

CHRISTCHURCH BAY & HARBOUR FLOOD & COASTAL EROSION RISK MANAGEMENT (FCERM) STRATEGY

1. RECOMMENDATIONS

- 1.1 That the Panel provides comments to the Cabinet on the content of this report and supports the intended Cabinet recommendations, as follows.
- i. Cabinet approve and adopt the recommended leading options identified in the Christchurch Bay & Harbour Flood & Coastal Erosion Risk Management (FCERM) Strategy for the New Forest District Council area, subject to securing the necessary funding contributions.
 - ii. In approving and adopting the strategy, that NFDC commits to developing a Funding Strategy that will seek to identify and aim to secure the necessary funding contributions to enable the national or local leading options to be implemented via future capital schemes and maintenance of existing/new schemes, noting that the exact amount of contributions will need to be confirmed as schemes are developed.
 - iii. Cabinet notes that there is no statutory duty upon NFDC as the Coast Protection Authority to undertake coast protection works, nor does the adoption of the strategy bind NFDC to commit to the provision of any funding for the delivery of the identified options.
 - iv. Cabinet notes that throughout the development of the strategy extensive engagement and consultation has been undertaken with:
 1. Residents & wider communities (including landowners, community groups, organisations and individuals)
 2. Key stakeholders,
 3. Officers & members

2. INTRODUCTION

- 2.1 Bournemouth, Christchurch and Poole Council (BCP), New Forest District Council (NFDC), and the Environment Agency have been working to develop a new FCERM Strategy for Christchurch Bay and Harbour (hereafter referred to as The Strategy) since the Spring of 2021. There has been extensive engagement with local communities and statutory stakeholders alike to identify and now recommend an adaptive approach to how the risks of coastal flooding, erosion and land-sliding in this area can be managed sustainably over the next 100 years in a changing climate.
- 2.2 The strategy identifies where, when and what type of works are needed to manage the risks of coastal flooding and erosion over the next century and what they may cost.
- 2.3 As Coast Protection Authorities, BCP and NFDC do not have any statutory duty to undertake coast protection work but can use permissive powers to protect the coastline and work with communities to help them adapt to future coastal change.

3. BACKGROUND

Why A Strategy Is Required

- 3.1 Coastal strategies sit at the second tier in the hierarchy of coastal management in England, sitting below the high-level Shoreline Management Plan policies (see table 2.1 of StAR). It is the role of the Strategy to consider how coastal flood and erosion risk is likely to change in the future, in response to climate change and to develop sustainable and robust options to manage the risks associated with coastal flooding and erosion. Developing a Strategy ensures that technically feasible, environmentally acceptable and economically viable options are recommended to reduce the risks from coastal flooding and erosion to people their properties and the environment.
- 3.2 For NFDC, this area of our coastline will experience significant risk to property and asset losses, through exposure to the greatest storm impacts from the southwest, along with a series of complex cliffs that are significantly affected by groundwater issues. Current coastal defence assets throughout the bay are at the end of their lifespan, with failures already being experienced, such as at Westover in 2020.
- 3.3 Without a strategic 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. A Strategy is also important to deliver an integrated approach to the management of our coastline. Holistic wider-level thinking behind Strategy decisions ensures that the management options implemented in one area do not increase the coastal flood and erosion risk in adjacent areas, and that opportunities to deliver wider benefits are not missed.
- 3.4 Importantly the Strategy is required to help gain approval for future schemes and obtaining public funding from central government for coastal defences known as flood and coastal erosion risk management grant in aid (FCERM-GiA).
- 3.5 However, it is important to note that there is no guarantee that any of the options recommended in the Strategy will be progressed. Implementation of options will be subject to funding availability and to gaining required consents. Public funds for coastal management are not widely available, so significant funding from a variety of sources will be needed to progress any options in this Strategy.

4. STRATEGY DEVELOPMENT

The Strategy Area

- 4.1 Since the Spring of 2021, supported by £525,000 Flood and Coastal Erosion Risk Management (FCERM) Grant-in-Aid from central Government, BCP Council, NFDC and the Environment Agency have worked collaboratively with the Engineering and Environmental Consultancy AECOM, to develop a new FCERM Strategy for Christchurch Bay and Harbour.
- 4.2 Due to the connectivity of the physical processes across Christchurch Bay and Harbour 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.
- 4.3 The coastline is complex with various risks including tidal flood risk around Christchurch Harbour and coastal erosion/ landslide risk along parts of the open coast. The population of the strategy area, including the towns of Christchurch,

Highcliffe, Barton-on-Sea, Milford-on-Sea and New Milton is estimated to be over one hundred thousand.

- 4.4 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 many visitors each year. Christchurch Bay beaches are popular with swimmers, surfers, sailors and walkers alike.

Current Defences

- 4.5 Many parts of the Strategy frontage are already defended; however, the condition, standard of protection (SoP) against coastal flooding and erosion and the expected life of these defences is highly variable.
- 4.6 Coastal defences are owned and maintained by both councils (BCP and NFDC), the Environment Agency and by private landowners. Many of the defences are in poor condition and are close to the end of their residual life. These assets require significant investment to withstand the impacts of climate change now and into the future.

Present And Future Coastal Flood & Erosion Risk

- 4.7 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.
- 4.8 In the future, with the increased storminess and rising sea levels that are predicted because of climate change, the risk of coastal flooding and erosion is likely to increase significantly.
- 4.9 Without actively implementing measures to manage coastal flood and erosion risks, over 1,600 properties are likely to be at risk of erosion and over 2,200 properties at risk from coastal flooding by 2124, in the strategy area. The table below identifies the properties within the New Forest District at risk. In addition to the property losses there will be losses of amenity / recreation land, along with other assets, such as beach huts, car parks and public conveniences.

Strategic Management Zone (SMZ)*	Properties at risk of coastal erosion by 2124**	Properties at risk of coastal flooding by 2124	Economic damages over the next 100 years (£k - cash)
4 (Naish Cliff & Barton-on-Sea)	597	0	184,139
5 (Taddiford)	1	0	707
6 (Milford-on-Sea)	661	139	208,216
	1,259	139	393,062

* See section 4 for explanation of SMZs

**Properties at risk from table 3.2 StAR & damage costs table 3.8 Economic Appraisal Report

- 4.10 In economic terms, the estimated damage from the risk of coastal flooding and erosion along the strategy frontage over the next century if we do nothing is £1.21 billion (cash) or £186 million (when discounted following HM Treasury guidance to allow for a comparison of future values in terms of their value in the present day).

The Strategy Development Approach

- 4.11 The Strategy has been developed in a staged approach. The first stages were focused on understanding the key features, issues and opportunities that exist within the Strategy area. To achieve this, several studies and activities were undertaken during the early stages of developing the Strategy. These included:
- i) Site walkovers and visual asset inspections to determine the location, type and condition of coastal defences and assets;
 - ii) A study of coastal processes to understand waves, tides, sediment movements and to look at the longer-term coastal flood and erosion risk to both the open and harbour coastlines;
 - iii) Identification of important environmental and heritage features along the frontage – so that key environmental objectives and legal requirements to protect the environment can be accounted for in the Strategy;
 - iv) Baseline economic assessment, including wider benefit assessment such as Gross Value Added assessment;
 - v) Identifying potential broader outcomes and opportunities – to capture ideas as to how the Strategy can be funded as well as deliver wider benefits to communities.
- 4.12 Having developed the above understanding, the latter stages of the Strategy development focused on identification and evaluation of a range of strategic approaches to managing coastal flood and erosion risks from long-list to short-list and then to leading preferred options (further details are provided below and in Appendix A).
- 4.13 Stakeholder engagement and consultation have been key to the Strategy's development. Since July 2021, four phases of engagement with key stakeholders, residents, and the wider community (including landowners, community groups, organisations and individuals) had sought to understand their aspirations and concerns, and to help shape the Strategy as it developed. The fifth phase of stakeholder communication was a formal 3-month public consultation on the draft leading options to manage the risk of coastal flooding and erosion and which closed in August 2023.
- 4.14 Engagement and consultation included face-to-face drop-in events, public online presentations with Q&A sessions, stakeholder workshops and surveys with a combination of traditional and online promotion. In total, over 12,000 people have viewed our website information, approximately 9,000 have engaged with our social media posts, around 730 people have attended our face-to-face and online events and 345 people have completed a survey. Further details are provided in Appendix E. The table below outlines the engagement events undertaken throughout the strategy development.

	2021	2022		2023	
Event	Round 1	Round 2	Round 3	Round 4	Round 5
Public engagement (inc. online briefings & exhibitions)	July to August	May to June	July	Nov to Jan	June to Aug
Online Councillor briefings	8 th July 2021	18 th May 2022		21 st Nov	27 th June*
Councillor & officer drop in event (ATC)					23 rd Nov

* Link to youtube recoding of 27th June Councillor briefing:

<https://www.youtube.com/watch?v=kNTisSoJ4bs+&feature=youtu.be>

- 4.15 In spring 2025 we intend to undertake a sixth round of communications to inform stakeholders about the final approved Strategy, explain what it means, and what the next steps are to begin to implement the Strategy in the areas identified as being those needing to be prioritised due to the immediacy of risk and/or condition of existing defences.
- 4.16 Alongside the 3-month public consultation, the draft Strategic Environmental Assessment, and Habitat Regulations Assessment, Water Framework Directive Assessment and Marine Conservation Zone Assessment have been consulted on with Statutory Consultees (i.e. Natural England, Historic England and the Environment Agency).
- 4.17 The feedback from this statutory consultation has been analysed and used to inform the selection of final leading preferred options that this paper is seeking approval of.

5. OPTIONS APPRAISAL APPROACH

- 5.1 The options appraisal process to identify and evaluate the range of strategic options involved identifying with stakeholders a wide-range of potential long-list options, appraising those against a multi-criteria appraisal matrix (also informed by stakeholder feedback) to identify a short-list of options, and then more detailed appraisal of that short-list to determine leading preferred options.
- 5.2 The options appraisal for the Strategy has been undertaken across a spatial framework consisting of six high level Strategic Management Zones (SMZs) shown in Figure 1. These have been further sub-divided into a total of eighteen smaller Option Development Units (ODUs) shown in the table below and in Figures 2 to 4 (NFDC area only). By dividing the Strategy frontage into these distinct areas, it has allowed the appraisal to develop options that are strategic in nature, but also consider local risks and opportunities at the ODU level. It also ensures that the Strategy considers the impact of options on nearby and adjacent locations.



Figure 1 The Strategy Management Zones defined across the Christchurch Bay & Harbour area.

SMZ	Authority	ODUs
1 – Mundeford Sandbank	BCP	1 & 2
2 - Christchurch Harbour	BCP	3, 4, 5, 6, 7, 8, 9, 10 & 11
3 – Christchurch Beaches & Cliffs	BCP	12 & 13
4 – Naish Cliff & BoS	NFDC	14
5 - Taddiford	NFDC	15
6 - MoS	NFDC	16, 17 & 18



Figure 2 The ODU14 defined in SMZ4 of the strategy area.

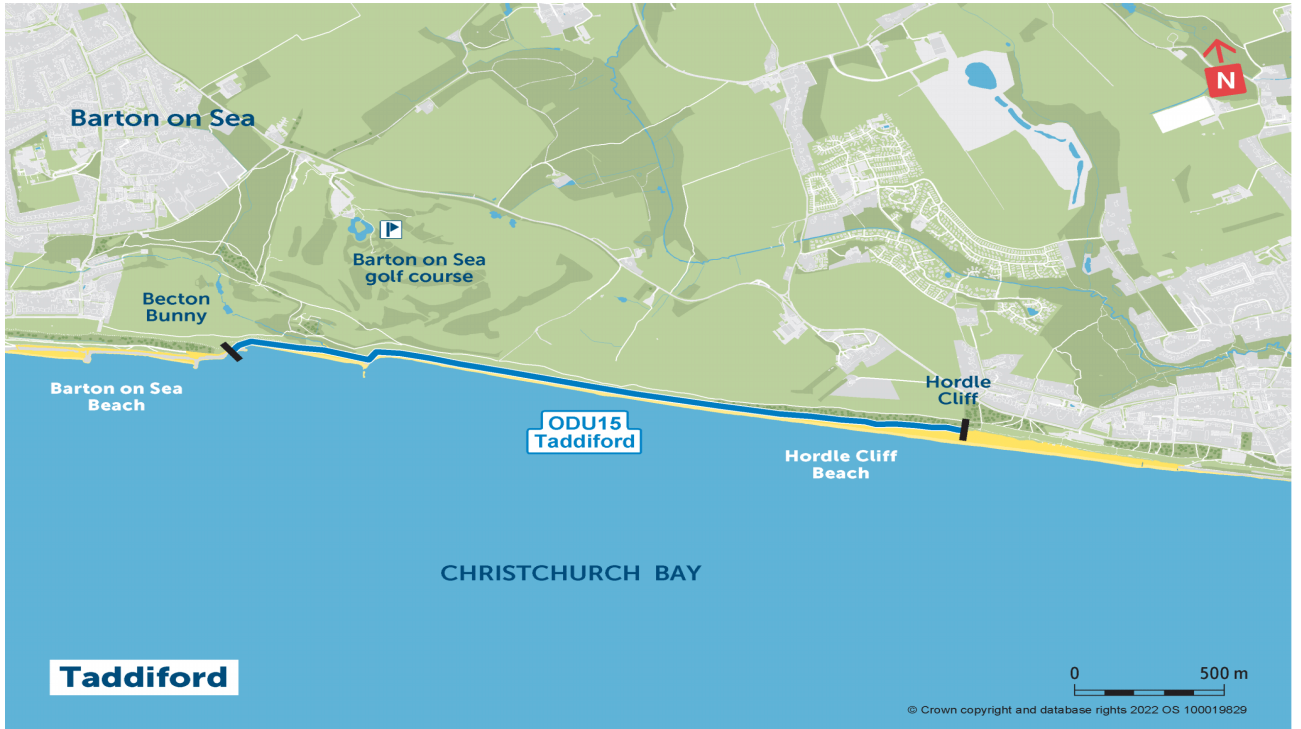


Figure 3 The ODUs defined in SMZ5 of the strategy area

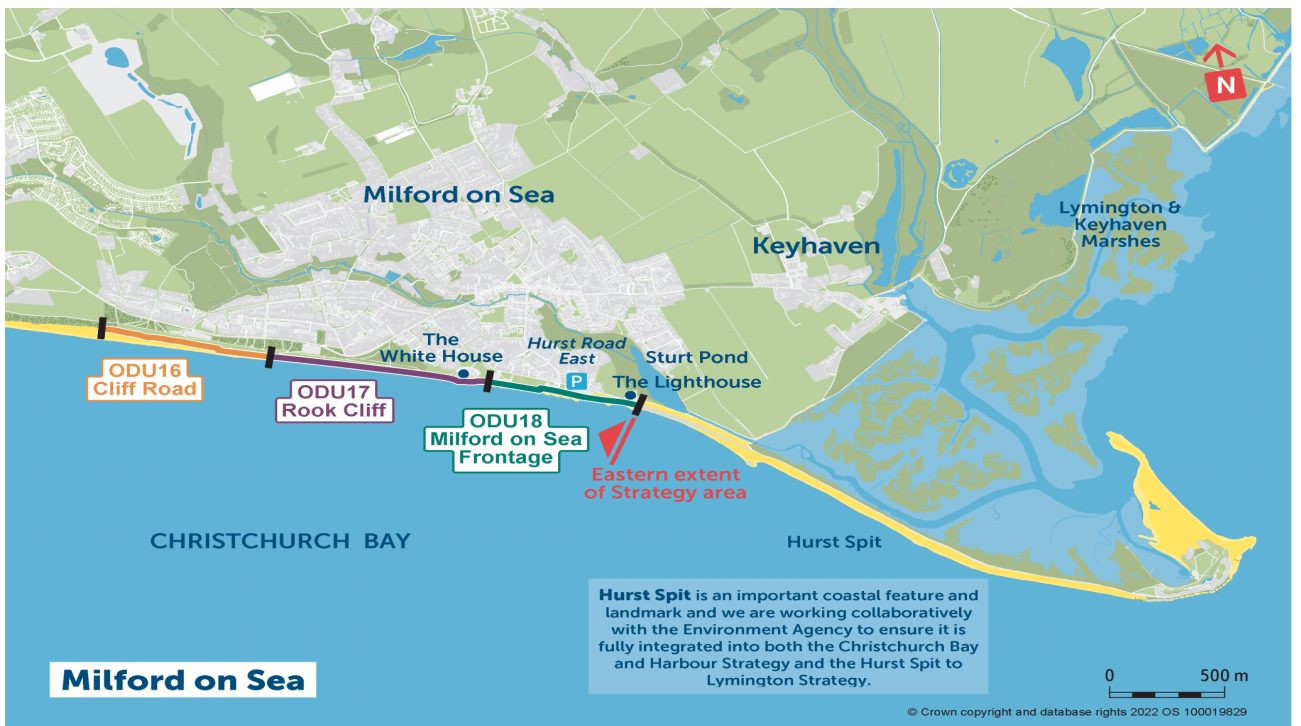


Figure 4 The ODUs defined in SMZ6 of the strategy area.

5.3 The options developed for the Strategy outline what the strategic intent of the option is (Do Nothing, Do Minimum, Maintain, Managed Realignment, Sustain or Improve the standard of protection) and the timings of the defence measures that are required to achieve this. The timings of defence measures were developed based on three-time epochs in the Strategy:

- Epoch 1 (short term): between 2024-2044
- Epoch 2 (medium term): between 2044-2074

- Epoch 3 (long term): between 2074-2124
- 5.4 In each ODU, up to three types of proposed leading options have been identified. These include:
- the National Economic leading option, which is identified by following the Environment Agency's FCERM 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; and
 - 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 in the longer-term.
- 5.5 Each type of option outlines the planned coastal defence interventions during the different epochs, in the form of an adaptive pathway for each ODU.
- 5.6 Given that 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 that will enable the ability to adjust course 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.
- 5.7 Further details on the options appraisal process are provided in Appendix A.

6. THE RECOMMENDED PREFERRED OPTIONS FOR THE NFDC AREA

(Refer also to Appendix A and Appendix B)

- 6.1 SMZ 4 – Naish Cliff and Barton on Sea
- SMZ 4 (Naish Cliff and Barton on Sea) includes the settlement of Barton on Sea and the currently undefended stretch of coastline at Naish Cliff. There is only one ODU in this zone, ODU 14, and the main risk facing this area is from erosion. ODU 14 is characterised by steep topography and an active cliff face that is environmentally designated as a Site of Special Scientific Interest (SSSI). The cliff in this area is a complex cliff and when undefended it erodes from the combined influence of sea erosion of the cliff toe and groundwater induced instability. Considering affordability constraints, and environmental designations along the cliff, it is unlikely to be possible to completely stop cliff erosion in this location.

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

ODU		National Economic Leading Option	Local Aspirational Leading Option	Backup Option
14 – Naish Cliff and Barton on Sea	Option	Managed Realignment A	-	Managed Realignment B; or Managed Realignment D; or Maintain
	Details	Improved toe defences and cliff stabilisation / drainage in the area between Marine Drive West and the eastern end of Barton on Sea during the first part of epoch 1. This would help to slow rates of cliff top recession but not stop it entirely.	-	Managed Realignment B: As per Managed Realignment A, except defence improvements would be undertaken during epoch 2. Managed Realignment D: As per Managed Realignment B, except no new cliff drainage and toe protection at Marine Drive West. Maintain: Maintain existing defences and functioning drainage but no new defences constructed.
	Option cost present value¹ (PV £k)	22,211	-	Managed Realignment B: 19,718 Managed Realignment D: 14,218 Maintain: 5,927
	Option benefits (PV £k)	23,489	-	Managed Realignment B: 20,077 Managed Realignment D: 14,391 Maintain: 5,959
	ABCR (Average Benefit Cost Ratio)	1.06	-	Managed Realignment B: 1.02 Managed Realignment D: 1.01 Maintain: 1.01
	Estimated partnership funding (PF) score for initial intervention	12%	-	-
	Estimated GiA availability for initial intervention (cash £k)	3,215	-	-

- The leading options in ODU 14 are likely to obtain central government funding for only a small proportion of the scheme costs (around 12%). Therefore, the majority of the cost will need to be funded from alternative sources, totaling cash value over 100 years estimated to be around £41.5m.

¹ When comparing costs and benefits across different time periods we discount the future. Discounting gives Present Value (PV), which is a way of representing the current value of future cash flows, based on the principle that money in the present is worth more than money in the future. More details on discounting can be found in the [Green Book](#).

6.2 SMZ 5 – Taddiford

- SMZ 5 (Taddiford) includes ODU15 and covers the area between Barton on Sea and Hordle Cliff. The area is currently undefended with no defences in front of the cliff. The beach provides the only protection to the cliff toe from erosion and also holds a recreational / amenity benefit. A permissive path exists along the cliff top (part of European long-distance path, route E9). There is no risk from tidal flooding in this location and the main source of risk is from erosion. However, relative to other parts of the frontage the erosion risk to properties is very low with minimal properties at risk (there are therefore no economic damages in this unit). This zone's full length is fronted by a marine Special Protection Area designation, and the cliffs are part of the Site of Special Scientific Interest (SSSI).
 - The option for this SMZ is do nothing, no defence maintenance (there are no defences) or beach management undertaken. If appropriate undertake health and safety activities following cliff erosion events to make safe public spaces.
- The Do-Nothing option is in line with SMP policy and due to there being minimal properties at risk there is no justification to construct new defences. There is potential to place additional beach material in this unit as part of a wider beach nourishment scheme and due to the longshore transport direction being from west to east, this would provide benefit to SMZ 6 to the east. Options for material placement may be explored after the Strategy during the outline design of future schemes in SMZ 6.

6.3 SMZ 6 – Milford – on – Sea

- SMZ 6 (Milford on Sea) includes ODUs 16, 17 and 18 and covers the frontage between Hordle Cliff and the western end of Hurst Spit. The cliff elevation reduces from west to east in this zone. There is a risk of coastal erosion in this location and there is also localised flood risk at the eastern end of ODU 18 where the cliff elevation is reduced. Here wave overtopping can occur from the open coast, and there is also a risk of tidal inundation and fluvial flooding from the Sturt Pond and Danes Stream area. A key issue for this frontage is the management of beach levels. There has been a recent trend of beach erosion that has increased the pressure on the defences at the back of the beach. Here a beach is required to protect the toe of the existing seawall and in the past low beach levels have contributed to seawall failures. The leading options focus on managing the beach levels in this location through periodic nourishment and larger scale beach nourishment schemes.
- The appraisal of options for Hurst Spit itself is being led by the adjacent Hurst Spit to Lymington Strategy. Both project teams have collaborated to ensure a joined-up approach is taken. The leading options in ODUs 16-18 will ensure that the options for managing Hurst Spit can also be undertaken (and vice-versa).

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

ODU		National Economic Leading Option	Local Aspirational Leading Option	Backup Option
16 – Cliff Road	Option	Managed Realignment C	Managed Realignment A or B	Maintain
	Details	From second half of epoch 2 undertake beach nourishment and construct local strong point to control rate of cliff erosion. Cliff top recession would still occur but intent would be to prevent it reaching Cliff Road.	As per Managed Realignment C, except beach nourishment and strong point would be constructed much sooner, in either epoch 1 (Managed Realignment A) or start of epoch 2 (Managed Realignment B)	Maintain existing defences and undertake beach recycling to control beach levels. In the long term this is likely to lead to more erosion than the Managed Realignment options.
	Option cost (PV £k)	4,405	5,069 – 5,612	1,791
	Option benefits (PV £k)	7,400	7,400	3,017
	ABCR	1.68	1.32 – 1.46	1.68
	Estimated PF score for initial intervention	19%	21% – 29%	-
	Estimated GiA availability for initial intervention (cash £k)	1,932	1,301 – 1,564	-
17 – Rook Cliff	Option	Improve C	Improve A or B	Maintain:
	Details	Refurbish existing cliff toe defences in epoch 1. From second half of epoch 2 upgrade defences at cliff toe.	As per Improve C, except toe defence improvements would be constructed much sooner, in either epoch 1 (Managed Realignment A) or start of epoch 2 (Managed Realignment B)	Maintain existing defences at the toe of the cliff. Long term sustainability of this approach is uncertain given lowering beach levels in this location and this option is therefore likely to lead to more erosion than the Improve options.
	Option cost (PV £k)	9,055	9,376 – 11,471	4,110
	Option benefits (PV £k)	11,516	11,516	4,222
	ABCR	1.27	1.00 – 1.23	1.03
	Estimated PF score for initial intervention	20%	15% - 18%	-
	Estimated GiA availability for initial intervention (cash £k)	3,457	2,400 – 2,676	-
18 – Milford on Sea	Option	Improve A / Improve B	-	Maintain
	Details	Upgrade seawall, construct new groynes and undertake major beach nourishment from epoch 1. Construct setback tidal flood defences at eastern end of Milford on Sea to reduce risk of flooding from Sturt Pond	-	Maintain: Maintain existing defences and undertake beach recycling. Long term effectiveness is uncertain.

ODU		National Economic Leading Option	Local Aspirational Leading Option	Backup Option
		direction in epoch 2. Improve B: As per Improve A, except upgrade coastal defences and beach nourishment in epoch 2. Refurbish existing defences in epoch 1 to extend service life until upgrade.		
	Option cost (PV £k)	11,060 (Improve A) / 11,035 (Improve B)	-	Maintain: 8,872
	Option benefits (PV £k)	11,155 (Improve A or Improve B)	-	Maintain: 8,933
	ABCR	1.01 (Improve A or Improve B)	-	Maintain: 1.01
	Estimated PF score for initial intervention	12%	-	-
	Estimated GiA availability for initial intervention (cash £k)	1,355	-	-

- The leading options in this SMZ are likely to obtain central government funding for only a small proportion of the scheme costs (around 12-29%). Therefore, the majority of the cost will need to be funded from alternative sources, totaling cash value over 100 years estimated to be in excess of £57m.

7. CONCLUSIONS

- 7.1 The Strategy's 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.
- 7.2 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 landsliding. 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).

8. FINANCIAL IMPLICATIONS

- 8.1 As identified above, following the current central government partnership funding rules means that the recommended leading strategic options do not qualify for full central government FCERM grant in aid (GiA) funding and will therefore need contributions from alternative sources to be delivered.
- 8.2 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 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.
- 8.3 Under these current funding rules, the scale of the funding contributions required over the next 100 years in cash terms across the NFDC area ranges from £88m - £99m, depending on which combination of recommended strategic options (national, local or backup) are eventually taken forward.
- 8.4 Over the next 20 years, the contributions required in cash terms are estimated to be between £39m - £50m; or £2.0m - £2.5m per year if annualized. Within the NFDC area, capital investments that comprise a significant proportion of the required contributions are needed as follows:

8.5

ODU	Likely timing of capital intervention to replace aged defences from year 0 (2024)	
	National Economic Leading Option	Local Aspirational Leading Option
14	5 -9 years	N/A – no local option defined
15	N/A – no capital intervention expected	N/A – no local option defined
16	35-39 years	5-9 years
17	35-39 years (refurbishment in year 5-9 years)	5-9 years
18	5-9 years	N/A – no local option defined

- 8.6 The balance of contributions required reflect the need for ongoing revenue expenditure by the asset owners to undertake maintenance works to ensure estimated defence life is provided to reach the anticipated replacement capital investment timing indicated above, as well as implementing property level protection in some ODUs for which other non-GiA funding sources may be available.
- 8.7 It should be noted that the level of funding contributions required are indicative and may change (up or down) as more work is undertaken to develop schemes and refinement of required works, costs, etc are developed; as such 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.
- 8.8 If these funding contributions are not achieved, then the Strategy in some areas identifies a back-up option that will provide a minimum amount of intervention to manage risks for a period of time, but that will eventually cease and the do-nothing scenario will become more likely, leading eventually to the scale of damages and loss described above.
- 8.9 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 land sliding. 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).
- 8.10 The following tables illustrate the estimated timing of funding contributions required over the 100-year period in order to deliver the Strategy in the NFDC area as a whole, along with requirements for each Option Development Unit:

Leading Option	Option Overview (Epoch 1)	Epoch 1 Costs (£K)	Indicative GiA (£K & % amount)	Partnership Funding Required (£K)
Naish Cliff and Barton – on - Sea				
ODU 14 - National	Improve toe defences, cliff stabilization & drainage	27,165	3,215 (12%)	23,680
ODU 14 – Backup B	Maintenance works only in epoch 1	1,020	N/A	1,020
ODU 14 – Backup D	Maintenance works only in epoch 1	1,020	N/A	N/A
ODU 14 – Backup Maintain	Maintenance with some refurb	6,126	N/A	N/A
Cliff Road				
ODU 16 - National	Maintenance works only in epoch 1	392	N/A	N/A
ODU 16 – Local	Beach recharge & rock structure construction	5,032	1,301 (26%)	3,731
ODU 16 - Backup	Maintain existing defences and undertake beach recycling (reliant on recharge in other units). In the long term this is likely to lead to more erosion than the Managed Realignment options.	785	N/A	N/A
Rook Cliff				
ODU 17 - National	Refurbishment of existing defences	3,986	N/A	3,986
ODU 17 – Local	Improve defences	13,825	2,400 (17%)	11,425
ODU 17 - Backup	Maintain toe defences	3,985	N/A	3,985
Milford – on- Sea				
ODU 18 - National	Seawall repairs, control structures & small scale recharge	11,964	1,355 (11%)	10,609
ODU 18 – Backup B	Refurb existing defences & beach recharge. Major works in epoch 2	5,301	N/A	5,301
ODU 18 - Maintain	Ongoing beach management, refurb of defences & beach recharge	6,752	N/A	6,752

Leading Option	Description	Indicative non-GiA funding contribution required (£k) – cash*														Total	
		Epoch 1 (years)				Epoch 2 (years)						Epoch 3 (years)					
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-59	60-69	70-79	80-89		90-99
National		1,206	7,180	30,044	507	870	786	4,493	22,961	659	659	3,584	15,413	1,568	7,193	1,550	98,673
Local**	(With National where no Local)	1,206	17,880	30,083	546	659	659	6,040	659	659	659	7,986	13,739	1,568	4,465	1,553	88,361

*Indicative funding for major capital scheme in option (if multiple capital schemes, not all have been assessed).

**Local option funding does not include GiA for ODUs 14 and 18 even though some could be available. This is because the BCR for the local option in these ODUs is <1, and it is uncertain if it will be viable to proceed with these if funding contributions are not forthcoming.

9. LEGAL IMPLICATION

- 9.1 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 insufficient funding to do so.

10. CRIME & DISORDER IMPLICATIONS

- 10.1 There are no crime & disorder implications arising from the Strategy.

11. ENVIRONMENTAL IMPLICATIONS

- 11.1 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.
- 11.2 In undertaking the SEA assessment, 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 C, and the findings of the SEA have informed the selection of the leading preferred options.
- 11.3 The SEA has been consulted on with statutory consultees including Natural England and Historic England, who have also provided letters of support (see Appendix D).
- 11.4 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.
- 11.5 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.
- 11.6 The HRA Stage 1 (Screening) identified potential for significant impacts on qualifying designated features associated with SAC and SPAs in the Strategy area. The HRA Stage 2 (Appropriate Assessment) considered these aspects in greater detail and concluded that mitigation will in the main 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 in future years to implement the Strategy. The HRA did not identify any requirement to provide compensatory habitat to mitigate any potential coastal squeeze impacts by continuing to defend areas against coastal flood and erosion risk.
- 11.7 The MCZ and WFD Assessments concluded that there are some potential limited, temporary impacts of construction works in relation to increased sediment 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.

12. EQUALITY & DIVERSITY IMPLICATIONS

12.1 NFDC Equality Impact Assessment completed 25th April 2024. No impacts were identified as a result of the assessment.

13. DATA PROTECTION IMPLICATIONS

13.1 There are no data protection implications arising from the Strategy.

14. PORTFOLIO HOLDER COMMENTS

(Required for reports to the Cabinet)

For further information contact:

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Background Papers:

Appendix A – Strategy Appraisal Report (StAR)

Appendix B – Implementation / Action Plan

Appendix C – Strategic Environmental Assessment (SEA)

Appendix D – SEA Letters of Support from Statutory Consultees

Appendix E – Consultation Report