

Cabinet

6 October 2020

Weymouth Harbour & Esplanade flood and coastal erosion risk management strategy

For Decision

Portfolio Holder: Cllr R Bryan, Highways, Travel and Environment
Cllr T Ferrari, Economic Growth, Assets & Property

Local Councillor(s): Cllr Jon Orrell

Executive Director: J Sellgren, Executive Director of Place

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Report Status: Public

Recommendation: That Cabinet:

1. Agrees the flood and coastal erosion risk management strategy for the next 100 years for Weymouth
2. Authorises officers to develop the business case towards deliverable schemes for inclusion in Dorset Council's future capital programme.
3. Delegated authority to the two relevant portfolio holders, after consultation with the Director for Place, to agree the governance structures to oversee the project.

Reason for Recommendation:

Weymouth floods and is impacted by coastal erosion. With a prediction of an acceleration in sea level rise and more intense weather events as a result of climate change, the problems facing Weymouth will increase significantly.

Without investment in managing this flood and erosion risk, Weymouth faces increasing direct losses through flooded assets and infrastructure and indirect impacts such as a failing property market due to blight and increasing social deprivation.

It is estimated that there are 400 businesses (based upon ONS figures) within the areas that are directly affected by future flood risk. And the council are yet to

develop a permanent solution to the objection in principle that the Environment Agency have to development in the flood zones around Weymouth town centre. Future development could create jobs within Weymouth and previous estimates have suggested this could be over 1000.

Dorset Council as;

- (i) The principal asset owner of harbour and seafront infrastructure,
- (ii) The Local Planning Authority,
- (iii) The defined Lead Local Flood Authority and
- (iv) The Coast Protection Authority;

needs to adopt a coherent plan for the long-term sustainable flood and coastal risk management of Weymouth Harbour and the Esplanade.

1. Executive Summary

The Weymouth Harbour & Esplanade FCRM Strategy document (Appendix 1) sets out the preferred strategic approach; bringing together the findings and recommendations from numerous recent studies undertaken by Dorset Council, and previously Weymouth and Portland Borough Council, and the Environment Agency. It should be noted that this strategy excludes river and surface water flood risk. This strategic approach is to undertake a comprehensive programme of wall replacement and wall raising around both the Harbour and Esplanade frontages. This will both reduce flood risk and replace deteriorating walls, some of which are already at the end of their design life. It is a phased and adaptive approach which provides the opportunity to keep under review a number of factors including rates of climate change, asset deterioration and changes in spatial planning needs and requirements.

The Environment Agency have provided written support to council for the proposed strategic approach (Appendix 2).

2. Financial Implications

The scale of engineering works is significant and will require investment from multiple funding sources in line with Government's Partnership Funding approach. Total investment in excess of £115million in cash cost terms will be required over the next one-hundred years. Through economic appraisal, it can be clearly demonstrated that a robust case can be formed with Present Value Benefits totalling in excess of £750million (PVb). The wider financial benefits to Dorset and the South West Region will be several times greater. Economic benefit alone will return a Benefit Cost Ratio in excess of 14:1.

Cabinet agreement to the recommendations in this report will enable officers to commence work on the preparation of more detailed business cases and costings. Funding for these schemes will then need to be considered as part of the Councils future Capital Programme.

3. Climate implications

Coastal management schemes must account for accelerated sea level rise caused by global warming. Sea level rise is expected to affect high water levels in Weymouth in comparison to the current level over the next 100 years. The target Standard of Protection (SoP) against coastal flooding at Weymouth is 1 in 200 years (0.5% annual probability of exceedance). Over the next 100 years, the 1 in 200-year level rises by 1.3m in the worst case projections.

If a 1 in 200-year flood event were to occur, various technical reports (which include computer flood modelling simulations) have estimated the number of residential and non-residential properties around the harbour and behind The Esplanade to be at risk of flooding. The flood risk could be either, or a combination of, extreme still water level and/or wave overtopping. Extreme still water level refers to an exceptionally large tidal event independent of any waves. In addition, the flood risk impacts from any failure of individual sections of harbour wall have been analysed. **In the present day (2020), this could be as many as 440 properties at flood risk, in turn rising to over 2,000 properties by 2120.**

Within the strategy area, erosion risk is most prevalent to the northern part of the Weymouth seafront area, between the Pier Bandstand and the Greenhill Groyne. The risk would increase if the seawall were to fail as a result of being undermined, particularly during storm events. Once defences have failed and coupled with sea level rise, a period of coastal erosion will occur. **Coastal erosion at predicted rates between 0.5-1.0m/year poses risk to properties, Greenhill Gardens and the B3155 which runs parallel to the shoreline.** The narrowing or loss of the beach would not only increase erosion risk but would also exacerbate flood risk through increased wave overtopping.

4. Other Implications

This strategy will have an impact defending Weymouth from the effects of climate change. It will also have an impact on the economic sustainability of the town centre and the ability for regeneration to take place within Weymouth

5. Risk Assessment

Having considered the risks associated with this decision, the level of risk has been identified as:

Current Risk: HIGH

Residual Risk: LOW

6. Equalities Impact Assessment

Due to the high level nature of this strategy an EQiA is not applicable at this time, however design of specific works that are derived from the strategy will consider the impact and carry out an EQiA.

7. Appendices

Appendix 1 – Weymouth Harbour & Esplanade Flood and Coastal Risk Management Strategy (WSP, June 2020).

Appendix 2 – FCRM Strategy EA Support Letter (EA, July 2020).

8. Background Papers

- Weymouth Bay Coastal Processes Study (Jackson-Hyder, 2015 to 2018).
- Weymouth Model Updates (JBA, August 2016)
- Weymouth Inundation Modelling Study (JBA, February 2019)
- Weymouth Harbour & Esplanade Flood & Coastal Risk Management Strategy Update (WSP, March 2019)
- Masonry Harbour Walls Condition Assessment (JBA, June 2019)
- Sheet Pile Harbour Walls Condition Assessment (JBA, June 2019)
- Weymouth Beach Management Plan (Jacobs, July 2019).
- Weymouth Flood Risk Management Strategy (Royal Haskoning, 2010)
- South Devon & Dorset Shoreline Management Plan (Halcrow, 2011).

9. Adaptive Pathway Approach

- 9.1 Dorset Council commissioned WSP UK to review a number of technical reports produced as part of the Weymouth Bay Coastal Processes Study, previously commissioned by WPBC, in order to produce a 100 year strategy for Weymouth based on current and predicted flood risk.
- 9.2 Based upon these reports and the latest sea level rise predictions WSP recommended an adaptive pathway approach to flood risk in Weymouth. The pathways included phased approaches to wall raising, wall replacements and the possible inclusion of a future tidal barrier.
- 9.3 The implementation of the pathway will ensure that flood and coastal erosion risk is managed whilst ensuring that other wider benefits to Weymouth such as commercial, amenity and recreation can be enhanced. The approach remains flexible and can be adjusted to manage any future change. Full details can be found in Appendix 1.

Phase	Harbour Sea Defence Wall	Esplanade Sea Defence	Harbour Walls General	Costs (including risk)
Phase 1 2020 - 2039	Replace 7 sections of harbour walls and raise 9	Repair Greenhill sea wall and continue beach management activities	Replace sections of Peninsula walls	£47m Capital Works £1m maintenance costs
STRATEGY REVIEW				
Phase 2 2040 - 2059	Replace 9 sections of harbour walls	Consider further beach recharge		£9m capital works

				£1m maintenance
STRATEGY REVIEW				
Phase 3 2060 - 2120	Choice of either a) Further wall raising or b) Tidal Barrier	Replace Pavilion to Brunswick sea wall + promenade works + set back walls	Replace/major repairs to 8 walls in harbour	£59m capital works (wall raising option) £5m maintenance
STRATEGY REVIEW				

10. Cost Assessment and Funding

10.1 The capital costs for each of the interventions to deliver the adaptive pathway were calculated using the rates provided in the Environment Agency's 'Long-Term Costing Tool'. This provides unit costs for FCRM measures based on previously undertaken schemes.

10.2 Maintenance costs have been considered to ensure whole life costs are inclusive of routine repairs and inspections. In line with HM Treasury guidance and FCRM industry best practice, an 'Optimism Bias' uplift of 60% has been added to all costs. A summary of the high-level costing exercise for the 100-year adaptive pathway can be found tabulated below.

Years		Estimated DC contribution	Estimated EA/Defra contribution	Estimated Total cost
Phase 1	2020 - 2039	£7m	£40m	£47m
Phase 2	2040 - 2059	£2m	£7m	£9m
Phase 3	2060 - 2120	£17m	£42m	£59m
TOTAL – without barrier		£26m	£89m	£115m
Phase 1	2020 - 2039	£7m	£40m	£47m
Phase 2	2040 - 2059	£2m	£7m	£9m
Phase 3	2060 - 2120	£43m	£42m	£85m
TOTAL – with barrier		£52m	£89m	£141m

10.3 At the present time, Department for Environment, Food & Rural Affairs (Defra) allocates funding to FCRM projects through the Environment Agency. Flood and coastal erosion resilience partnership funding aims to share the costs between national and local sources of funding. This approach allows any project where benefits are greater than costs to qualify for Flood Defence Grant-in-Aid (FDGiA). It is a condition from Defra that the Government's FDGiA funding settlement will realise a

minimum of 15% 'Partnership Funding' contributions to its overall FCRM capital investment programme.

- 10.4 Dorset Council would be expected to be a significant contributor in the development and delivery of this strategy. For example, the harbour wall component identified under Section 3 has wider benefits for the Council and therefore Dorset Council's contribution should be at least equal or exceed the capital cost of the 'Harbour Walls – General' in addition to the routine maintenance costs that are usually incurred directly. The significant value of tourism and amenity benefit realised locally from harbour and esplanade works would also support the need for investment by Dorset Council or other major beneficences. The Council has recognised the need for flood defence investment and mechanisms are already in place for collecting and contributing to projects such as this. One such example is the Council's Community Infrastructure Levy which collects money as a result of new development
- 10.5 It is intended that the strategy be reviewed at least twelve months prior to the commencement of each future phase of the pathway. In addition, it is anticipated that a light touch 'refresh' of the strategy be undertaken every five years.
- 10.6 Environment Agency (EA) officers have been involved with the delivery of this strategy (& previous reports) from the outset as well as being on the project engagement group with regular progress meetings. The EA have helped steer the development of this strategy and provided a letter to John Sellgren supporting the strategic approach of the council (Appendix 2). It should be noted that the current support provided by the EA does not commit their financial support at his stage and future business cases will need to be developed for submission to the EA approval body in order to help fund any scheme construction.

11. Spatial Planning and Delivery

- 11.1 Following local government re-organisation in April 2019, Dorset Council has started work on preparing a new local plan which will replace those adopted local plans of the predecessor District and Borough Councils.
- 11.2 The Council intends to undertake a consultation on the emerging local plan in autumn/winter 2020, publish a pre-submission draft of the local plan in autumn/winter 2021 and adopt the new local plan in spring 2023. As part of preparations for the new local plan the Council will be undertaking a Level 1 Strategic Flood Risk Assessment (SFRA) that covers the entire Council area and a Level 2 SFRA for Weymouth.
- 11.3 The risks from flooding and coastal erosion around Weymouth Town Centre need to be effectively managed and mitigated in order to secure re-

development of parts of the town, and to encourage regeneration and investment. The policies in the emerging local plan that relate to Weymouth will take account of both the Level 1 and 2 SFRA, in addition to this Harbour and Esplanade FCRM strategy.

- 11.4 The local plan is likely to;
- identify the parts of the town that need to be safeguarded to allow coastal and flood defences to be constructed,
 - require that the design of development adjacent to flood risk and coastal erosion defences should take account of future plans (as outlined in this Strategy) to alter or replace these defences,
 - require that the Council or developers explore the opportunities to improve the quality of the public realm as part of any flood risk or coastal erosion defence works, and;
 - require that the design of coastal and flood defences takes account of Weymouth's heritage assets (including conservation areas, listed buildings and scheduled monuments).
- 11.5 The Council will also be preparing an updated charging schedule for the Community Infrastructure Levy (CIL), and the priorities for spending on infrastructure.

12.0 Next Steps

- 12.1 The next steps in progressing Phase 1 of the pathway (2020-2039) should begin immediately with the forming of appropriate governance and management structures to direct the project. Development and production of an appropriate HM Treasury compliant business case should follow as a priority activity.
- 12.2 Ambition and commitment from all stakeholders is required to ensure that this scheme is progressed. Dorset Council and the Environment Agency need to work together to give full support to the pathway and endorse its progression.

Footnote:

Issues relating to financial, legal, environmental, economic and equalities implications have been considered and any information relevant to the decision is included within the report.