

**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 2015/16 Construction, Maintenance and Environment Section work programme.

Member's views are sought in relation to item 5 of this report with regards to the proposed changes being suggested to the Waterways Specification.

1 Construction Programme Update 2015/16

- 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 April 2015, 3,630m³ 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 7.3% of the programmed target of at least 50,000m³.
- 1.2 The dredging on the River Ant has been completed and the dredging crew have re-located to the river Bure. Dredging is taking place, upstream of Ant mouth, adjacent to the true right bank. Disposal for this section is into set-back at Horning Hall where the material may be re-used for crest raising once it dries out. Any surplus material will be left insitu and used to form a reeded rond.
- 1.3 Grab 10, our large dredging barge with an installed crane, has been moved from Berney Arms to Oulton Broad in preparation for the dredging campaign due to start week commencing 25 May. Disposal for the removed sediment will be in the lagoon area at the Dutch Tea Gardens.
- 1.4 The RB22 crane, mounted on nine linkflotes has completed the dredging in the River Chet and is being moved back to the Griffin Lane Dockyard as the linkflotes need some maintenance. The last of the sediment removed from the Chet close to Loddon basin has been levelled and fenced off. This is required to stop livestock and pedestrians straying into the wet areas.
- 1.5 The Broads Authority small mud pump is continuing to work on the Upper Bure at Horstead. The wires which anchor the pump into position have been moved to enable the final section of this reach to be dredged. We anticipate to have completed this project by the end of May. Sediment pumped from this location are being placed on an agricultural field, and once dry will be

ploughed in to aid nutrients and water retention within the soils. The mud pump will then be dismantled and returned to Griffin Lane Dockyard for a full overhaul following its earlier submersion in the river.

- 1.6 Our new long reach Doosan DX225LC has been demonstrating its versatility by installing new channel markers in Barton Broad. It was mobilized from dredging duties on the River Ant into Barton Broad to erect 12 new steel channel markers, before moving on to the River Bure to carry on dredging.

2 Maintenance Programme Update 2015/16

- 2.1 The maintenance reports below give a few highlights of the work that has been carried out since the last navigation report.
- 2.2 Using money received from the Airwick air freshener campaign work has started on a 'sensory garden' at How Hill. The scheme will include plants that incorporate colour, smell and noise planted in raised beds to allow all to enjoy. The area around the garden will have a wheelchair and pushchair friendly surface with new benches to allow visitors to sit and enjoy the planting. The construction phase will be completed by mid-June with planting to follow.
- 2.3 Mooring refurbishment has been ongoing with Bramerton, Wayford Bridge and Womack Dyke 24 hour mooring all receiving new timber waling and capping ready for the summer season.
- 2.5 The recent weather, a combination of rain and sunny days has seen the growing season start with gusto; this has seen our mowing programme start with many of the moorings already having had a number of cuts.
- 2.6 Hoveton Riverside Park has also been receiving some much needed maintenance works with timbers being replaced on the boardwalk (under the viaduct) and to the decking area.

3 Environment Team Programme Update 2015/16

- 3.1 Preparation works for the monitoring and mitigations works required at Hickling are ongoing with surface sediments being sampled to investigate the levels of copper concentrations across the broad. Broads Authority Environmental Officers were joined by Steve Lambert (Ph.D. author of original Hickling data, one of the sources of data used by Natural England when determining permitting of works on Hickling).
- 3.2 Prior to sediment disposal at Oulton (Dutch Tea Garden Lagoon) the Environment Officers have been carrying out pre-dredge survey's checking for water vole, nesting birds and reptile habit within the site. Following their recommendations mitigation works to cut back reed growth has taken place.
- 3.3 In order to allow for tree works to take place pre surveying for bats is a requirement under the habit regulations and this work has been undertaken by

Environment Officers and Rangers on the river Bure. This survey works allows tree works to be programmed and prevents bats from being disturbed.

- 3.4 The bio-manipulation barriers at Barton Broad have been inspected to ensure that holes, tears or other gaps do not allow fish to enter the enclosed area.

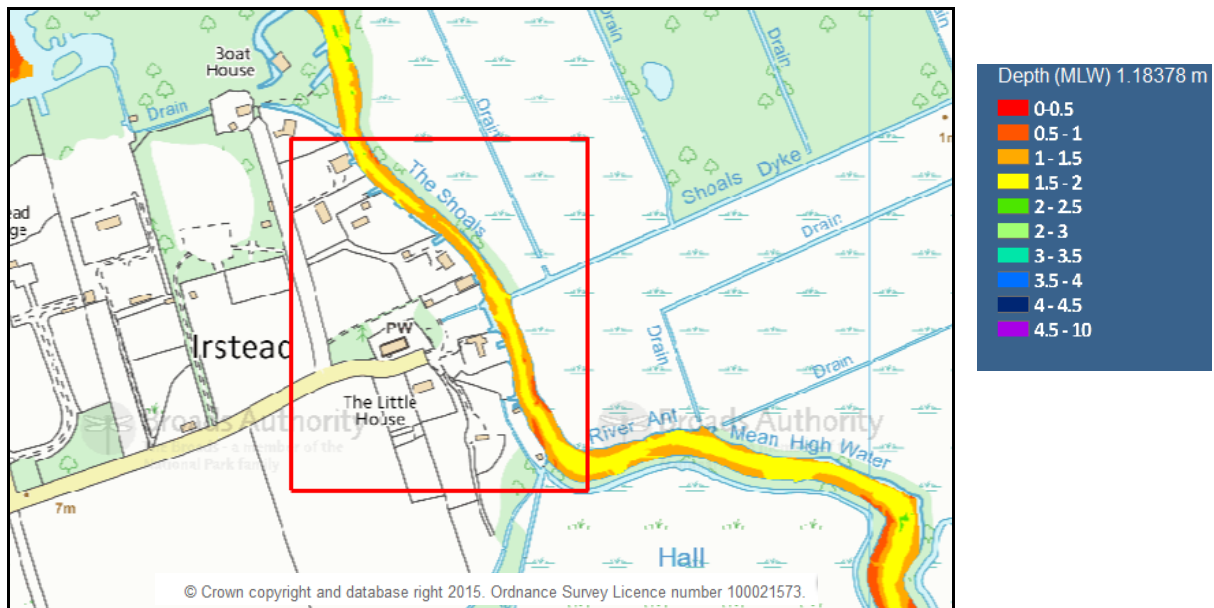
4 Fitters

- 4.1 The hydraulic drive issue we were having with work boat Shoveller has been rectified with both drive systems being replaced and the seals being realigned. This work will mean the vessel can enter back into service.
- 4.2 The refit of the two large wherries, John Fox and Tony Hewett, has now been completed. Both wherries have had new steel floors installed, a needed addition to these vessels as unloading with 360 excavators puts a higher stress on the holds and the old timber floors were not standing up to the task. Whilst at the Dockyard for this work the holds have been shot blasted and repainted to give longevity to the steel plating. Once the engines have been serviced they will both be back into service, forecast to be mid-June.
- 4.3 A delay in receiving a 'triple bank pump' has affected the refit of the Berky weed cutter. The parts are expected this week with installation and river trials being made a high priority. The older weed cutter is in the workshop and the refit and engine servicing is nearly complete. Both cutters are expected in service by the start of June ready to begin weed cutting.
- 4.4 All the motor launches are in service, following their refitting, and only a few minor maintenance issues have been experienced. Motor Launch Charles Collier has been performing well following the fitting of a new engine in April 2015.

5 Suggested Changes to Waterways Specifications

- 5.1 Due to recent dredging work and investigation on the bed material it has become apparent that achieving the original waterways specification is not possible in some localised areas within the scope of the Sediment Management Strategy. The Sediment Management Strategy is based the Authority undertaking maintenance dredging; the removal of accumulated riverine sediments. The extraction of natural bed material is considered to be capital dredging and takes us outside of the main scope of the sediment management strategy.
- 5.2 The Sediment Management Strategy includes the navigable envelope cross sections, showing ideal specification depths. This gives a good broad overview, however some localised conditions require further consideration. A revision is therefore proposed to the waterways specification depth for three localised sites in the Broads navigation, as outlined below. Each of these sites is historically known to be shallow areas and the proposed revised specification depths better reflect the reality of the depths in these areas.

5.3 River Ant: Irstead Shoals

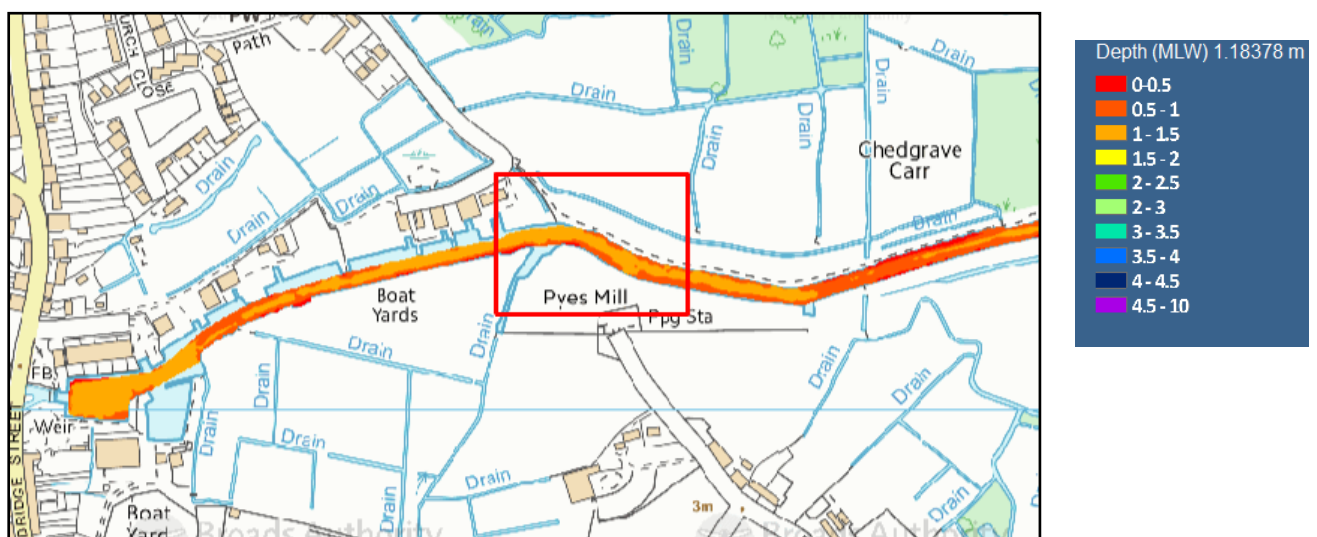


Current specification: 1.8m below mean low water

Proposed revision: Averaging 1.5m below mean low water. If this reduction is acceptable we will core the area to fully understand the shallow areas and sign the area accordingly

Rational to revision: Hard sand and gravel bed including running sands. Significant excavations are not sustainable and quay headings of adjacent properties would be vulnerable to subsidence upon any significant removal in the Shoals.

5.4 River Chet: Pyes Mill

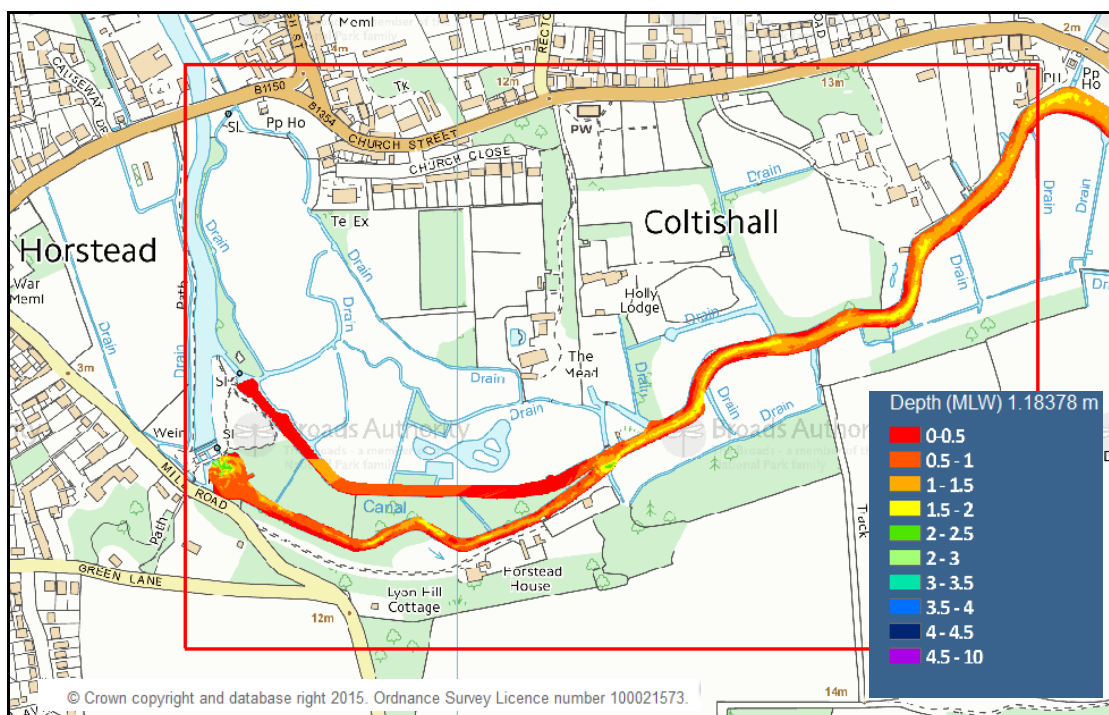


Current specification: 1.5m below mean low water

Proposed revision: Averaging 1.3m below mean low water. If this proposal is acceptable the area will be cored to fully ascertain the extent of the shallowing and signing erect as appropriate.

Rational to revision: Hard gravel seam crosses the river at the upstream end of Pyes Mill which is also an old historic causeway across the water course.

5.5 River Bure: Coltishall to Horstead Lock



Current specification: 1.5m below mean low water

Proposed revision: Averaging 1.2m below mean low water. If this proposal is acceptable then this area will be cored to fully determine the historic bed and the area will be signed appropriately

Rational to revision: Hard sand and gravel bed with restricted width along the canal section up to the lock. Also Wroxham Bridge provides a vessel restriction along this stretch.

Background papers: Nil

Author: Rob Rogers
Date of report: 18 May 2015

Broads Plan ref: NA1.1

Appendices: APPENDIX 1 –Dredging Progress Table 2015/16

Dredging Progress 2015/16 (to end April 2015)

APPENDIX 1

Project Title	Project Element	Active dredging weeks Completed (to end Apr/Planned	Volume Removed m ³		Annual project cost ¹	Actual project cost (Apr-Mar)
			Planned	Actual	Planned	Actual
River Ant	Irstead to Barton Broad	3/4	1,500	1,030	£24,340	£20,110
<i>Final section of dredging - work started in 2014/15 completed mid May 2015</i>						
River Chet	Pye's Mill to Loddon Basin	4/4	1,000	1,800	£10,810	£14,690
<i>Final section of dredging - work started in 2014/15 completed mid May 2015. Additional volume near Loddon Basin removed</i>						
Upper Bure	Coltishall Lock	4/8	2,000	800	£29,570	£8,950
<i>Mud pump started last week of February 2015, continuing to end May 2015.</i>						
Upton Dyke	Restoration work on setback filled in 2014/15	NA	NA	NA	£7,000	£0
<i>Excavator work to achieve final levels</i>						
Mid Bure	Thurne Mouth to Horning Hall	0/12	8,000	0	£80,070	£1,550
<i>Dredging started mid May 2015, filling setback area upstream of Ant Mouth</i>						
Mid Bure	Thurne bank rond restoration	NA	NA	NA	£10,550	£0
<i>Re-profiling rond upstream of Thurne White Mill</i>						
Oulton Broad	Oulton Broad	0/14	10,000	0	£73,090	£0
<i>Mobilisation started mid May 2015</i>						
Mid Bure	Acle to Stokesby	0/10	7,000	0	£56,150	£0
<i>Use of setbacks near Acle Bridge</i>						
Upper Yare	Whitlingham bends	0/8	4,500	0	£53,500	£0
<i>Arisings to Postwick Tip</i>						
Lower Yare	Seven Mile House to Berney Arms	0/10	5,000	0	£50,330	£0
<i>Use of setbacks downstream of Reedham</i>						

Upper Bure	Belaugh to Coltishall	Contractors	3,000	0	£28,000	£0
<i>Sediment re-use in bank stabilisation schemes</i>						
Lower Bure	Marina Quay to Three Mile House	0/12	8,000	-	£95,000	£0
<i>Subject to further project planning and planning to use local land</i>						
Hickling Broad	<i>Navigation channel in NW corner and approaches to Catfield Dyke</i>	<i>0/12</i>	<i>6,000</i>	<i>-</i>	<i>~£50,000</i>	<i>£530</i>
<i>Subject to further project planning and gaining all required consents</i>						
TOTAL		11/82	50,000	3,630	£518,410	£45,830

1 – Costs for staff and BA plant will be updated following production of year-end figures