CABINET

Report subject	**Christchurch Bay and Harbour Flood and Coastal Erosion Risk Management (FCERM) Strategy**
Meeting date	2 October 2024
Status	Public Report
Executive summary	The Strategy has been developed in collaboration with New Forest District Council and the Environment Agency, and involved extensive engagement and consultation with communities, key stakeholders, and officers and members of both councils, including four rounds of engagement to shape development of the strategy and a 3-month public consultation between June-August 2023. The strategy recommends where and when potential defence schemes can be implemented to mitigate the coastal flood and erosion risks to over 3,800 properties over the next 100 years. However, the strategy identifies a significant funding challenge to deliver these future defences as only a proportion of the total costs are eligible to access national FCERM Grant in Aid funding. Whilst adopting the strategy does not bind BCP Council to any additional financial commitments at this time, it does require BCP Council to develop a funding strategy. When any schemes to implement the strategy are developed in future years, any request for financial contribution from BCP Council will be brought to cabinet as required. If required funding contributions are not achieved, then the strategy will be to provide a minimum amount of intervention by maintaining existing defences using Council revenue budgets (as occurs currently) for a period of time, but that maintenance will eventually cease. This will mean development and regeneration in at risk areas around Christchurch will not be able to occur due to the increased level of flood and/or coastal change risk this will present.
Recommendations	**It is RECOMMENDED that:** **a) Cabinet approve and adopt the Christchurch Bay & Harbour Flood & Coastal Erosion Risk Management (FCERM) Strategy for the BCP Council area.** **b) In approving and adopting the strategy, that BCP Council commits to developing a funding strategy.** **c) Cabinet notes that there is no statutory duty upon BCP Council as the Coast Protection Authority to undertake coast protection works, nor does the adoption of the strategy bind BCP Council to commit to the provision of any funding for the delivery of the identified options.**
Reason for	Approval and adoption of this FCERM strategy by BCP Council,

recommendations	New Forest District Council and the Environment Agency, ensures that technically feasible, environmentally acceptable and economically viable options are developed to reduce the risks from coastal flooding and erosion to people, their properties and the environment over the next 100 years for the coastline from Hengistbury Head to Hurst Spit. Without such an approach, it is likely that current management approaches would continue in the short term and future coastal defence works would be managed on an ad-hoc or reactive basis which would lead to poor cost efficiency and a general increase in the coastal flood and erosion risk over time. This contributes to the following BCP Council corporate ambition: • Climate change is tackled through sustainable policies and practice.

Portfolio Holder(s):	Councillor Andy Hadley
Corporate Director	Glynn Barton – Chief Operations Officer
Report Authors	Alan Frampton – Strategy, Policy & Environment Manager, FCERM
Wards	Burton & Grange; Christchurch Town; East Southbourne & Tuckton; Highcliffe & Walkford; Mudeford, Stanpit & West Highcliffe;
Classification	For Decision

1. This paper presents a summary of the work undertaken since Spring 2021 to develop a new Flood and Coastal Erosion Risk Management (FCERM) Strategy for Christchurch Bay & Harbour (hereafter referred to as the strategy).
2. This report is not requesting funding to deliver the strategy and no additional financial commitment is being by BCP Council made as a result of this report. A funding strategy would be developed if the overarching strategy is approved.
3. The information provided in this paper below summarises the headline details of the recommended strategy for just the BCP Council area which was consulted on between 5 June to 27 August 2023 (see the Consultation Report). Further detail about recommended strategy is provided in the supporting appendices 1 to 3.

The Strategy Area

4. Due to the connectivity of the physical processes across Christchurch Bay and Harbour (illustrated in Figure 1), the strategy area extends from Hengistbury Head Long Groyne to the western end of Hurst Spit at Milford-on-Sea on the open coast, and to Tuckton Bridge and Knapp Mill on the lower Rivers Stour and Avon within Christchurch Harbour respectively.

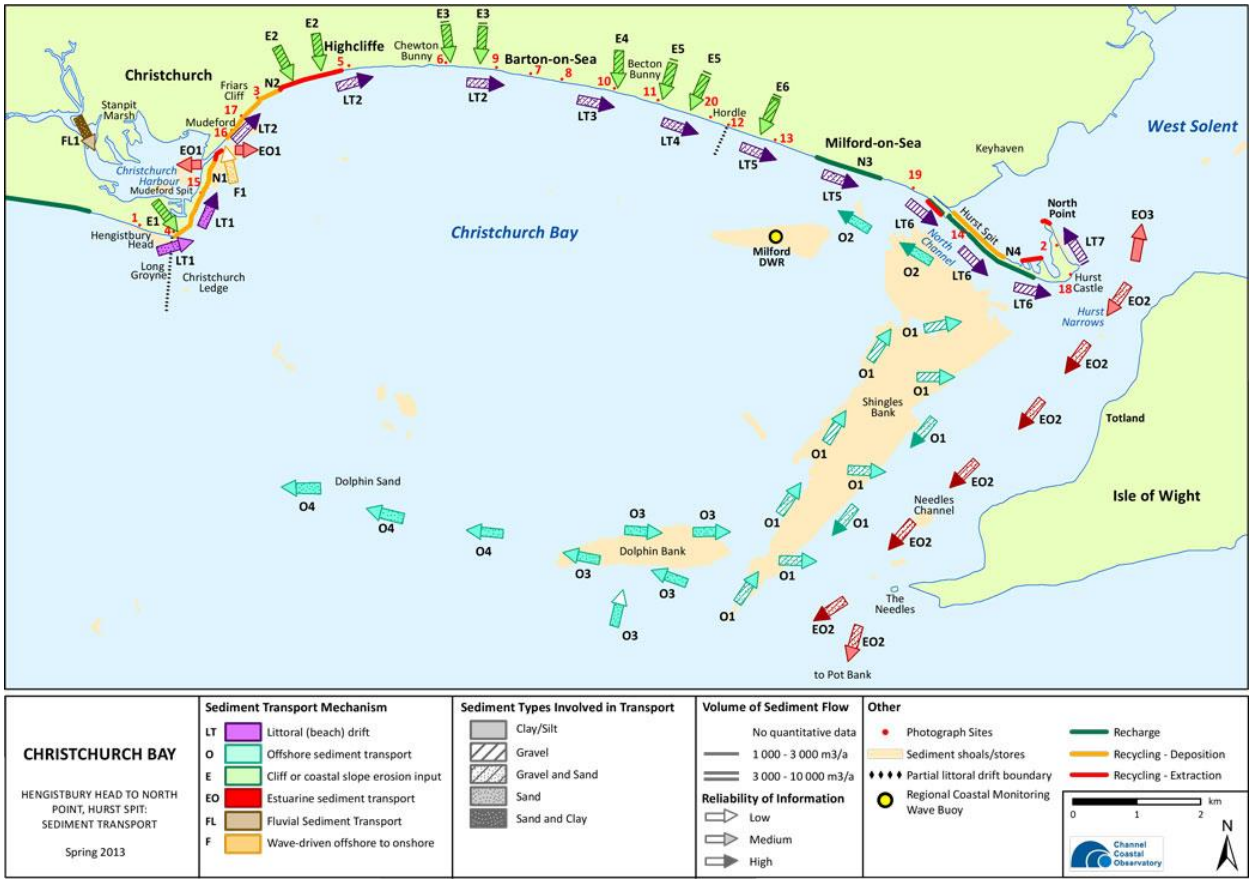

Figure 1 Sediment transport linkages across the Christchurch Bay & Harbour area (from SCOPAC Sediment Transport Study).

5. The area contains a mix of residential and commercial properties. There are large areas of open space and sites of significant environmental importance around much of the frontage, including environmental designations and historical landmarks. This diverse and interesting coastal environment provides extensive access and recreation opportunities and is widely used for leisure by a significant number of visitors each year. Christchurch Bay beaches are popular with swimmers, surfers, sailors and walkers alike.

6. Significant areas of land around Christchurch Harbour are at risk of flooding from large storm events. Parts of the open coast are at threat from coastal erosion. With increased storminess (i.e. more frequent and ferocious storms) and rising sea levels predicted due to climate change, the risk of coastal flooding and erosion is likely to increase significantly.

7. Without actively implementing measures to manage coastal flood and erosion risks, over 1,600 properties are likely to be at risk from erosion and over 2,200 properties at risk from coastal flooding by 2124. In economic terms, the estimated damage over the next century if we do nothing is £1.21 billion (cash) or £186 million (when discounted following HM Treasury Green Book guidance to allow for a comparison of future values in terms of their value in the present day). Appendix 1 provides further detail.

The Recommended Strategy for the BCP Council Area

8. The option appraisal for the strategy has been undertaken by dividing the strategy area into six high level Strategic Management Zones (SMZs) shown in Figure 2. These have been further sub-divided into a total of eighteen smaller Option Development Units (ODUs). ODUs for the BCP Council area are shown in Figures 3 to 5.

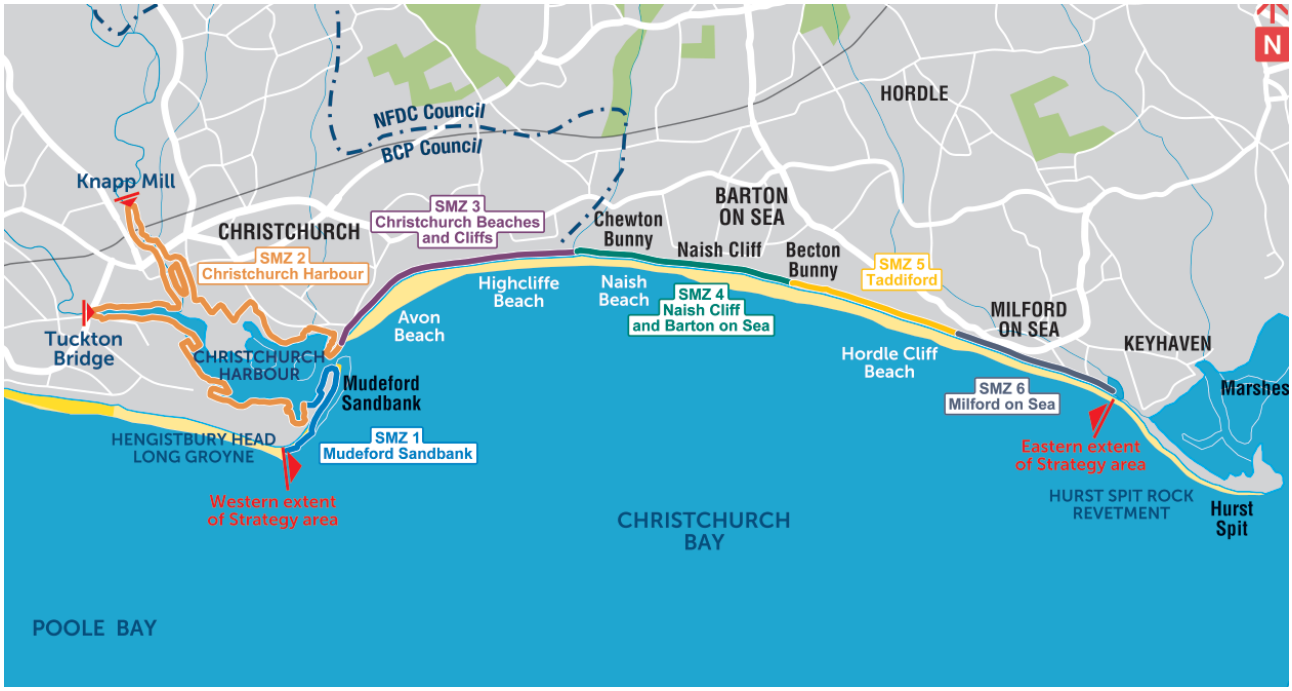

Figure 2 The Strategy Management Zones defined across the Christchurch Bay & Harbour area.

Figure 3 The ODUs defined in SMZ1 of the strategy area.

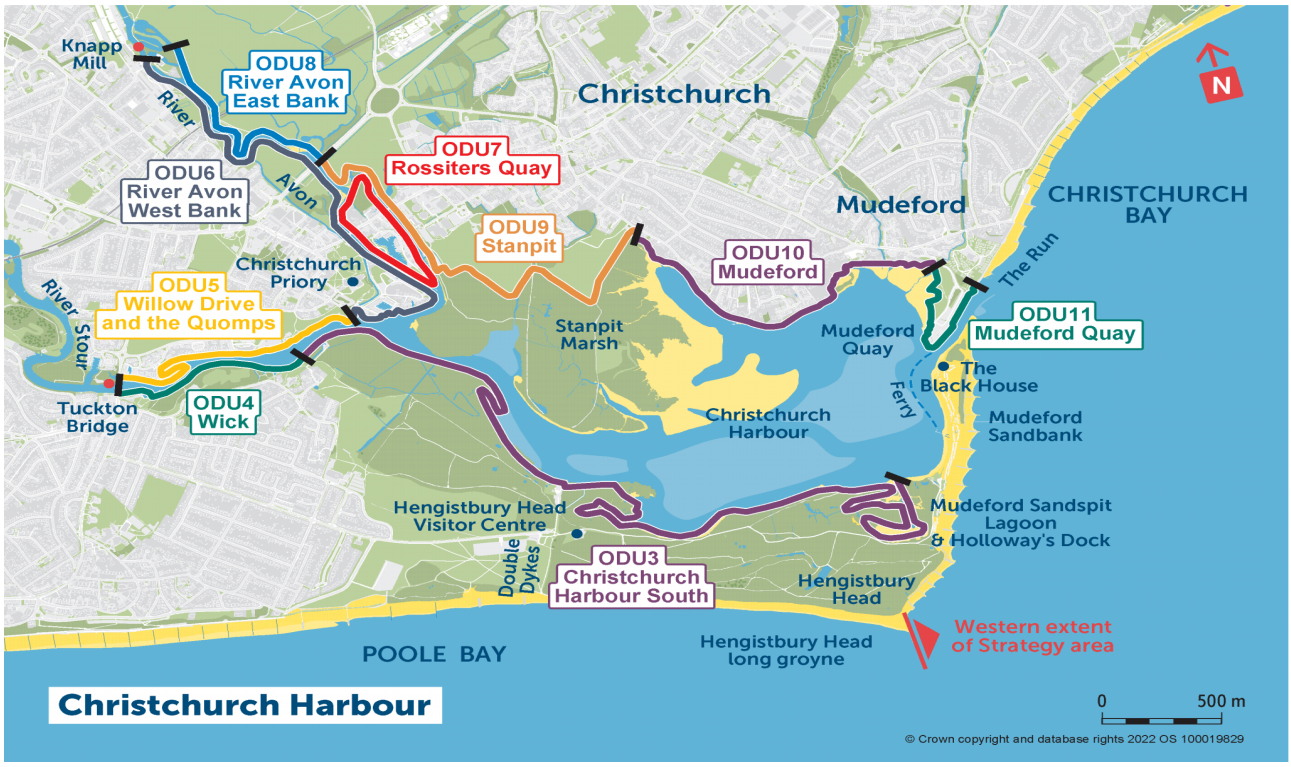

Figure 4 The ODUs defined in SMZ2 of the strategy area.

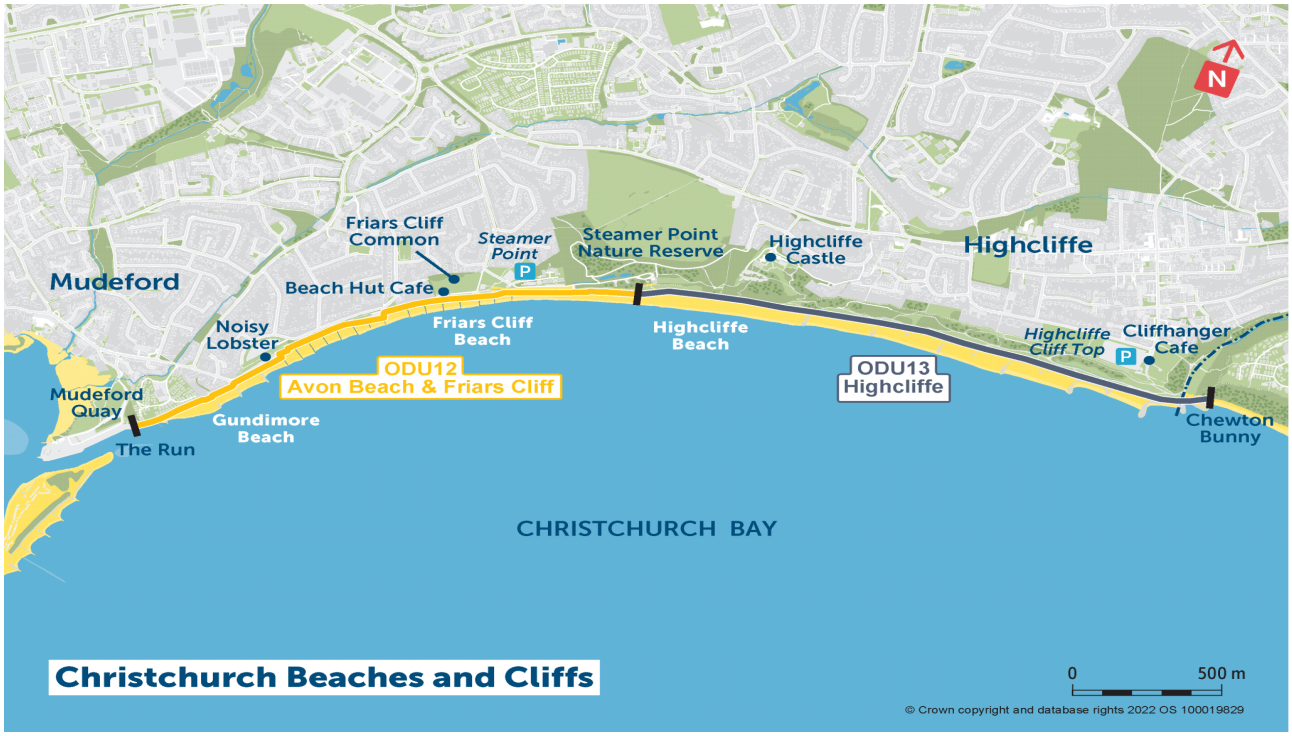

Figure 5 The ODUs defined in SMZ3 of the strategy area.

9. In each ODU, up to three types of leading options have been identified and proposed. These include;

   - the National Economic leading option, which is identified by following the Environment Agency's Flood and Coastal Erosion Risk Management Appraisal Guidance. This option has been identified in each ODU and forms the basis of the appraisal
   - the Local Aspirational leading option has been identified in some ODUs and considers local opportunities, wants and needs to deliver wider benefits (informed by stakeholder engagement during development of the strategy). This option typically costs more than

the National Economic leading option and/or would be delivered sooner

- the back-up option has been identified in some ODUs when there is a large funding shortfall. It is typically a lower cost option that will be more easily delivered if funding is limited and may not reduce risks longer-term.

10. Each type of option outlines the planned coastal defence interventions during the short, medium and long term, in the form of flexible plan that can respond to different events occurring over time (referred to as an adaptive pathway) for each ODU.
11. Funding is a key constraint that has been identified, alongside other factors including uncertainty such as the onset of coastal flooding and erosion risks and the rate of change that may occur in these risks due to climate change. Identifying these adaptive pathways provides a flexible approach depending on the risks / funding availability. For example, if more funding becomes available than expected, the delivery team could switch from delivering the National Economic Leading Option to the Local Aspirational Option.
12. It should be noted that the level of funding contributions required is indicative and may change (up or down) as more work is done to develop schemes and refinement of required works, costs, etc. is developed. These values act as a guide to the likely level of contributions that will need to be secured in the coming years to enable FCERM investments to occur in line with the leading options identified in this strategy.
13. If these funding contributions are not achieved, then the strategy identifies a back-up option in some areas that will provide a minimum amount of intervention to manage risks for a period of time. The minimum maintenance will however will eventually cease, leading to the scale of damages and loss described above.
14. Further details on the options appraisal process are provided in Appendix 1.
15. The recommended leading options for the BCP area are as follows (refer also to Appendix 1):

SMZ 1 – Mudeford Sandbank

16. SMZ 1 (Mudeford Sandbank) includes ODUs 1 and 2, covering the area to the east of Hengistbury Head Long Groyne and Mudeford Sandbank. The key feature to manage in this location is the Sandbank, which has businesses and beach huts and is an important area for recreation and amenity use. The Sandbank also provides shelter to Christchurch Harbour, helping to reduce wave activity in the harbour and reducing the potential flood risk. With projected sea level rise, the Sandbank will come under increasing pressure from coastal flooding and erosion.
17. The recommended preferred options in this SMZ are summarised in the following table:

ODU	National Economic Leading Option	Local Aspirational Leading Option	Backup Option
1 – Hengistbury Head East	Do minimum - small scale repairs to existing defences (i.e. patch-repairs)	Maintain toe defences and undertake beach recycling. Erosion of cliff would be controlled but not stopped entirely.	-
2 – Mudeford Sandbank	Do minimum - small scale repairs to existing defences (i.e. patch-repairs)	Sustain the FCERM service of the Sandbank by holding its form over time and aiming to keep it broadly in its current position. Achieved through beach nourishment and defence maintenance. Property level protection to permanent properties on the Sandbank.	-

18. Due to the lack of permanent properties on Mudeford Sandbank the amount of central government funding (FCERM-GiA) for coastal defences in SMZ 1 is expected to be very limited. Therefore the leading options will need to be funded from non-GiA sources, totalling

cash value over 100 years to be estimated between £2.0m to £30.0m.

SMZ 2 – Christchurch Harbour

19. SMZ 2 (Christchurch Harbour) includes ODUs 3 to 11, covering the area within Christchurch Harbour, up to Tuckton Bridge on the River Stour and up to Knapp Mill on the River Avon. SMZ 2 is a sheltered harbour environment and generally the main risk of flooding is from tidal inundation rather than wave overtopping. There are a large number of properties at risk from tidal flooding around the harbour and sea level rise is expected to increase risk over time. The risk from erosion within the harbour is generally low (compared to the open coast), but there are numerous areas of historic waste landfill along the coastline that may be at risk from erosion and have been considered in the appraisal.

20. The recommended preferred options in this SMZ are summarized in the following table:

ODU	National Economic Leading Option	Local Aspirational Leading Option	Backup Option
3 – Christchurch Harbour South	Property level protection to properties at risk	As per National option but with localised erosion defences to the access road to Hengistbury Head and around Wick historic landfill site	-
4 - Wick	Raise and lengthen existing setback embankment defence during next 20 years, and then progressively over time to keep pace with sea level rise	As per National option, however, repeat maintenance / refurbishments would also be undertaken on the frontline quay wall to prevent erosion of historic landfill	-
5 – Willow Drive and the Quomps	Raise height of defences to improve Standard of Protection (SoP) in the 20-50 year period (alignment to be decided). Maintain / replace frontline defence adjacent to historic landfill site at the Quomps	As per National option, except defence height would be raised in first 20 years rather than in the 0-50 year period	Maintain frontline defences and undertake property level protection to properties at risk of flooding
6 – River Avon West Bank	Maintain frontline defences and undertake property level protection to properties at risk of flooding	-	-
7 – Rossiters Quay	Raise existing / construct new flood defences in the 20-50 year period.	-	Maintain / refurbish existing defences and undertake property level protection to properties at risk of flooding
8 -River Avon East Bank	Options to be appraised separately by Environment Agency		
9 - Stanpit	Raise existing / construct new flood defences in the 20-50 year period and then raise over time to keep pace with sea level rise. Defences would defend Stanpit historic landfill site	-	Maintain / refurbish existing defences and undertake property level protection to properties at risk of flooding
10 - Mudeford	Property level protection to properties at risk in the next 50 years. Construct new flood defences in the 50-100 year period to increase the Standard of Protection (SoP) against flooding	-	Maintain / refurbish existing quay walls and undertake property level protection to properties at risk of flooding

ODU	National Economic Leading Option	Local Aspirational Leading Option	Backup Option
11 – Mudeford Quay	Do minimum - small scale repairs to existing defences (i.e. patch-repairs)	Property level protection to properties at risk. Maintain existing quay walls.	-

21. Due to the significant funding contribution required from non-central government funding (FCERM-GiA) sources – totalling cash value over 100 years estimated to be in excess of £100m – backup options have also been identified in some units in SMZ 2. These would be more deliverable and focussed on more frequent, smaller interventions over time and property level resilience rather than larger capital schemes to protect the wider community.

SMZ 3 – Christchurch Beach and Cliffs

22. SMZ 3 (Christchurch Beaches and Cliffs) includes ODUs 12 and 13 spanning the area between Avon Beach and Highcliffe. The main risk in this zone is from coastal erosion. A beach is present along the length of this zone and provides an important recreation and amenity benefit to the area. There are many important environmental designations in SMZ 3, including designated cliffs and a nature reserve. The interaction with the currently undefended Naish Cliff to the east of this zone has been an important consideration for the appraisal.

23. The recommended preferred options in this SMZ are summarized in the following table:

ODU	National Economic Leading Option	Local Aspirational Leading Option	Backup Option
12 - Avon Beach and Friars Cliff	Maintain / refurbish existing defences in first 20 years. Undertake beach nourishment in the 20-50 year period, as well as new rock groynes and raising Avon Beach seawall. Localised property level protection in the 50-100 year period to manage flood risk.	As per National option but undertake broader public realm enhancements (such as promenade raising)	'Scaled back' National option - Reduce beach nourishment volume / scale of defence improvements to reduce cost and improve affordability
13 - Highcliffe	In first 20 years construct rock armour defence at east end of unit to reduce outflanking risk. In first 50 years maintain existing defences and undertake beach recycling. In the 50-100 year period undertake beach nourishment, construct new rock groynes and refurbish defences	As per National option, except the beach nourishment in the 50-100 year period would be brought forward to be undertaken in the 20-50 year period. New rock groynes in the 50-100 year period.	'Scaled back' National option - Reduce beach nourishment volume / scale of defence improvements to reduce cost and improve affordability

24. The leading options in SMZ 3 are likely to obtain between 15-30% of capital scheme funding from central government (FCERM-GiA), with the rest of the cost needing to be funded by alternative sources – totalling cash value over 100 years estimated to be between £33m to £41m.

Conclusions

25. The strategy-recommended leading options identify where and when potential defence schemes can be implemented along the frontage, but identifies a significant funding challenge in order to deliver the national and/or local options.

26. In some cases, any intervention – even if funding can be secured – is unlikely to mitigate the long-term risks posed by climate change in terms of increasing risk of coastal flooding, erosion and landslides. Therefore the measures set-out in this strategy need to be considered as buying time and reflected in wider Local Planning policy with a view to the potential need for land-use adaptation longer-term (up to and beyond the 100-year horizon

adopted in developing this strategy).

Summary of financial implications

27. As identified above, following the current central government partnership funding rules means that neither of the recommended national economic nor local aspirational leading strategic options qualify for full central government FCERM grant in aid (GiA) funding, and will therefore need contributions from alternative sources.

28. The current partnership funding mechanism encourages those benefiting from schemes to contribute to their cost to supplement government grants. By working together, schemes which are still viable but have less economic benefits would still be able to unlock national funding to boost and prioritise schemes to implement the strategy. Raising sufficient funding will allow:

    - Development and delivery of the recommended coastal defence schemes
    - Increase in the standard of protection of defences
    - Improve the quality of materials used (e.g. to better fit the character of a location)
    - Increase certainty and accelerate the delivery of schemes
    - Deliver wider benefits to communities associated with schemes, such as improved landscaping, access and public realm
    - Deliver environmental enhancements to increase biodiversity.

29. Under these current funding rules, the scale of the funding contributions required over the next 100 years in cash terms across the BCP area ranges from £137m to £205m, depending on which combination of recommended strategic options (national, local or backup) are eventually taken forward.

30. Over the next 20 years, the contributions required in cash terms are estimated to be between £16m and £60m; or £0.8m and £3.0m per year if annualised. Within the BCP area, capital investments that comprise a significant proportion of the required contributions are needed as follows:

ODU	**Likely timing of capital intervention to replace aged defences from year 0 (2024)**	
	National Economic Leading Option	**Local Aspirational Leading Option**
1 – Hengistbury Head East	N/A – no capital intervention expected	10-14 years
2 – Mudeford Sandbank	N/A – no capital intervention expected	10-14 years
3 – Christchurch Harbour South	N/A – property level protection only, no capital intervention expected	10-14 years
4 - Wick	50-59 years	50-59 years
5 – Willow Drive and the Quomps	20-24 years	0-4 years
6 – River Avon West Bank	N/A – property level protection only, no capital intervention expected	N/A – no local option defined
7 – Rossiters Quay	20-24 years	N/A – no local option defined
9 - Stanpit	20-24 years	N/A – no local option defined

ODU	Likely timing of capital intervention to replace aged defences from year 0 (2024)	
	National Economic Leading Option	**Local Aspirational Leading Option**
10 - Mudeford	50-59 years	N/A – no local option defined
11 – Mudeford Quay	N/A – no capital intervention expected	N/A – property level protection only, no capital intervention expected
12 - Avon Beach and Friars Cliff	20-24 years	10-14 years
13 - Highcliffe	50-59 years	20-24 years

31. The balance of contributions required reflect the need for ongoing revenue expenditure by the asset owners to undertake maintenance works to ensure the assets are in a good enough state to meet the estimated spending and timing plan above, as well as providing protection for individual properties in some ODUs for which other non-GiA funding sources may be available.

32. As noted in paragraphs 12 and 13 above, these contribution amounts may change as more work is done to develop the schemes identified in the strategy. If these funding contributions are not achieved, then the strategy in some areas is to provide a minimum amount of intervention to manage risks for a period of time, but that will eventually ceases, leading eventually to the scale of damages and loss described above.

Summary of legal implications

33. The works required to implement the strategy-recommended leading options are undertaken under permissive powers granted to BCP and NFDC under the Coast Protection Act 1949 and Land Drainage Act 1991, and the Environment Agency under the Water Resources Act 1991. However, there is no statutory legal duty on these authorities to undertake these schemes if there is no justification and/or sufficient funding to do so.

Summary of human resources implications

34. There are no human resources implications arising from the strategy.

Summary of sustainability impact

35. As part of developing the strategy, a Strategic Environmental Assessment (SEA) has been undertaken. This has considered the implications of the range of technical options considered against a range of topics, objectives, and assessment questions, known as the SEA framework, to determine the sustainability of options in relation to: biodiversity and geodiversity, climate change, landscape, historic environment, land, soil and water resources, population and communities, and transport and movement.

36. In undertaking the SEA, consideration has included whether options offer the potential for biodiversity net gain or other environmental enhancements. The full SEA environmental report is provided in Appendix 2, and the findings of the SEA have informed the selection of the leading preferred options.

37. The SEA has been consulted on with statutory consultees including Natural England and Historic England, who have also provided letters of support.

38. A key outcome of the SEA, alongside informing selection of more sustainable leading options, is to identify monitoring requirements to implement in the near future in order that improved data is provided to inform decision making as schemes to implement the Strategy are developed in future years.

39. Alongside the SEA, a Habitat Regulations Assessment (HRA), Marine Conservation Zone (MCZ) Assessment and Water Framework Directive (WFD) Assessment have

also been completed and agreed with the respective statutory consultees.

40. The HRA Stage 1 (screening) identified potential for significant impacts on qualifying designated features associated with Special Areas of Conservation (SAC) and Special Protection Areas (SPAs) in the strategy area. The HRA Stage 2 (appropriate assessment) considered these aspects in greater detail and concluded that mitigation will normally be possible by only undertaking future works at specific times of year / states of water level – aspects that will need to be taken into account as and when detailed scheme designs are developed. The HRA did not identify any requirement to provide compensatory habitat to mitigate any potential impacts by continuing to defend areas against coastal flood and erosion risk.

41. The MCZ and WFD assessments concluded that there are some potential limited, temporary impacts of construction works in relation to increased sediment within the water column (i.e. turbidity) but no longer-term impacts of the proposed strategic options. These potential impacts will need to be considered further when detailed scheme designs are developed in future years to implement the strategy.

Summary of public health implications

42. Assuming the funding required to implement the recommended options in the strategy is secured, then the risks to public health from coastal flooding, erosion and land-sliding will be largely – but not wholly – mitigated.

43. If funding is not secured, there will be a significant and growing risk to public health from coastal flooding, erosion and land-sliding as the impacts of climate change, including sea level rise, grow. This will be added to by negative impacts on mental health and wellbeing due to risk of flooding/erosion/land-sliding to properties and associated impacts on property prices, as well as loss of public green amenity space.

44. In addition, the lack of funding will also increase the risk of historic landfill sites within the strategy area being eroded into the environment, with uncertain implications for public and environmental health.

Summary of equality implications

45. An Equality Impact Assessment (EIA) conversation / screening document has been completed and approved by the EIA panel on 9th May 2024 (see Appendix 3). The impacts of this Christchurch Bay & Harbour FCERM Strategy are generally positive.

46. The strategy sets out a clear plan for managing the risks of coastal flooding and erosion across Christchurch Bay and Harbour over the next 100 years.

47. The associated benefits of the strategy help reduce the risk and impact on people, infrastructure and places. The delivery of projects will improve climate awareness in the general population and protection measures should have a positive impact on the community by improving mental health, physical health and wellbeing.

48. Once adopted, we intend to inform stakeholders about the final approved Strategy, explain what it means, and what the next steps are to begin to implement the Strategy leading options in the areas identified as needing to be prioritised due to either the immediacy of risk and/or condition of existing defences.

49. Another priority will be securing the necessary funding to make sure preferred options (National Economic or Local Aspirational) can be delivered to provide the widest benefits to the community in the long term. Additional stakeholder engagement and participation in the delivery of projects will encourage more community cohesion and interaction.

50. Where the security of areas remains at risk, and it is not possible or appropriate to defend against flooding, erosion or maintaining the existing defences, in the long term, the strategy identifies flexible plans in the form of adaptive pathways. These help the awareness and understanding of local communities and provide the time and support to adapt to future changes.

Summary of risk assessment

51. If the required funding contributions are not secured, as the climate changes and sea levels rise, an ever-growing number of properties, roads, footpaths and areas of public realm will be at increasing risk of flooding and erosion over the next 100 years.

52. In addition, without developing a funding strategy to secure the required funding contributions to enable capital works to raise defences when required by this strategy, any new development / replacement development in areas at risk of flooding or coastal change will not be permitted, and the likelihood of needing to consider relocating people, property and infrastructure from those areas rises.

Background papers

None.

Appendices

Appendix 1 – Strategy Appraisal Report (StAR) for BCP and NFDC approval

Appendix 2 – Strategic Environmental Assessment (SEA) Report

Appendix 3 – Equality Impact Assessment.