

Report subject	Flood Defences - Poole Bridge to Hunger Hill
Meeting date	30 September 2020
Status	Public Report
Executive summary	<p>Poole town centre is at considerable flood risk which will increase over time with the effects of climate change. Recent schemes have been completed from Baiter to Poole Bridge, delivered by both the Environment Agency (EA) and Poole Harbour Commissioners (PHC). However, the area remains at risk due to the ageing infrastructure between Poole Bridge and Hunger Hill. BCP Council is leading on a proposal for tidal flood defences on the remaining frontage.</p> <p>The current policy of flood defence delivery through regeneration and private development has not provided the required level of investment. Our proposal is to deliver via a single scheme, led by the council, working in liaison with the various landowners.</p> <p>The costs to build the defences are estimated at circa £12m for delivery of all primary works in a single phase. The OBC confirms it is all eligible via Flood Defence Grant in Aid.</p> <p>This is implementing the preferred option from the (2014) Poole Bay, Poole Harbour and Wareham, Flood and Coastal Erosion Risk Management Strategy (PWFRMS). This approved strategy identified that within Central Poole Cell there are 573 properties at flood risk in the present day 1% AEP event, rising to over 2,000 properties at flood risk by 2110.</p> <p>The preferred option is for a new quay wall between the bridges and a crown wall in addition to the existing defences north of RNLI, along with some localised land raising and flood gates around the RNLI site. The most economic approach allows for adaptive phasing, with minor additional works (~£836k) planned for 2071 and 2105. The OBC currently states BCP will underwrite the cost of the future phases.</p> <p>The scheme should be a catalyst for future development along West Quay Road, and public realm enhancement, identified in the Local Plan (2018), also providing continuous pedestrian and cycle access from the Town Quay to Holes Bay. New quay wall heights</p>

	and public walkways will be consistent with any redevelopment of the power station site on the opposite side of Backwater Channel.
Recommendations	<p>It is RECOMMENDED that:</p> <ul style="list-style-type: none"> a) Cabinet approves submission of an Outline Business Case to the Environment Agency's Large Projects Review Group (LPRG) to seek circa £12m Flood Defence Grant in Aid (FDGiA) to construct tidal flood defences from Poole Bridge to Hunger Hill. LPRG is provisionally booked for Oct 2020. b) Cabinet approves that BCP Council adopt the new flood defence assets and commit to fund future maintenance costs (estimated £303k over 85 years) c) Cabinet approves for BCP to underwrite the costs, identified in the OBC, for adaptation measures for future phases of construction within the business case – estimated at a total of £836k in years 2071 and 2105. d) Delegate authority to the Director for Growth and Infrastructure in consultation with the Section 151 and Monitoring Officers to agree the terms of any funding and/or supplier agreement(s)
Reason for recommendations	<ul style="list-style-type: none"> 1. Mitigates high level of flood risk for West Quay Road, Old Town and parts of the Town Centre in Poole 2. To influence the potential for future development coming forward in the Twin Sails Regeneration Area, contributing to delivery of the Local Plan. 3. Positive public realm / place shaping consistency across the central area of the Poole. 4. Ease developer viability issues, unlocking land for much needed housing, contributing to council targets 5. Enables regeneration initiatives / highway improvements otherwise hindered or at risk by flooding 6. Prevent the need for the EA's temporary defence plan that would temporary barriers erected along highway for the whole area 7. All initial works fully funded via Flood Defence Grant in Aid, so zero cost to the council 8. Contributes to Defra targets to protect household from flooding 9. Present day value of damages in a 'do-nothing' scenario is £161m and with a proposed scheme cost of around £12m, the cost-benefit ratio is over 13 to 1

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Wards	Poole Town;
Classification	For Recommendation

Background

1. Central Poole has significant flood risk with the Poole Bridge to Hunger Hill area not benefitting from any formalised flood defence assets. The current water frontage (shown in Figure 1.1), is in a mixture of different private ownerships, inconsistent defence levels and in varying condition states. Most of the existing defence levels are very low, with several being overtopped on a simple high spring tide.
2. The ongoing urban regeneration of the Twin Sails area was expected to include the delivery of the required flood defences to protect both new development and the wider flood-risk area within Poole Town Centre. However, it has not materialised and recent developments (at the RNLI) have only included defences along discrete lengths. The flood risk remains across the whole of Back Water Channel and this will significantly increase in future years with the impacts of climate change, including sea level rise.
3. Developers and Landowners have shown positive support for a single scheme to deliver the required defences, giving confidence that scheme delivery can progress through to construction without significant challenge. Access has already been provided to undertake Ground Investigations to inform the OBC.
4. The proposed scheme combines with other recent projects delivered by the Environment Agency, Poole Harbour Commissioners and BCP Council to provide improved tidal flood protection to the urban area and include:
 - Holes Bay Flood Defences 2018
 - Poole Quay Sea Wall 2015-2019



Fig. 1.1 shows the proposed flood defence extents along Back Water Channel from Hunger Hill (A350, Holes Bay Road) to the historic Poole Bridge.

Strategic Context

5. The OBC follows the recommendations of both the Poole and Christchurch Bays Shoreline Management Plan (2011) which set a policy of 'Hold the Line' for all of the urban northern Poole Harbour shoreline and the Poole Bay, Poole Harbour and Wareham Flood and Coastal Erosion Management (FCERM) Strategy (2014). Business cases for Flood Defence Grant in Aid must be in line with the approved Strategy.
6. The flood defence scheme is listed on the Environment Agency's (EA) Flood and Coastal Erosion Risk Management (FCERM) medium term plan for reducing flood risk to residential and commercial property. Currently, the EA has a temporary de-mountable flood defence plan for West Quay Road. However, a permanent solution is urgently sought due to the complexities and disruption of erecting a temporary barrier along the entire length of the highway.

7. The proposed flood defences from Poole Bridge to Hunger Hill also align with several strategies addressing the management of flood and coastal risk. More detail is provided in: Background Papers.

Scheme Objectives and Benefits

8. The proposed flood defence scheme has numerous objectives which relate to three main themes including:
 - **Flood risk mitigation.** Implement the preferred option in line with local flood risk management strategy, thereby mitigating the increasing risk of flooding to people and property in light of the impacts of climate change.
 - **Regeneration.** To help unlock land for future development, provide the potential for public realm improvement and contribute positively to BCP Council's sustainability agenda.
 - **Environment.** Have full regard for the special environmental sensitivities of the location, seeking to maintain and enhance where possible the condition or integrity of the designated sites.

The proposed scheme design provides a 1 in 200 year Standard of Protection (0.5% AEP). It is important to note that no projects eliminate flood risk, but mitigate to a set design standard.

Key benefits are listed in 'reasons for recommendation'.

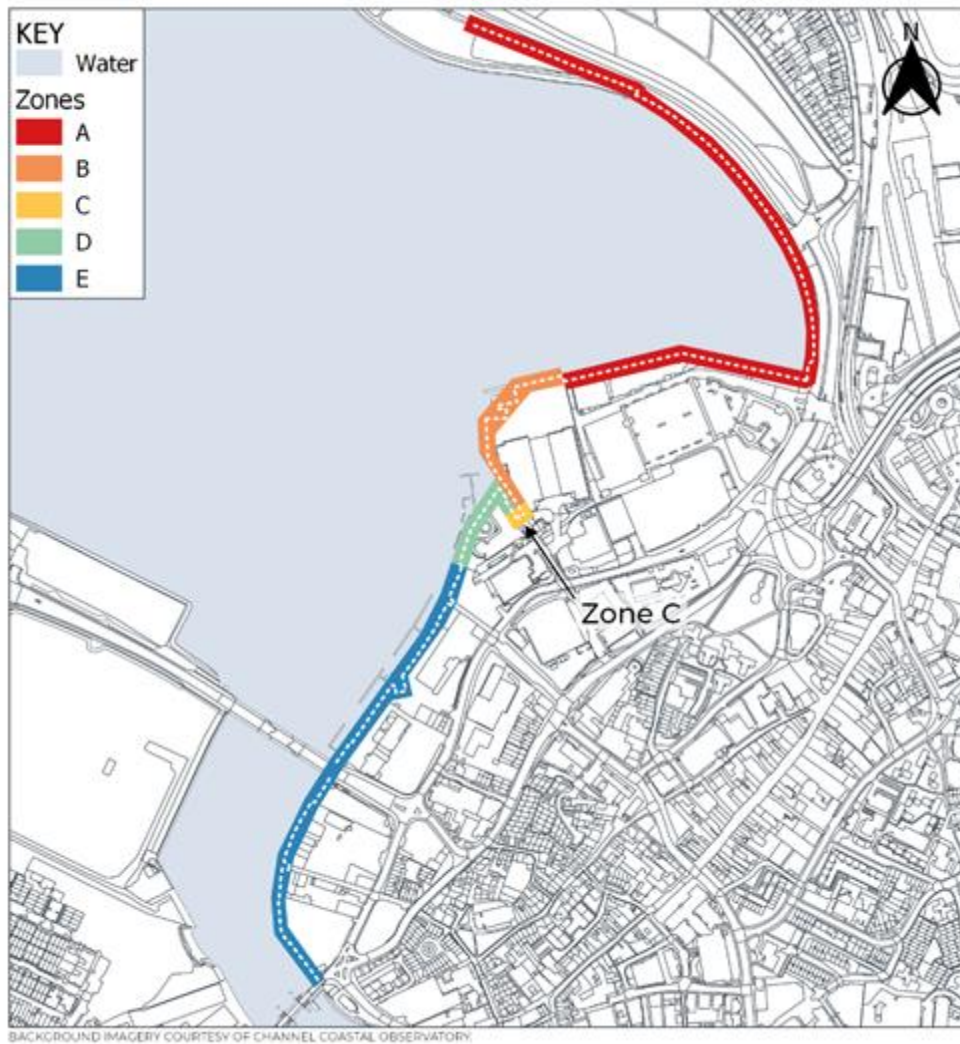
Summary of Options

9. The options for Cabinet to consider are either:
 - Submit an OBC to the EA for funding of a flood defence scheme along the Poole Bridge to Hunger Hill frontage, facilitating the construction of defences starting as soon as possible (aiming for Autumn/Winter 2021)or
 - Continue to wait for developers/landowners to build new developments that will incorporate the required flood defence measures

Options Appraisal

10. Details of decision making within the OBC

The area was split into 5 discrete cells to assess the options as each had very different existing assets and issues.



The OBC details how the options for each frontage are considered and how the final recommended options, in line with the approved Strategy, are chosen. The high level information from the Multi-Criteria Analysis is shown in table 1.1 below.

Table 1.1

Location	Description	Reason for short list or rejection
Zone A	Raise defences now to 3.6m AOD (0.5%AEP for 100yrs)	Rejected: Significant immediate impacts and no adaptive approach. Unnecessary intervention too early unlikely to secure support and consents.
	Raise defences now to 2.65m AOD (0.5% AEP for 50yrs), then raise to 3.6m AOD in 2071	Shortlisted: Adaptive approach. Limited environmental impacts and buildability issues.
	Provide temporary demountables (such as EA national asset) or similar	Rejected: Effectiveness uncertain. Significant disruption during deployment. Reliant on accurate forecasting.
Zone B	Raise defences now to 3.6m AOD (0.5%AEP for 100yrs)	Rejected: Existing wall asset new with long residual life. Inefficient to replace now.

Location	Description	Reason for short list or rejection
	<i>Raise defences in 2105 to 3.6m AOD (0.5%AEP for 100yrs)</i>	Shortlisted: Adaptive approach. Economic use of existing asset with good SOP for next 85yrs.
	<i>Provide temporary demountables from 2105 (such as EA national asset) or similar</i>	Rejected: Effectiveness uncertain. Significant disruption during deployment. Reliant on accurate forecasting.
Zone C	<i>Ground raise and/or floodgate now to 3.6m AOD (0.5%AEP for 100yrs)</i>	Rejected: Unnecessary scale of intervention to early. Relative short gate life will be life expired before need.
	<i>Ground raise and/or floodgate now to 2.49m AOD and then raise to 3.6m AOD in 2071</i>	Shortlist: Adaptive approach. Economic use of assets.
	<i>Provide temporary demountables (such as EA national asset) or similar</i>	Rejected: Effectiveness uncertain. Significant disruption during deployment. Reliant on accurate forecasting.
Zone D	<i>Raise defences now to 3.6m AOD (0.5%AEP for 100yrs)</i>	Rejected: Existing wall asset with long residual life. Inefficient and unnecessary to replace now.
	<i>Raise defences in 2071 to 3.6m AOD</i>	Shortlisted: Adaptive approach. Economic use of existing asset with good SOP for next 50yrs.
	<i>Construct set back defence in 2071 to 3.6m AOD</i>	Rejected: Quay wall infrastructure still required for existing asset owner.
	<i>Provide temporary demountables (such as EA national asset) or similar</i>	Rejected: Effectiveness uncertain. Significant disruption during deployment. Reliant on accurate forecasting.
Zone E	<i>Raise defences now to 3.6m AOD (0.5%AEP for 100yrs)</i>	Shortlisted: Replacement wall required in this zone. More cost effective to build to target height from year 0.
	<i>Raise defences now to 2.65m AOD (0.5% AEP for 50yrs), then raise to 3.6m AOD in 2071</i>	Rejected: Insufficient to provide regeneration confidence. Inefficient construction approach and not cost effective.
	<i>Provide temporary demountables (such as EA national asset) or similar</i>	Rejected: Effectiveness uncertain. Significant disruption during deployment. Reliant on accurate forecasting.

The OBC preferred option(s) needs to follow the FCERM Appraisal Guidance rules in order to satisfy the requirements for technical and financial approval by the Environment Agency.

Table 1.1 shows the recommended options that form the basis of the proposed OBC.

11. Continuing to rely on developers to provide flood defences

The current policy of flood defence delivery wholly through regeneration and private development is not providing the required level of investment to achieve the FCERM strategy policy, resulting in the need to investigate alternative options and funding mechanisms.

Summary of financial implications

12. The financial breakdown of scheme funding is as follows:

2019/20 - £310k Local Levy to draft OBC

Subject to OBC approval:

2020/21/22 – circa £12m (OBC being finalised) Flood Defence Grant in Aid for detailed design and construction of all main elements of the flood defences.

Future costs:

Maintenance - £303k over the life of the scheme, through BCP revenue maintenance budget

2071 & 2105 - £863k for minor adaptation measures meet the required standard of protection set out in the OBC. This will be funded through the RNLI for works on their site and through CIL (as agreed at Project Board).

For the purposes of bidding for Flood defence Grant in Aid, BCP are to underwrite all future costs.

13. Key financial parameters of the business case:

PV Benefits of ~£161m over the life of the scheme through variety of factors including flood risk to properties as well as people related benefits such as 'risk to life'.

Benefit cost ratio of over 13 to 1

Summary of legal implications

14. As a Coast Protection Authority and Land Drainage Authority, BCP council can deliver Flood and Coastal Erosion Risk Management schemes using their permissive powers (Coast Protection Act 1949 and Land Drainage Act 1991). BCP Council are also a Lead Local Flood Authority, as detailed in the Flood and Water Management Act 2010.
15. Having adopted the Poole Bay, Poole Harbour and Wareham Flood and Coastal Erosion Risk Management Strategy (2014), BCP Council are the Risk Management Authority with responsibility for the Poole Bridge to Hunger Hill coastal frontage.
16. The FCERM team aim to do deliver the scheme in conjunction and agreement with landowners, developers and other stakeholders. Presentations were provided to developers and land owners in July 2019 and they are very supportive of the single scheme approach. The new flood defences will be in the ownership of BCP Council, including the future maintenance.

Summary of human resources implications

17. BCP Council can deliver the scheme with a combination of in-house staff and the technical support of the Council's professional services framework contract with WSP.
18. Once built, the flood risk management assets will be monitored through regular inspections and maintained by BCP Council's FCERM Team.

Summary of sustainability impact

19. The proposed flood defences provide a long-term, sustainable, adaptive approach to implementing coastal flood risk management that is technically, environmentally and economically viable, considering future projections of climate change and sea level rise.
20. The scheme has full regard for the special environmental sensitivities of the location (SSSI, SPA, Ramsar) and requires licence and consents as required for defence works of this nature through the Crown Estate, Marine Management Organisation (MMO), Natural England and BCP Council as the Planning Authority to provide:
 - Environmental Impact Assessment screening opinion (requested)
 - Construction Noise and Vibration Assessment (complete)
 - Preliminary Ecological Appraisal (complete)
 - Habitats Regulation Screening Assessment (complete)
 - SSSI Assent
 - Water Framework Directive assessment (complete)
21. Construction delivery will be strictly administered to minimise carbon footprint. This is embedded in all Flood Defence Grant in Aid schemes and the EA's carbon calculator will be utilised throughout the detailed design stage.
22. Flood and erosion risk is a key factor when considering sustainability of any proposals within BCP Council and forms part of the new Decision Impact Assessment. The fact this project will mitigate such risk over the whole Poole Town Centre area will ensure an extremely positive 'sustainability impact' is delivered.

Summary of public health implications

23. The delivery of the flood defences from Poole Bridge to Hunger Hill will provide significant reduction to the risk of flooding to people and property, which emerging research demonstrates will give considerable public health and well-being benefits. The OBC benefits realisation had a large proportion of its value derived from people related benefits (47%), thus demonstrating that the project will deliver a significant positive impact.
24. To put this in another context, if BCP Council does not deliver the required flood defences, there will be considerable negative health implications in future years, both from the mental/emotional impact of flooding as well as a risk to life.

25. The work also involves extensive stakeholder engagement, providing an opportunity to share information and educate local communities about the future risks of flooding and the benefits that flood protection schemes can bring. Additional benefits to communities can be considered to improve public realm as well as provide flood and erosion risk management.
26. The proposed scheme will help deliver the regeneration aims of a continuous seafront access route from the Town Quay to Holes Bay, significantly improving the ability for public leisure / exercise and reducing the volume of traffic in the town centre.

Summary of equality implications

27. There are no equality implications of this recommendation.

Summary of risk assessment

28. Without the provision of the proposed flood defences, over the next 100 years, significant numbers of residential and commercial properties and highways infrastructure would experience tidal flooding. The potential adverse impact to the tourism economy and amenity benefit would be of a scale of local, regional and national importance.

Background papers

29. The provision of flood defences for Poole Bridge to Hunger Hill is consistent with all relevant local and national strategies and policies, the most notable of which are summarised below;

30. National FCERM Strategy for England, (Presented to Parliament) July 2020

The National FCERM strategy has been split into three high level core ambitions concerning future risk and investment need:

- *climate resilient places: working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change*
- *today's growth and infrastructure resilient to tomorrow's climate; Making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as resilient infrastructure; and*
- *a nation ready to respond and adapt to flooding and coastal change.*

31. Defra – 25yr Environment Plan, 2017

One of the five objectives outlined in Defra's single department plan is to create a nation better protected from floods and other hazards with strong response and capabilities by;

- *Better protecting 300,000 homes from flooding by 2022;*
- *Build, maintain and operate high quality flood and coastal erosion risk management assets;*
- *Publish guidance to Local Authorities and other flood risk management authorities on coastal adaptation.*

32. Poole and Christchurch Bay Shoreline Management Plan 2 (SMP2), 2011
<http://www.twobays.net/smp2.htm>.

The Poole and Christchurch Bay SMP2 covers the project frontage and was first adopted in 2011.

The project area falls within Policy Development Zone 3 – Poole Harbour and Associated Coastline and at a more detailed level within Management Unit PHB.I (Poole Harbour North).

The agreed policy is 'Hold the Line' for the project frontage, recognising that this area includes the core residential, commercial and heritage centre of Poole. The principal aim over the whole area is to maintain the important regional and national economic viability of the area. As such the policy throughout the area is to continue to defend the built and recreational assets.

The SMP2 'refresh' process is currently underway with BCP Council having hosted a meeting on this specific topic. There are currently no proposals to change any of the agreed policies or management intent on the coastal units within Poole Harbour.

33. Poole Bay, Poole Harbour and Wareham Flood and Coastal Erosion Risk Management Strategy (PWFRMS), 2014

The PWFRMS was submitted to the EA's Large Project Review Group (LPRG) in 2013 and was approved by the EA in December 2014. Previous numerous related studies and strategies have been undertaken and where appropriate were considered within the P&W Strategy. Particularly relevant studies include;

- Poole Bay and Harbour Strategy (BBC, 2004);
- Borough of Poole Flood Risk Management Strategy (BoP, 2011); and
- Borough of Poole Strategic Flood Risk Assessment Level 1 & 2 (BoP, updated 2017).

The PWFRMS identified a preferred option of 'Improve' for the Central Poole cell (see Table 2.1), with the deliverable standard of protection to be determined at the detailed appraisal stage.

Option	Description Summary
4a: Improve (1% AEP min)	<p>Short term: Replace seawalls near Lifting Bridge and at West Quay Road and Power Station site (potential private development areas). Raise quay wall between Dolphin Quay and Fishermen Landing Stage. Establish cut-off flood defence between port / Sunseekers site and rest of Lower Hamworthy. Raise (or replace) existing defence walls between Lifting Bridge and Baiter to design standard.</p> <p>Medium Term: Local defence improvements at Holes Bay (west).</p> <p>Long Term: Raise existing defence walls typically by further 0.4m to sustain against sea level rise.</p>

Table 2.1 *PWFRMS Preferred Option*

This business case will seek to implement and deliver the preferred strategic option, updated with the results of more detailed appraisal studies undertaken since the PWFRMS.

34. BCP Council Corporate Strategy, 2019

The BCP Council Corporate Strategy 2015-2019, sets out five key priorities with two most applicable to this project being;

- 1. Sustainable Environment – Leading our communities towards a cleaner, sustainable future that preserves our outstanding environment for generations to come.*
- 2. Dynamic Places – Supporting an innovative, successful economy in a great place to live, learn, work and visit*

35. In July 2019 BCP Council passed a motion to formally declare a 'climate and ecological emergency'. BCP Council are committed to ensuring that sustainability runs through every aspect of the Council's business.

36. In addition, updates on the flood defence scheme will take place on the FCERM partnership website as it progresses:

<https://poolebay.net/project/flood-defences-poole-bridge-to-hunger-hill/>

Appendices

There are no appendices to this report