

**COASTAL RISK MANAGEMENT PROGRAMME**

**REPORT OF DIRECTOR OF PLANNING, TRANSPORT AND ENVIRONMENT**

**AGENDA ITEM: 4.2**

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**Reason for this Report**

1. This report has been produced in response to the Audit Committee's request for assurance on the management and mitigation of the corporate Flood and Coastal Erosion Risk Management's Coastal Defence Scheme which incorporates the coastline along Rover Way, beginning at the eastern end of the privately owned Dwr Cymru Welsh Water (DCWW) defences, extending along the coast along Rover Way and up the west bank of the river as far as the railway line. This section includes the Rover Way Frag Tip. The extent continues down the east bank of the river and along the coast around Lamby Way Tip to the location of the recently constructed Natural Resources Wales (NRW) defences.
2. The Audit Committee's Terms of Reference sets out its responsibility to monitor:
  - a. The effective development and operation of risk management in the Council;
  - b. Progress in addressing risk-related issues reported to the committee.

**Risk Identification**

3. In Q3 2017/18 coastal erosion became a corporate risk. At this point it was separated from corporate Climate Change and Energy Security risk and included as an individual risk area on the Corporate Risk Register to reflect the immediate urgency of the coastal flood and erosion risk, which very different to the mid-long term climate change risk.
4. The study area is currently defended from coastal erosion and flood risk by a combination of defence types, including rock gabions, earth embankments and sheet pile walls.
5. Coastal Defence assessments undertaken by Mott MacDonald (2009) and Atkins (2013) identified the coastal assets in poor condition. Both reports identified the need for detailed assessment and design of defences to be undertaken.

- The completion of the Cardiff's Flood and Coastal Erosion Risk Management Outline Business Case (2016) undertook a formal assessment of the existing defences which concluded they are in a very poor condition having being severely eroded with many sections no longer in place. It was also concluded that at the time of the report, there was no monitoring or maintenance of the defences by Cardiff Council.

## Risk Assessment and Evaluation

- The OBC identified that if no works are undertaken to maintain or improve the existing coastal defences, there will be significant erosion and flood risk across the area concerned, which will increase over time as assets continue to degrade and sea levels rise with predicted sea level rise.
- The OBC clearly identifies the need to do improve the coastal defences within the project area.
- The Do-Nothing scenario for the 0.5% Annual Exceedance Potential (AEP) event, identifies 249 residential properties and 3 non-residential properties are at risk of flooding, increasing to 1212 residential and 209 non-residential properties by 2117 with sea level rise.
- The OBC identified Sections of the coast that have similar geomorphological characteristics, presented in Figure 1.

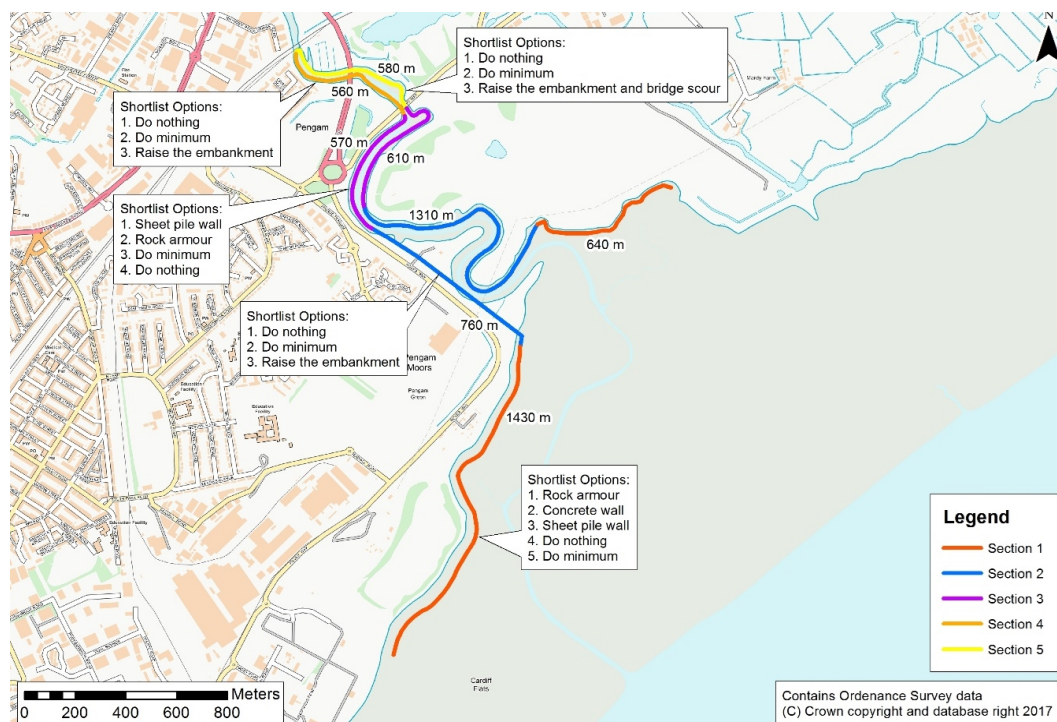


Figure 1: Plan detailing Geomorphological Sections and shortlisted options

## Risk Response

- The OBC undertook a cost benefit assessment of shortlist of flood and coastal erosion mitigation options for the Sections identified in paragraph 10. Each option contains a range of solutions due to the variable coast line

features and has been designed to the 0.5% AEP standard of protection in 100 years time with an allowance for climate change. Based on the appropriate options and level of risk, the preferred economic and environmental option consists of:

- Rock revetment along the coast to manage erosion and wave overtopping (Section 1)
  - Sheet piling along Lamby Way Roundabout (Section 3)
  - Maintain earth embankments elsewhere and raise low points in earth embankments where required to reduce flood risk (Sections 2, 4 and 5)
  - Rock scour protection added to Lamby Way Bridge.
12. The improve scenario has been designed to the 0.5% AEP standard of protection in 100 years time with an allowance for climate change. The proposed modelled defences prevent most flooding in the 0.5% AEP scenario and will reduce flood risk to 1,116 residential and 72 non-residential properties over 100 years, as well as preventing erosion of landfill material, key road infrastructure, and the Rover Way Travellers Site. There is some residual risk posed to the Rumney/Trowbridge area but it is anticipated that the development will have defences incorporated within them. Further assessment of this area will be considered during the detailed design phase.
13. The OBC was presented to cabinet in on the 15<sup>th</sup> March 2018 resolving that:
- The detailed design and construction of the coastal defences valued at £11M be procured. The funding to be provided on an apportionment of 75% funded by Welsh Government and 25% by Cardiff Council.
  - The 25% funding required to deliver the coastal defences be committed in line with the Welsh Government Coastal Risk Management Programme.
  - A reassessment of the scheme be undertaken following the completion of the detailed design to confirm financial implications of construction and viability.

A copy of the cabinet report is presented in Appendix A.

14. The Coastal Risk Management Programme was scrutinised on the 3<sup>th</sup> march 2018, giving members the opportunity to comment on the scheme and its proposals. The committee were in support of the improvement works.
15. Welsh Government have grant funded the development of an outline business case as indicated in this report. This has indicated indicative costs for design (£1 million) and construction (£10 million) totalling approximately £11 million (inclusive of VAT). The Coastal Risk

Management Programme assumes that the WG would support 75% of design and construction costs (£8.25 million) whilst the Council will have to find the balance of 25% of the estimated cost (£2.75 million). Whilst Council's highlighted the affordability issues of such an approach, WG are unlikely to change the initial approach.

16. These infrastructure schemes can be subject to significant variations in costs unless risks are properly identified and mitigated. The next phase will be detailed design and costing which the directorate will use to assess risks and costs in construction prior to any procurement exercise. Accordingly any commitment towards completing construction works will need to be subject to final affordability of the expected construction costs and impact on the Council.
17. Subject to the approval of WG funding, the Council's Capital Programme for 2018/19 to approved by Council in February 2018 includes a capital allocation of £2.220 million with an additional £0.5 million assumed in the Lamby Way landfill provision set up for the aftercare of the site.
18. The costs associated with the design, ECI and construction phases have been estimated and include contingency and inflation allowance.  
The total value for Coastal Risk Management Plan Approval is approximately **£11,000,000;**  
The total value of the Welsh Government cost apportionment would be approximately **£8,250,000;**  
The total value of the CCC cost apportionment would be approximately **£2,750,000.**
19. The tender process for the detailed design and production of the Full Business Case has gone out to tender via the NPS Framework. It is anticipated that a successful tenderer will be instructed in January 2019.

## **Issues**

20. If the Coastal Protection works are not implemented the coastline will continue to erode presenting significant risk to the area.
21. Delivery of the project will require subsequent procurement exercises being undertaken for both the Design and Construction Stages, with the latter being substantially larger. The consultancy services for the Outline Business Case were procured under the Construction Consultancy Framework (ref. NPS-PS-0027-15) managed by the National Project Service (NPS), using the relevant 'Water Management' Lot under the framework. It is envisaged that the detailed design stage of the project would be procured using a similar arrangement. The construction procurement exercise will be completed following detailed design.
22. The Wales Coast Path and cycleway will be included within any design and construction for the Coastal Defences and the Council will work with

Welsh Government to ensure there are no concerns for future phases of the Eastern Bay Link. Multiple benefits are a key consideration in the Welsh Government Coastal Risk Management Programme. Any additional requirements and costs associated with multiple benefits will be assessed following detailed design.

### **Legal Implications**

23. The statutory functions of the Audit Committee include the duty to review, scrutinise and issue reports and recommendations on the appropriateness of the authority's risk management, internal control and corporate governance arrangements (pursuant to Part 6 Chapter 2 of the Local Government (Wales) Measure 2011). In discharging its functions, the Audit Committee must have regard to all relevant guidance, in particular the CIPFA guidance for Audit Committees.

### **Financial Implications**

24. The financial implications (if any) arising from this report have been contained within the body of the report.

## **RECOMMENDATIONS**

25. The recommended decision is that the committee notes and considers the content of the report.

**Andrew Gregory**  
**Director City Operations**

**22 January 2019**

### **APPENDICES**

Appendix A Coastal Erosion Risk Management Cabinet Report  
Appendix B Audit Committee Presentation