strategy Management Zone

10. The key benefits of delivering all of the preferred strategic options are
 - The avoidance of an estimated £115,218,000 worth of damages (Present Value) over the next 100 years;
 - Reduced flood risk to 2185 residential properties and 237 commercial properties by 2115 across the entire Strategy region;
 - Reduced erosion risk to 464 residential and commercial properties by 2115 across the entire Strategy region;
 - Protection of environmental assets and the delivery of environmental enhancement opportunities including the creation of new intertidal and saline habitats;
 - The generation of significant recreational, health and tourism benefits, created by protecting and maintaining access to the coast and natural environment;
 - Support for wider initiatives such as redevelopment and economic regeneration opportunities through the delivery of new coastal defences.

PREFERRED STRATEGIC OPTIONS

11. The scope of strategic options available to each Strategy Management Zone (SMZ) included:

- Do Nothing (No Active Intervention)
- Do Minimum – e.g. maintenance and repairs and health and safety compliance
- Maintain – e.g. continue to protect against erosion or maintain the current Standard of Protection (SoP)
- Sustain – maintain a minimum SoP by raising defences over time to keep pace with sea level rise
- Delay sustain – maximise existing defences then raise SoP of defences at a later date
- Improve SoP – improve SoP compared to present day
- Environmental enhancement / improvement
- Flood barrier (harbour wide)

At the local scale (Option Development Unit level) a 'long list' of management measures (i.e. seawall, sheet piling, revetment etc.) were chosen to support the overarching strategic options. At this early stage in the process, to avoid overlooking potential measures, effort was made to consider as many measures as possible.

12. Stages of decision making:

1. For each SMZ, the Strategic options were ranked according to the strength of their economic case. The leading option with the strongest economic case was identified for each SMZ. The options in which the costs of implementation outweighed the benefits were discarded at this stage.
2. A number of sensitivity tests were carried out to determine whether uncertainty would influence the choice of the leading option.
3. The choice of the leading option was then considered against the wider objectives of the Strategy, such as interested party and community aspirations and environmental benefits. The choice of the leading option was reconsidered if an alternative option demonstrated a significantly stronger case in terms meeting the wider objectives (i.e. provided greater environmental benefits).

13. **Preferred Strategic Option - Strategy Management Zone 1** – North Portsmouth Harbour (Hospital Lane, Portchester, to Upper Quay, Fareham)

The preferred strategic approach is to maximise the life of existing defences and then sustain minimum 1:100 year Standard of Protection from 2030 in addition to defending areas of the shoreline which are currently undefended including environmental improvements to currently eroding former landfill sites.

The preferred option has been demonstrated to be economically robust and it also has the potential to deliver wider benefits such as protection of the coastal footpath and improved access. The implementation of these measures has been phased for 2030 on the basis that considerable non grant funding will be required (as the case for flood defence grant is currently low) based on the low present day risk of flooding. However if contributions can be secured sooner, efforts should be made to bring forward the works

to realise the benefits earlier. The Alton Grove to Cadour Drive frontage is the priority scheme for this frontage. There is requirement for environmental improvement works to the currently undefended landfill along the south of the Wicor Frontage.

14. **Preferred Strategic Option - Strategy Management Zone 2** - Gosport and Fareham Harbour West (Upper Quay, Fareham, to Fort Monkton, Gosport)

The preferred strategic approach involves sustaining a minimum 1:100 year Standard of Protection against flooding through phased implementation of new defences, based on the progression of flood risk.

Tidal flood risk poses an immediate threat to parts of this zone and this risk is expected to significantly increase over the coming century with Sea Level Rise. This preferred option means that new defences are required first in the priority areas, such as the Gosport lake sites, with a programme of future works in other areas such as Fareham Quay, to address the risks as they increase over time. The preferred option also provides opportunities to improve coastal access, health and recreational aspects for the community; factors which must be a consideration during the development of future schemes.

15. **Preferred Strategic Option - Strategy Management Zone 3** - Lee on the Solent & Stokes Bay (Fort Monkton, Gosport, to Hill Head Sailing Club, Fareham)

The preferred strategic approach involves maintaining the current protection. This will involve scheduled beach recycling and maintenance, whereby shingle will be moved from local areas of accretion to replace losses in areas where the beach is eroding.

This approach is considered the most effective way of maintaining a healthy beach. The recycling of beach material will be informed through ongoing monitoring and the development of a Beach Management Plan (BMP). The BMP will indicate whether the standard of protection provided by the beach is above acceptable levels and will help direct future options.

The main risk in this zone is associated with erosion. This stems from the close proximity of development to the shoreline and the higher rates of erosion which can be experienced along the open coast. The flood risk in this zone is much less significant and more localised compared to other Strategy Management Zones.

16. **Preferred Strategic Option - Strategy Management Zone 4** –Titchfield Haven to Hook Lake (Hill Head Sailing Club to Warsash Maritime College)

The preferred strategic approach is environmental enhancement to allow natural processes to continue, but sustain protection to the environmentally important sites of Hook Lake and Titchfield Haven and seek to create habitat through regulating tidal exchange at Hook Lake.

The option for this zone balances the interests of competing Strategy needs and has been driven to a large degree by environmental requirements and opportunities. Given that the zone has relatively low flood and erosion risk to people and property, is largely undefended, and is valued for its natural beauty and environmental assets, the strategic approach is to work with nature as much as possible and enhance natural areas.

However it is recognised that local risks to people and property need to be mitigated, and to provide time to adapt, private maintenance of existing defences is permitted (subject to gaining the necessary consents).

17. Preferred Strategic Option - Strategy Management Zone 5 – River Hamble East Bank (Warsash Maritime College to Eversdown Copse, north of Burridge)

The preferred option for SMZ 5 is to Do Minimum until 2060 but with Solent Way footpath adaption from 2030, then sustain a minimum 1:100 year Standard of Protection at key flood risk locations.

This option involves maintaining and maximising the life of the existing defences to prevent erosion, with property level protection to address local flood risk issues until 2060. As the risk increases into the future due to sea level rise, capital works will be required in key areas, such as Warsash and Lower Swanwick, in order to sustain the 1:100 year Standard of Protection.

The maintenance and footpath adaptation (such as realignment and raising) of to the locally important Solent Way footpath is a key driver behind the preferred option. The footpath which runs through SMZ 5 provides a popular recreation and tourism asset to the area. Although the economic case is marginal, there is a strong interested party and public aspiration to maintain this footpath which is at risk of flooding and erosion without future intervention. Maintenance of the footpath is recommended in the preferred option if sufficient funding can be secured

RESOURCE IMPLICATIONS

18. There are no immediate financial implications arising from this report.
19. Existing defences will continue to be maintained under permissive powers where Fareham Borough Council decide to commit resource (using revenue budgets) whilst contributions are pursued for the improvement schemes recommended in the strategy.
20. Although the Strategy makes recommendations to manage coastal flood and erosion risk, it does not propose the detail of the coastal defence schemes or guarantee funding. Funding for coastal protection works is allocated nationally and priority is given to schemes protecting large numbers of houses and where flooding and erosion will cause significant damage. Where funding is not provided by central government then funds from local, public and private sources will need to be explored through partnership funding.
21. The priority flood risk schemes for Fareham are located at Fareham Quay and Alton Grove to Cador Drive. However, given the low present day risk of flooding it is recommended that these schemes are implemented from 2030 when the flood risk increases along with the chance of securing central grant funding. Even then these schemes are not guaranteed funding and will require significant contributions for them to proceed. If contributions can be secured sooner, efforts should be made to bring forward the works to realise the benefits earlier. Throughout the project the ESCP have engaged with potential beneficiaries and partners to seek contributions and broader outcomes.
22. Both of the above projects are listed in the Council's Infrastructure Delivery Plan and could potentially be funded in whole or in part by Community Infrastructure Levy (CIL)

receipts. Moving forward the ESCP will continue to engage with external partners to secure contributions in order to unlock central government grant.

LEGAL IMPLICATIONS

23. There are no other known legal implications of adopting the River Hamble to Portchester Coastal Flood & Erosion Risk Management Strategy. Any future works will be carried out under the Land Drainage Act 1991, or Coast Protection Act 1949, where Fareham Borough Council have permissive powers to act in the public interest; doing so only when there is:
- a clear economic benefit;
 - an appropriate engineering solution can be achieved; and,
 - no contravention of environmental legislation.

ENVIRONMENTAL IMPLICATIONS

24. The majority of the frontage is environmentally sensitive and there are many nationally and internationally designated sites including Solent & Southampton Water Special Protected Area (SPA) and Ramsar and Portsmouth Harbour SPA and Ramsar.

The Strategy takes account of the potential impacts on these sites through a Strategic Environmental Assessment, Habitat Regulation Assessment and Water Framework Directive Assessment so that the impacts of the preferred options do not adversely affect the natural environment.

COMMUNITY

25. Understanding the social background and aspirations of local communities is important to ensure that the strategy promotes acceptable options which will be supported by current and future generations. Therefore a comprehensive and meaningful engagement process was implemented throughout the development of the Strategy.
26. During the public consultation process just fewer than 400 people attended the exhibitions and over 90% of those that responded using the Strategy questionnaire were in support of taking the Strategies recommendations forward.
27. Safety, security and well-being for residents living in the floodplain is paramount. The potential for flooding can affect human health. The uncertainty regarding protection from flooding can cause flood risk-related anxiety for local residents, while property owners in an area at risk of flooding may either be unable to obtain insurance or pay particularly high premiums. The Strategic options promoted by the Strategy are therefore likely to have a beneficial impact on human health in this respect.
28. Implementing the Strategy will have positive sustainability benefits for: Fareham residents, long term employment and economic generation, the environment, human health, poverty and deprivation, accessibility, leisure, and waste and pollution management.

RISK ASSESSMENT

29. The risks of Doing Nothing are presented in paragraph 10 above.
30. Any of the priority schemes developed after Strategy approved will comply with the latest Construction, Design & Management (CDM) regulations.
31. Risks to this Council will be minimised by the normal contract procedures and requirements for any future works.
32. Fareham Borough Council is responsible for maintaining defences that protect former landfill sites. It is unlikely that capital grant moneys will be secured to protect these sites without significant contributions. Doing nothing could lead to the potential contamination of Portsmouth Harbour. The Strategy highlights the importance of future capital maintenance with improvement or implementation of coastal defences along this frontage from 2030. This is to allow further investigation into the potential contamination of these sites and the possible impacts on the Portsmouth Harbour Water Body.

CONCLUSION

33. The dominant risk faced along the frontage is from tidal flooding during storm surges, particularly in the lower lying historically reclaimed former tidal creeks in Fareham and Gosport.
34. Many parts of the Strategy frontage are already defended however, the condition, standard of protection against flooding and the expected life of these defences is highly variable. Currently defence maintenance is undertaken on a reactive and piecemeal basis.
35. The coastal frontage covered by this strategy is highly varied and ranges from very sheltered estuarine and creek environments to much more exposed open coast beach environments. This diverse and interesting coastal environment provides many access and recreation opportunities and is widely used for leisure by a significant number of visitors each year
36. In the future, without actively implementing measures to manage coastal flood and erosion risks, tidal flood risk is set to increase significantly under the range of climate change and sea level rise projections. By 2115, over the entire Strategy frontage, 2392 residential properties, 237 commercial properties, and further major infrastructure and services are at risk from a 1/100 year (1% annual exceedance probability) tidal flood event. An additional 464 properties are also at risk of erosion by this time under a Do Nothing Scenario.
37. The cash value of all assets at risk of flooding and erosion across Fareham and Gosport is over £500 Million by 2115 under a 'Do Nothing' scenario.
38. There is currently no existing strategy in place to provide a framework for the long term management of the coastline and to deliver the higher level management policies of the North Solent Shoreline Management Plan.
39. The adoption of the River Hamble to Portchester Strategy by Fareham and Gosport Borough Council will provide the urgently required framework to manage future coastal flood and erosion risks.