

# Causeway Coast & Glens Borough Council

To: Environmental Services Committee

1<sup>st</sup> December 2015

## REMEDIAL WORKS TO PORTBALLINTRAE HARBOUR

### For Decision

#### 1.0 Reporting to Committee

<b>Linkage to Corporate Plan</b>	
<b>Strategic Priority</b>	Protecting and Enhancing Our Environments and Assets
<b>Objective</b>	Protect, enhance and promote opportunities for greater enjoyment of our natural environment.
<b>Lead Officer</b>	John Richardson
<b>Cost: (If applicable)</b>	Estimated at £340,000

#### 1.1 Background

Deterioration of Portballintrae harbour has been identified in the area of the outer pier which comprises sheet pile wall construction – please refer to Appendix I identifying location and photograph of deteriorated structure. On this basis an extensive dive survey was conducted of the existing sheet piling structure to ascertain the extent of deterioration.

The condition report has identified the extent and severity of the defects and confirms severe corrosion of the sheet piled wall along its entire length. Many of the sheet piles have large holes which have led to the loss of fill material under the harbour deck slabs due to scouring. In addition, the sheet piles have lost a substantial proportion of their original thickness which has been measured as low as 2mm in some areas.

The result of these defects is that the strength of the harbour structure is compromised. Unless remedial action is taken further deterioration is inevitable and it is likely that over time the harbour deck slab will subside due to the lack of supporting fill material underneath.

There is also a risk that in areas where the sheet piles are substantially weakened there could be structural failure resulting in further damage to the harbour.

As part of the condition survey a number of possible remedial schemes with preliminary budget cost estimates have been identified. These are summarised as follows,

#### 1.2 Options

##### **Option 1 – Patch and Repair (Short Term Measure – ruled out)**

This option is suitable for situations where the existing piles are sufficiently robust to be repaired. While repair might be possible for some of the sheet piles it would not be feasible for a substantial proportion. The cost of such work would be relatively high and would only offer a limited design life. For these reasons this option is discounted from further consideration.

##### **Option 2 – Replacement of Sheet Piled Wall and Concrete Decking**

The sheet pile wall and its reinforced concrete capping beam are key elements of the Portballintrae Harbour structure. These structural elements would require full replacement over their entire length.

It is also likely that some of the backfill material and reinforced concrete slab decking would require replacement. **Estimated Cost - £340,000**

### **Option 3 - Concrete facing to Existing Sheet Piled Wall**

This option would involve leaving the existing sheet piles in place while constructing a new reinforced concrete facing wall to the front of the harbour. The construction work would be difficult and require significant temporary works to allow construction of suitable foundations for the concrete facing wall at seabed level. Replacement of the backfill material and reinforced concrete slab decking would be similar to option 3. **Estimated Cost - £852,600.**

## **1.3 Recommendation**

It is recommended the Environmental Services Committee approve the progression of this project to Stage 2 of the Capital Programme Management System (Procurement of a contractor), based on Option 2, Replacement of Sheet Piled Wall and Concrete Decking with an estimated value of £340,000.