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<b>PART B:</b>	<b>RECOMMENDATIONS TO COUNCIL</b>
<b>REPORT TO:</b>	<b>POLICY AND RESOURCES COMMITTEE</b>
<b>DATE:</b>	<b>24 JUNE 2010</b>
<b>REPORT OF THE:</b>	<b>CORPORATE DIRECTOR (s151) PAUL CRESSWELL</b>
<b>TITLE OF REPORT:</b>	<b>PICKERING FLOOD STORAGE PROPOSALS</b>
<b>WARDS AFFECTED:</b>	<b>PICKERING EAST, PICKERING WEST</b>

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## **EXECUTIVE SUMMARY**

### **1.0 PURPOSE OF REPORT**

- 1.1 To consider proposals from the Environment Agency (EA) for a capital scheme to reduce the incidence and impact of flooding to Pickering.

### **2.0 RECOMMENDATIONS**

- 2.1 That Council is recommended to approve:
- (i) support for Pickering flood storage proposals for two bunds and a cross bund incorporating a 15 m<sup>3</sup>/s culvert in the Pickering Beck catchment area; and
  - (ii) a maximum contribution of £800,000, to be included in the Councils Capital Programme for 2010/2011.

### **3.0 REASON FOR RECOMMENDATIONS**

- 3.1 The proposals provide a deliverable solution to help mitigate a long-standing issue for which members have previously committed Council funds.

### **4.0 SIGNIFICANT RISKS**

- 4.1 The significant risks to the Council are related to cost control for any scheme, timeliness, scalability and reputation. Further details, together with mitigation, are within the attached Risk Matrix (annex A).

## **REPORT**

### **5.0 BACKGROUND AND INTRODUCTION**

- 5.1 The Council included a commitment towards a Pickering flood defence scheme in its capital programme up to the setting of the budget for 2010/2011. In setting the 2010/2011 budget only schemes which were deliverable and had a fully costed and

evaluated scheme remained in the programme and as such in the absence of such a scheme it was removed from the Capital Programme, however shown under 'Potential Schemes'.

- 5.2 The original provision was £1m, this was reduced to £972k in 2009/2010 when £28k was contributed to the Vale of Pickering Channel Management Pilot.

## **6.0 POLICY CONTEXT**

- 6.1 The proposals within this report are consistent with the Council Plan.

## **7.0 CONSULTATION**

- 7.1 A member briefing on the proposals was held on the 15 June 2010. Consultation has been undertaken with the landowners and statutory consultees – including North Yorkshire Moors Railway, North Yorkshire Moors National Park, Natural England, Forestry Commission, Forest Research, English heritage and Pickering Town Council. A public consultation event was held in September 2009 and members of Pickering Flood Defence Group, Pickering Civic Society and Ryedale Flood Research Group are included on the project delivery group.

## **8.0 REPORT DETAILS**

- 8.1 There is a significant history of flooding at Pickering dating back to the 1930's, most recently:

- January 2008 – 1.21m at Ropery Bridge
- June 2007 – 1.98m (1 in 93 year flood event)
- August 2002 – 1.7m
- November 2000 – 1.53m

- 8.2 Between 2001 and 2003 a previous flood defence scheme was progressed. This included a planning application in August 2001, however following significant consultation a number of objections were received from private and public sector the scheme was withdrawn, the revised scheme with the preferred option (1 in 75 year protection) did not achieve sufficient priority to attract the necessary external funding.

- 8.3 This report presents a further opportunity to consider a scheme to offer some increased protection to Pickering from flooding. Members should be aware that none of the proposals in this report would prevent the impact of the flooding which occurred in 2007.

- 8.4 Members may be aware that there is already a project in the catchment areas above both Pickering and Sinnington to improve land management. This work is ongoing and does not involve a financial contribution from the Council. It involves:

- The planting of 50 ha of new woodland in the Pickering Beck catchment
- The planting of 30 ha of new woodland and River Severn catchment
- Restoration of 100 large woody debris dams in the Pickering Beck catchment
- Restoration of 50 large woody debris dams in the River Severn catchment
- Review Forest Design Plan in Cropton Forest to slow down peak flows
- Develop farm soil plans and implement local measures to reduce rapid run-off

- 8.5 The work identified above will assist in slowing the flow of water to Pickering during periods of heavy rainfall, however it may take up to 10 years to achieve maximum benefit.

- 8.6 The new proposals for Pickering involve a Bunded storage option. This involves the creation of strategically placed bunds which create upstream water storage, which is then released at a controlled rate through an appropriately sized culvert. During low level flood events, the water would then be stored upstream of Pickering and depending on the size of the bunds and culvert may prevent flooding to certain properties.
- 8.7 The proposals are the result of an initial suggestion by the Ryedale Flood Research Group, which includes representative from Oxford University, Durham University, the University of East Anglia and members of the public from Pickering.
- 8.8 This proposal was further advanced by the EA and detailed modelling of potential sites. The first part of the work was to establish the volume of water which needed to be stored. Following the 'near miss' in December 2009 the 'safe flow' has been established as 12 m<sup>3</sup>/s, this is the flow that can pass through Pickering without causing flooding to property. Above this level flooding starts. Prior to this event it was thought that the 'safe flow' was 21 m<sup>3</sup>/s.
- 8.9 As part of this development detailed discussions have taken place with the North Yorkshire Moors Railway (NYMR) as the river runs close to the railway in many areas, and any proposals for water storage would need to consider any impact on the railway and its foundations.
- 8.10 7 bunds have been considered and following analysis of the impact on the NYMR and the relative volume of storage possible, only 3 were considered suitable and required further analysis.
- 8.11 There are two options for bunds:
- Option A** - 3 separate bunds (Annex B, page 1)  
**Option B** - 2 bunds with a cross bund (Annex B, page 2)
- 8.12 The size of the culvert chosen (12 or 15 m<sup>3</sup>/s) also impacts on the protection offered to the Town.

**Bund Option A**

Culvert Flow	12 m <sup>3</sup> /s	15 m <sup>3</sup> /s
Volume of Water Stored	105,000 m <sup>3</sup>	105,000 m <sup>3</sup>
Flow in Pickering m <sup>3</sup> /s	17 down to 12	20 down to 15
Level of Protection against	1 in 15 year event	1 in 25 year event

**Bund Option B**

Culvert Flow	12 m <sup>3</sup> /s	15 m <sup>3</sup> /s
Volume of Water Stored	85,000 m <sup>3</sup>	85,000 m <sup>3</sup>
Flow in Pickering m <sup>3</sup> /s	16 down to 12	20 down to 15
Level of Protection against	1 in 15 year event	1 in 25 year event

- 8.13 1 in 15 year protection is considered a low level of protection. Such protection would not have prevented the 2000 floods for example. The 1 in 25 year protection would have prevented significant damage to a number of properties in 2000, however neither option would have prevented flooding for the Beck Isle properties.
- 8.14 Should maximum protection, that is 1 in 25 year event, be the aim both options A and

B, offer the same level of protection, however option B is £250,000 lower cost.

- 8.15 The modelling has been stress tested and quality assured within the EA.
- 8.16 The project does not qualify for significant funding through the EA Grant In Aid process. The EA has a maximum contribution of £150,000 available to put towards the scheme. It would be delivered by them through their in house workforce and any responsibility for overspend in the works would rest with the EA. Subject to confirmation of funding it is possible that the bunds could be built in Autumn 2010. The EA has confirmed that they would take on the maintenance for the bunds, including responsibilities under the Reservoirs Act. Aesthetically the bunds would be less than 2 metres in height, of clay core and grassed. When not flooded, the land would be usable as farmland.
- 8.17 Undertaking either of the options does not preclude further improvement works being undertaken in the future should funding become available.
- 8.18 Other potential issues around Pickering flooding have been investigated by the EA, including alteration to weirs and sluices, removal/alteration of Ropery Bridge, small upstream bunds and improved maintenance. Further tree maintenance is to be undertaken, however it has been identified the other three proposals offer small if any benefit to Pickering flooding at significant cost.
- 8.19 Given the knowledge of the 'safe flow' (12 m<sup>3</sup>/s) obtained in December 2009, providing protection to all recent flood events in Pickering, including 2007, is unlikely to be achieved without a scheme costing several million pounds, the 2003 scheme was in excess of £6m. Funding for such a scheme within the current grant provisions is highly unlikely to be forthcoming, more particularly with the predicted cuts to public sector revenue and capital financing in forthcoming years.
- 8.20 Members therefore face a difficult decision should they want to commit funding to a scheme, in that protection for recent floods (2007 excluded) is possible for a large number of properties but not all. Protection for all can only be achieved for a 1 in 15 year flood event frequency.
- 8.21 Should members wish officers can investigate whether the Council could use its capital funds to establish a 'grant' scheme for property owners affected by floods across the whole District to fund flood protection to their property. Other Councils have operated such schemes, often involving match funding of the property owners financial contribution.

## **9.0 IMPLICATIONS**

- 9.1 The following implications have been identified:
- a) Financial  
The required contribution can be met from unallocated capital resources. There is no revenue impact on the Council.
  - b) Legal  
Delivery of the scheme and necessary legal approvals would rest with the EA, a formal legal contract for the Council's contribution would be required.
  - c) Other  
The Environment implications will be considered as part of the detailed design and an environmental report will be produced to consider any associated impacts

and required mitigation.

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**Background Papers:**

None.

**Background Papers are available for inspection at:**

N/a.