

**Construction, Maintenance and Environment Work Programme  
Progress Update**

Report by Head of Construction, Maintenance and Environment

**Summary:** This report sets out the progress made in the delivery of the 2014/15 Construction, Maintenance and Environment Section work programme.

Members' questions regarding Construction, Maintenance or Environmental works programme are welcomed.

**1 Construction Programme Update 2014/15**

- 1.1 The progress of the Construction and Maintenance work programme is described in this report. As previously reported verbally to members, a further detailed breakdown shows that up to the end of September 2014, 19,870 of sediment has been removed from the Rivers and Broads, and the details of quantities and costs achieved so far are set out in Appendix 1. This represents 40% of the programmed target of at least 50,000m<sup>3</sup>.
- 1.2 The Mid Bure continues to be a high priority for the Authority to dredge and good efforts are continuing to remove accumulated sediment from this reach. The rond at Thurne mouth has been filled to the required level so disposal has moved to a set-back area at Horning Hall. The Bure dredging is due to be completed at the end of October with the crew relocating to the River Ant, to dredge between How Hill and Barton Broad. The programme allows for more dredging on the River Bure, during the winter months, using the mud pump to dredge up to Coltishall Lock and onwards through the bends between Coltishall and Belaugh.
- 1.3 The second dredging crew are located on the Waveney, dredging around the bends at Burgh St Peter and disposing of arising into set-back areas at Black Mill. This project is nearing completion and then the crew will be relocating to Haddiscoe Cut at the beginning of November.
- 1.4 Since the last report Operation Technicians have also been busy refreshing their qualifications and updating skills with plant and equipment. Training courses have been conducted on Towing and Pushing (large dredging barges and loaded wherries), Telescopic Handler and Large Vessels training. Keeping Operatives skills and knowledge updated is important for river safety and very much needed as the rivers and broads remain a popular visitor location.

## **2 Maintenance Programme Update 2014/15**

- 2.1 Work has been completed on the new canoe access site at Carey's Meadow, with a bespoke canoe launching/ mooring area, improved access area and fencing to prevent grazing cattle using the canoe area. We also improved the cattle watering facility by installing a new timber section which stops cattle knocking down the bank when drinking. Site materials and equipment are being removed and the Maintenance Crew are relocating to Potter Heigham to start works at Bridge Green. This is a Project Development Group scheme to improve access and use of this popular riverside location and will include footway improvements, landscaping and seating facilities.
- 2.2 Maintenance crews are busy carrying out fen work whilst low water levels allow access; the mild weather has assisted with this work. Hall Fen is having scrub growth cleared and the banks mown, the same is happening at Mill Marsh. These conservation tasks will continue into October and if water levels allow into early November.
- 2.3 The continued mild weather has meant that grass growth on the network of paths we maintain has been vigorous and we are now beginning our third cut of the season. The 30km of rural footways will be mown using a combination of Operation Technicians and Ranger time to ensure we complete the cut during October.

## **3 Environment Team Programme Update 2014/15**

- 3.1 An 'in-principle' agreement has been developed with the landowner of arable land near Coltishall Lock; this is the location where we would like to deposit arising from the planned mudpumping of the river Bure. Final project planning and the restoration of the arable land are still to be agreed, but we are hoping for a signed agreement by the end of October.
- 3.2 Additional planting of reed and installation of erosion protection mats has been taking place at Duck Island; this is important work to protect the already established reed from effects of wind and tides over the winter period. As members will recall the aesthetics of the island and the growth of reed and sedge are important planning conditions and part of the overall 'success criteria'
- 3.3 Environment Officers have been working hard to obtain agreements for tree clearance work to continue on the south bank of the river Bure at Ranworth Dam. Broadsword volunteers, supported by Operation Technicians, have been making important inroads to reducing the tree and scrub growth at this location. Agreements with Norfolk Wildlife Trust have been reached for access and the removal of trees to further reduce the wind shadow at this location.

## **4 Fitters**

- 4.1 Motor Launch Ant has been lifted out of the water and is in the Griffin Lane workshop being refitted and serviced. The timber work will be rubbed down

and re-varnished, the engine is overhauled, the electrics are checked and the running gear is removed, serviced and reinstalled. The external refit contract is now with Cox's Boatyard at Barton Turf and the first Motor launch (ML Chet) will be received by them in November. To reduce costs four launches will be refitted by Broads Authority Fitters and four will be carried by Cox's Boatyard.

- 4.2 RB22/66 is undergoing a major refit as the old engine was beyond service or repair, so a spare, reconditioned engine is being fitted. This is a major project as the engine weighs 2.5 tonnes and the engine bay represents a challengingly small space to place it.
- 4.3 The old outboard engine on the Broads Authority emergency response Rib has been causing problems. When investigated it appears that the engine was better designed for high speeds 90% of the time and slower speeds for 10% of the time. Operational use required a reversal of these running times, so a new engine has been sourced, with a great deal being arranged and the old, unreliable engine traded-in. This will greatly improve the reliability of the Rib and reduce Fitters repairs times.
- 4.4 The Mud pump (Brian) is being made ready for the forthcoming pumping project on the Bure near Coltishall Locks. The engine requires a complete rewiring and the pump and engine need a full service and overhaul. This will be complete in readiness for the project start later this winter.
- 4.5 The new wherry has been named after a competition was held amongst the Construction, Maintenance and Environment teams. The chosen name is 'Gleaner', which was a historic sailing wherry plying its trade up and down the river Yare carrying sugar beet and coal. The name seemed apt for our new steel hulled vessel which is being fabricated in Ireland. Progress is going well with the new vessel due to arrive in late December.

## **5 Pre-planning application consultation for a dredging re-use scheme in the River Bure between Coltishall and Wroxham**

- 5.1 Prior to submitting a full planning application for a small scale dredging re-use scheme, officers are seeking early views and comments from the Navigation Committee. The proposal aims to capitalise on an opportunity to re-use dredged sediment in the upper navigable reaches of the River Bure, where options for other forms of sediment re-use are limited. At the same time, the scheme will also reverse the negative impacts of bank erosion and habitat loss.
- 5.2 The section of river upstream of Wroxham has been identified in the Sediment Management Strategy prioritisation process as having several areas of shallow margins and bends that significantly fail the Waterways Specification. 3,000 m<sup>3</sup> have been identified for removal and re-use in this area. Three short sections of river bank have been identified and in-principle agreements gained with local landowners for constructive re-use of this sediment. See Appendix 2 for locations and photographs of the current bank conditions.

- 5.3 The works are planned to be a relatively simple re-instatement of the past river edge, with retained back-filled sediment, then being actively planted to restore a natural looking and functioning river bank. The retaining system will be comprised of NicoSpan (a geotextile erosion protection product) proposed for the two upstream locations, and coir rolls, in the shallower downstream location. Both materials are supported by rows of wooden posts driven into the river margins, with dredged sediment placed behind, to restore the original riverbank line.

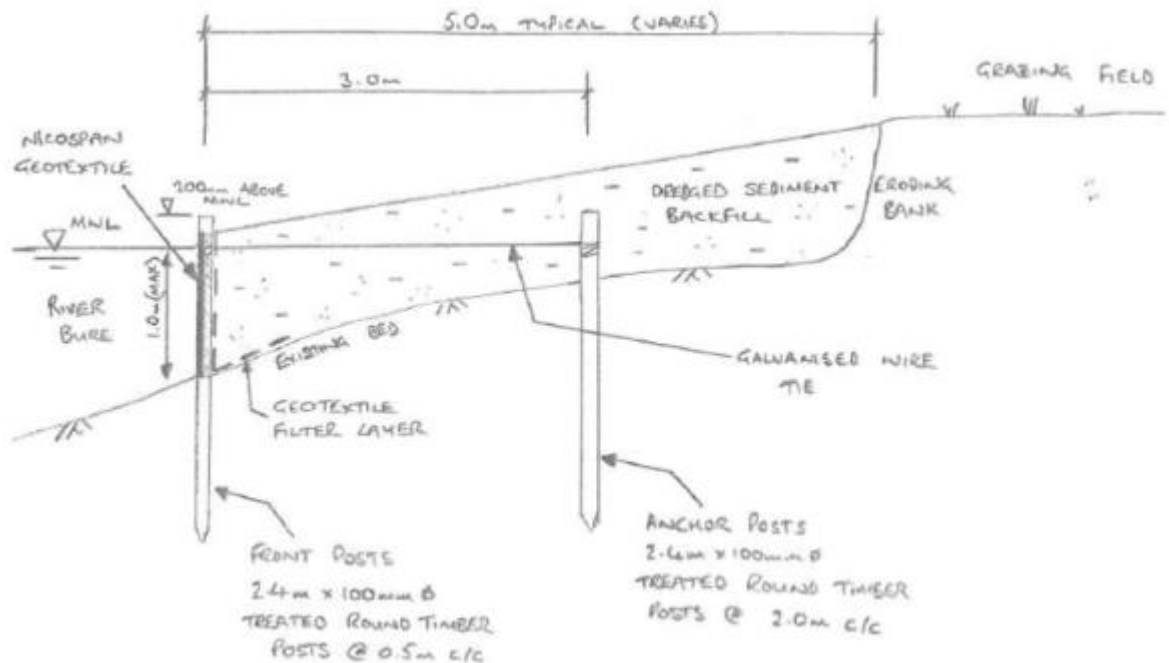


Figure 1 – Typical construction cross section with NicoSpan and backfilled sediment

- 5.4 The maximum depth of the retaining structures under water (at mean low water) will be 100 cm, though more typically 50-60 cm. The aim is to provide a low profile, protective toe to the bank edge that will allow plant colonisation. Long term plant colonisation and viability is key to the sustainability of this soft-engineering approach. Two local species will be used throughout, unbranched bur-reed and pond sedge. The former has a vigorous root system that helps bind and stabilise the sediment from erosion. The latter is shade tolerant and has a dense growth structure that absorbs wave and water energy at the river edge. Whilst these two species are not as palatable to geese as common reed, plastic mesh “goose-guard” will need to be installed around the structure to allow vigorous plant colonisation and prevent damage by geese as a temporary measure.
- 5.5 The extension of the restored river bank into the river channel also aims to be as minimal as possible. The shallow eroded margins are already a hazard to navigation, so prevention of further erosion and ability to re-use dredged sediment sourced from nearby, are seen as long term benefits from this proposal.

5.6 Member's comments on this proposed scheme are welcomed.

## **6 Turn Tide Jetty Update**

6.1 The Tender Documents for Turn Tide jetty have been issued to contractors on our Approved Piling list. Canham's (the Design Consultants) design is for a reduced length jetty, which follows the advice from JBA's Hydromorphological survey carried out 18 months ago. The contractors on the approved list had previously been notified about this scheme and initial conversations showed a great deal of interest. The successful contractor would be expected to start at the beginning of the New Year.

Background papers: Nil

Author: Rob Rogers  
Date of report: 6 October 2014

Broads Plan ref: NA1.1

Appendices: APPENDIX 1 –Dredging Programme 2014/15  
APPENDIX 2 – Upper Bure bank enhancements – site overview map

# APPENDIX 1

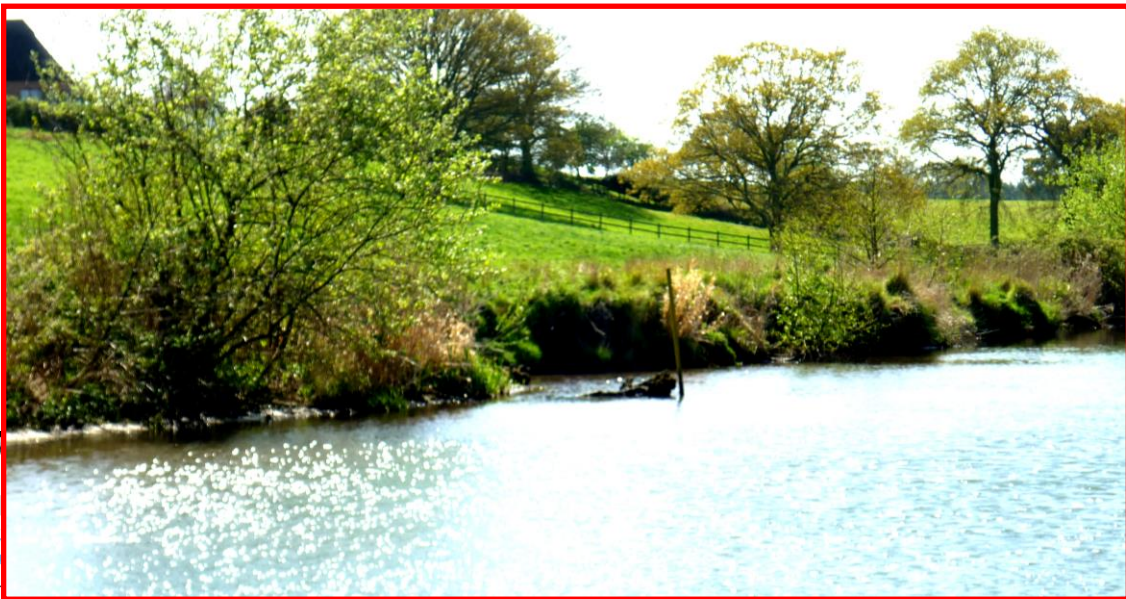
## Dredging Progress 2014/15 (April 2014 to end September 2014)

Project Title	Project Element	Active dredging weeks Completed (Apr-Sept)/Planned	Volume Removed m <sup>3</sup>		Annual project cost	Actual project cost <sup>1</sup> (Apr-Sept)
			Planned	Actual	Planned	Actual
<b>Mid Bure</b>	Thurne Mouth to Horning Hall	18/28	19,000	10,720	£165,000	£113,470
<i>Arisings along rond of River Thurne. Included 380 m<sup>3</sup> dredged from River Thurne</i>						
<b>Waveney</b>	Burgh St Peter bends	15/16	12,000	9,150	£112,500	£82,470
<i>Arisings to setback area at Black Mill on the lower Waveney</i>						
<b>Haddiscoe Cut</b>	Reedham entrance	0/4	2,000	0	£22,700	£800
<i>Arisings to setback area upstream of the swing bridge</i>						
<b>River Ant</b>	How Hill to Barton Broad	0/12	6,000	0	£99,500	£0
<i>Arisings to setback area at Buttle Marsh</i>						
<b>Upper Bure</b>	Belaugh to Horstead Mill	0/12	6,000	0	£91,000	£400
<i>3,000 m<sup>3</sup> of sediment to be incorporated into bankside erosion protections schemes; 3,000 m<sup>3</sup> to be mud pumped to arable land</i>						
<b>River Chet</b>	Pye's Mill to Hardley Flood	0/10	5,000	0	£53,800	£11,870
<i>Restoration of 2013-14 dredging completed. Winter 2014-15 dredging to follow.</i>						
<b>Heigham Sound</b>	Restoration of lagoon area	0/0	0	-	£17,500	£14,850
<i>Replanting of lagoon baskets and on-going maintenance. Part PRISMA funded in 2014/15</i>						
<b>Postwick Tip</b>	Restoration of disposal cells & on-going management	0/0	0	-	£16,000	£2,840
<i>Dry sediment to be moved from wet cell to allow future deposition of wet dredgings</i>						
<b>TOTAL</b>			<b>50,000m<sup>3</sup></b>	<b>19,870</b>	<b>£578,000</b>	<b>£226,700</b>





Site 1: Anchor Street, Coltishall



Site 2: Top Road, Belaugh



Site 3: Skinners Lane, Wroxham



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Upper Bure Dredging 2014  
Site Overview

Drawn by: T. Hunter  
Date: September 2014

Scale: Not to Scale  
Drawing: BA/UBD2014/001  
Revision: P1