Navigation Committee 10 December 2015 Agenda Item No 12

Broadland Flood Alleviation Project: Planning Application for Piling Removal Works and the Installation of Erosion Protection in Compartment 37 (Upton Dyke)

Report by Senior Waterways and Recreation Officer

Summary: This report provides members with a summary of Broadland Environmental Services Ltd (BESLs) planning application proposals for the removal of piling and installation of erosion protection in Upton Dyke which is situated in Compartment 37 on the true right bank of the River Bure.

1 Background

- 1.1 Earthbank flood defence works were completed in Compartment 37 on the true right bank of the River Bure between Acle Bridge and Upton Dyke in 2010. In Upton Dyke the works carried out amounted to the construction of a new rollback floodbank some 8m back from the piled edge of the boat dyke.
- 1.2 Monitoring carried out by BESL has shown that the rollback floodbanks in Compartment 37 have now established and are providing main line flood defence for the compartment. As in other compartments, once the new banks have established, consideration is given as to whether it would be appropriate to remove the piling that provided the erosion protection for the old floodbanks. The removal of piling in the Broadland Flood Alleviation (BFAP) project area requires the granting of a further planning application by the Broads Authority and BESL has now submitted an application for the removal of the piling in Upton Dyke. No other piling is identified for removal in the planning application for Compartment 37 which is the subject of this report.

2 BESL's Planning Application for Piling Removal in Compartment 37 (Upton Dyke)

- 2.1 As mentioned in paragraph 1.2 above the only piling identified for removal in the planning application is in Upton Dyke. The location of these works and the detailed cross sections of the proposals are shown on the plans at Appendix 1.
- 2.2 BESL has surveyed the piling in the dyke and assessed that it is in poor condition and likely to deteriorate further to the extent that it would become a potential hazard to navigation. The Broads Authority has also recently surveyed the piling and reached the same conclusions.
- 2.3 BESL is proposing to remove approximately 584m of piling on the right hand bank of the dyke and reprofile the bank to encourage reed growth. The normal approach taken to dealing with the removal of piling is to extract the

piles from the river bed and to reprofile the bank from the toe of the pile line. In this case, however, BESL is proposing to drive the piles into the bed of the dyke to a depth below the dredge specification for the dyke so that they do not create a navigation hazard. Should the piles fail to drive successfully they will be extracted from the bed in line with BESLs usual methodology for piling removal. This approach was adopted successfully in Compartment 22 on the River Chet and does give greater stability for the reprofiled bank than the usual method of extracting the piles. The depth the piles would be driven to would be agreed with officers and a sonar survey undertaken after the works to ensure that no remnant piles or other hazards remain on the bed of the dyke.

2.4 In this application BESL is also proposing to install erosion protection in the form of a coir (coconut fibre) blanket along a 239m length of the bank after it has been reprofiled. This design is shown in detail on the plans at Appendix 1.

3 Current Use of Upton Dyke

- 3.1 Upton Dyke is a narrow boat dyke leading to a parish staithe at the head of the dyke where there is also a slipway and public car park. The Eastwood Whelpton Boatyard is also situated at the head of the dyke and parish moorings are located on the opposite side of the dyke to the bank which BESL is proposing to reprofile.
- 3.2 The width of the Dyke varies between 9 and 12 metres along most of its length widening out to approximately 20 metres at its head. This is quite narrow for navigation and there are a significant number of boats moored on the parish mooring side which restrict the width and other boat movements originating from the Eastwood Whelpton Yard and slipway.

4 Summary of Officers' Comments

- 4.1 Officers have some concerns about BESL's proposals for the Dyke particularly with regard to bank stability and erosion rates. As mentioned Upton Dyke is a narrow dyke and the existence of a pile line gives boaters a defined edge as a visual reference when navigating in the dyke. If the piling is removed there is a risk of inexperienced boaters grounding or hitting the reprofiled bank as there is such a confined width and this gives rise to some concerns about the stability of the bank and the likelihood of vegetation establishing to define the edge of the dyke. Also the removal of the piled edge is likely to have an effect on sedimentation rates in the dyke.
- 4.2 BESL has responded to these concerns in the application by stating that, although narrow, Upton Dyke is relatively straight and therefore it is highly unlikely that erosion would be caused by shear stresses. Further, it argues that as boats are effectively restricted from going fast in the dyke because of its width and coir matting erosion protection is proposed for the narrowest section, there is little risk of erosion from flow or boat wash. Additionally BESL has emphasised that the approach outlined in the planning application

is the usual approach it adopts with regard to piling in front of rollback floodbanks and the methodology set out in the application has been used successfully elsewhere in the project area. BESL has also confirmed it will adopt an erosion monitoring protocol that has been previously agreed with the Broads Authority which includes a commitment to carry out dredging or contribute to the Broads Authority's costs should erosion take place beyond defined trigger levels.

- 4.3 While taking note of these comments officers still consider that in the long term piling removal will result in greater sedimentation rates in the dyke and consequently the need for more frequent dredging. Moreover, the installation of coir matting is in itself a cause for concern. If boats collide with the matting there is a risk that it will become unpinned and unravel as coir matting is not as robust as other forms of erosion protection. This would then place the reprofiled edge at risk. The preferred option would therefore be for the dyke to remain piled on both sides.
- 4.4 However, in deciding how to respond to the planning application consultation consideration must be given to the fact that the piling is deteriorating in condition and will eventually all have to be replaced or removed completely to prevent navigation obstructions and hazards occurring. The piling in question is partly owned by the Environment Agency and partly owned by a private landowner neither of whom is willing to maintain the piling. The Environment Agency considers that there is no flood defence benefit or wider public benefit for maintaining the piling and feels that as the costs of repiling would be excessive there can be no justification for using public money to maintain a piled edge to the dyke. In these circumstances it is extremely unlikely that any other funding will be available for maintaining the piling in Upton Dyke.

5 Conclusions

- 5.1 Given these concerns officers would like the advice of the Committee on how to respond to the planning application consultation. Officers feel that piling removal in Upton Dyke is a different situation to piling removal on the edge of a relatively wide river. As mentioned previously in this report the majority of the dyke is narrow and in our view this presents an increased risk of boats grounding or impacting the natural edge that would be created after the piling is removed. This could result in erosion from the bank and the deposition of that material in the bed of the dyke and in turn the need for dredging to maintain access to the Parish Staithe and boatyard.
- 5.2 Members' comments are therefore welcomed as to whether this risk could be mitigated by requiring further conditions to be placed on any planning permission granted for the piling removal. For example a requirement for the submission of an agreed mitigation plan to deal with any problems with the erosion protection, failure of the reprofiled edge, poor vegetation establishment and dredging.

| Background papers: | Nil |
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| Author: Date of report: | Adrian Clarke 25 November 2015 |
| Broads Plan Objectives: | CC3.4 |
| Appendices: | APPENDIX 1 – Compartment 37 detailed maps. |

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