

**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.

Members are directed to the Draft 2016/2017 Dredging Programme and are invited to comment upon the priorities presented.

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 September, 28,080m³ 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 56% of the programmed target of at least 50,000m³.
- 1.2 The dredging project on the Lower Yare, between Seven Mile House & Berney Arms is underway. The dredger is currently working opposite Raven Hall with the removed sediment being taken to a disposal site at Seven Mile House. This is a ten week project which is due to complete in mid-November.
- 1.3 The second dredging crew are working on the Mid-Bure, between Thurne Mouth and Horning Hall. This project has been extended due to the agreed start date for Hickling (please see paragraph 3.1). The plant and equipment currently being used was due to be dismantled and moved through Acle Bridge to begin dredging between Acle & Stokesby, but with the permissions now agreed for Hickling we decided to carry on until 16 October, when we will re-mobilize to Hickling Broad. This saves time and money in mobilization and allows greater inroads being achieved in this section of the Bure.
- 1.4 The reed rond at Thurne White Mill was a location we had used in an earlier campaign to place dredged material, whilst we waited for it to dewater. In September we returned to re-profile this material and re-sculpt the rond, as per the agreement with the landowner.



White Mill, Thurne – Rond restoration following dredging deposition

- 1.5 Wildlife mitigation has taken place at Acle (one site upstream of the Bridge and one downstream) in preparation for the dredging between Acle and Stokesby. This work involves drawing down the water levels in the set-back and strimming any vegetation to deter water-voles from colonizing the area prior to us using it for sediment storage.
- 1.6 The Fen Harvester has now begun its winter programme as the bird nesting season has finished. The cut at Reedham Marshes has been completed and the Softrak MkII is being moved to Gelderstone to start on the mowing rotation at this site.

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 Tree safety work and tree assessments have been carried out on land under Broads Authority management and lease agreements, at Paddy's Lane, Horstead Mill and River Side Park at Hoveton. This work is vital to ensure site safety and keep up with on-going tree maintenance. Work to remove a fallen tree on the Upper Waveney has also taken place with the workboat Shoveler being used to remove the larger sections.
- 2.3 Conservation tasks are in full swing on areas under our stewardship and scrub clearance has been taking place on Mill Marsh at Barton Turf and Common Fen at Smallburgh. Both locations have seen the use of the 'Fire-Sledge'. This is a steel sledge which is winched across the ground and enables the cleared arising's to be burnt without the nutrient rich ash leaching back into the underlying peat. Leaving the soil undamaged is a vital part of the species management for marshland.

- 2.4 11 channel markers on Breydon water have been replaced. Utilising the large barge JMC9 (it recently finished the refurbishment of Turn Tide Jetty) the worst affected channel markers, those eaten away by Gribble worm, were removed and new long life steel makers have been driven in.
- 2.5 The scheme to create a sensory garden at How Hill using income from the Airwick air freshener sales is nearing completion. The raised planters, pathway and plants have been installed. The remaining elements, three wooden benches, a bespoke sculpture and reed panel fencing will be added later in October when the orders arrive.
- 2.6 Maintenance Operatives and volunteers have been carrying out repairs to Cockshoot Boardwalk, as part of a partnership deal with Norfolk Wildlife Trust (NWT). The section from the car park to the 24hr mooring is no longer leased by the Broads Authority and has already been handed back to the land owner. The second part of the walk, from the mooring, around the loop and to the bird hide is also being made ready to hand back to the land owner, as per the existing lease agreement. The Broads Authority has provided the eight weeks of labour required bringing this section up to a reasonable standard and NWT has paid for the materials. Once completed this part of the walk will also be handed back to the landowner.
- 2.7 Three young Apprentices have started a 12 month placement with the Construction, Maintenance & Environment Teams as part of a new scheme to encourage younger people to gain the skills and knowledge needed to maintain the Broads. We are partnered by Easton & Otley College and the Apprentices will work towards a NVQ level 2 in Environmental Conservation. The majority of the course will be through the demonstration of practical skills learnt on site and signed off by an External Assessor from the College. The three apprentices are being financed by a staff vacancy within CM&E which was held open in order to develop this scheme.

3 Environment Team Programme Update 2015/16

- 3.1 Assent has been gained from Natural England for the dredging works at Hickling Broad, planned for this autumn/winter. The methodology we submitted includes dredging within a moon-pool with silt curtains to minimise the fluidisation of sediments, water sampling before, after and during the works to monitor water temperature, dissolved oxygen, salinity and turbidity as well as taking regular samples for the Pymnesium counts.
- 3.2 A comprehensive tree clearance programme has been developed and prioritises areas along the Ant river corridor, both sides of the river downstream from Hunsett Mill. Land owner agreements, bat surveys and habit surveys have been completed. These works will be progressed with Operations Technicians, Rangers and contractors with the highest priority areas being completed first over this winter period.

- 3.3 The specification and scope of bank stabilisation using dredged material as the fill medium is progressing for areas along the Upper Bure. We are hoping to release these works to a contractor to allow us to keep our dredging crews working on other priority areas and to allow us to put the resources into the Hickling Broad project over winter.
- 3.4 The season start-up meeting with Broadsword was held at the dockyard and the locations for this group's winter works has been agreed. They will be progressing tree and scrub clearance on the River Bure, upstream of Horning and a secondary fall back site (needed if the first priority site has high water levels) of How Hill has been agreed. This group is supported on site by a Senior Operation Technician with the planning, prioritisation, specifications and agreements being developed by an Environment Officer.
- 3.5 Environment Officers and Rangers have been updating the woodland management plans for Whitlingham Charitable Trust. These agreements are developed in conjunction with the land Agent.

4 Fitters

- 4.1 The fitting team is fully engaged with maintaining, repairing and servicing the variety of plant, vessels and equipment we use in the management of the land and water within the Broads Executive area, these are a few highlights of works recently carried out. .
- 4.2 The Tug Bantum has been returned to the Dockyard for urgent repairs to the exhaust system, engine service and repairs to the propeller shaft as it is believed items have fouled the propeller .
- 4.3 The wherry Iona has been undergoing a routine service and whilst she is at the dockyard we are taking the opportunity to repaint her. The original paint, applied whilst she was being built did not bond to the required standard, so the builder has reimbursed us the total costs and we will undertake the repainting to ensure quality and longevity of the finish. This work will require the hull to be shot-blasted back to bare steel and various layers of primer and top coat being applied.
- 4.4 With the weed cutting season over and two complete cuts being completed, both weed cutters are back for refit and conversion into work boats. Once ready they will be used by the Ranger Team and Maintenance Teams to undertake tree work in and around the system as they offer a stable, level floating platform to work from.
- 4.5 The link flotes, part of the capital purchases for 2015/16 have arrived and have been assembled at the dockyard. The new units are now having the safety railing and spud leg anchor system fitted before they go into service. The anchor system will use hydraulic power packs to raise and lower the legs removing the need to attach winches and wires. This improvement reduces time on site when repositioning the floats and prevents wires causing potential obstructions to passing craft.

5 Draft Dredging Programme for 2016/ 2017 Financial Year

5.1 The table below identifies the draft dredging programme for 2016 – 2017 and has been developed using priorities identified within the Sediment Management Strategy as well as incidents reported via Broads Control. Each project is reliant upon landowner agreement for the deposition, storage and re-use of the sediment, so for example, the Hickling dredging project still needs an agreement with a landowner for de-watering lagoons and a suitable re-use solution prior to this project commencing. Therefore the following list is also being developed to ensure our target removal quantity is maintained in the event that priority projects cannot be delivered.

- River Yare at Trowse
- Waxham Cut

5.2 Draft Dredging Programme 2016/17

Project	Programme	Volume m ³
Upper Bure Between Belaugh and Coltishall, sediment re-used to restore eroded bankside areas	3 week Jan - Feb	1,000
Lower Waveney Shoal removal on Belton Reach and between posts 70 and 78 at Burgh Castle	10 weeks Apr-Jun	3,000
Lower Yare Shoaling shelves near Seven Mile House	8 weeks Jun-Jul	2,000
Haddiscoe New Cut Main Cut following recent work at entrances	16 weeks Apr - Jul	14,000
River Yare Bends at Whitlingham	12 weeks Aug - Oct	3,500
Langley Dyke Bar at dyke entrance	1 week Oct	400
Rockland Boat Dyke Boat dyke to Rockland Staithe	8 weeks Nov - Dec	2,500
Limekiln Dyke Gaye Staithe to Neatishead Staithe	10 weeks Jan - Mar	3,600
Lower Bure Three Mile House towards Caister	16 weeks Sept - Dec	10,000
Hickling and Catfield Dyke Hickling navigation channel (second phase) and Catfield Dyke	Contractor mudpump Nov – Mar A combination of sediment re-use options i.e reeded fringe to replace eroded areas, Island creation & land deposition.	10,000
TOTAL		50,000

Background papers: Nil

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Appendices: APPENDIX 1 – Dredging Programme 2015/16

Dredging Progress 2015/16 (April 2015 to end Sept 2015)

APPENDIX 1

Project Title	Project Element	Active BA dredging weeks Completed (to end Sept/Planned)	Volume Removed m ³		Annual project cost	Actual project cost ¹ (Apr-Sept)
			Planned	Actual	Planned	Actual ²
River Ant	Irstead to Barton Broad	3/4	1,500	1,030	£24,340	£18,650
<i>Completed mid May 2015</i>						
River Chet	Pye's Mill to Loddon Basin	7/4	1,000	2,900	£10,810	£18,650
<i>Completed mid May 2015. Additional volume near Loddon Basin removed</i>						
Upper Bure	Coltishall Lock	5/8	2,000	900	£29,570	£24,640
<i>Pumping completed end May 2015. Total sediment removed 1,600 m³. Mud due to be spread in October 2015</i>						
Upton Dyke	Restoration work on setback filled in 2014/15	NA	NA	NA	£7,000	£560
<i>Completed at end of May 2015.</i>						
Mid Bure	Thurne Mouth to Horning Hall	17/12	8,000	11,270	£80,070	£95,060
<i>Dredging started mid May 2015, filling setback area upstream of Ant Mouth. Project extended.</i>						
Mid Bure	Thurne bank rond restoration	NA	NA	NA	£10,550	£5,240
<i>Re-profiling rond upstream of Thurne White Mill completed September 2015 with BA plant</i>						
Oulton Broad	Oulton Broad	12/14	10,000	10,170	£73,090	£68,280
<i>Completed 24th August 2015.</i>						
Mid Bure	Acle to Stokesby	0/10	7,000	0	£56,150	£2,380
<i>Use of setbacks near Acle Bridge agreed. Works to start mid November 2015.</i>						
Upper Yare	Whitlingham bends	0/8	4,500	0	£53,500	£2,620
<i>Deferred to summer 2016 following progression of dredging at Hickling. Mid Bure dredging also extended in 2015.</i>						
Lower Yare	Seven Mile House to Berney Arms	3/10	5,000	1,810	£50,330	£20,290
<i>Started September 2015.</i>						

Upper Bure	Belaugh to Coltishall	Contractors	1,500	0	£28,000	£2,970
<i>Sediment re-use in bank stabilisation schemes. Due to start November 2015</i>						
Hickling Broad	Navigation channel in NW corner and approaches to Catfield Dyke	0/8	3,500	0	£90,000	£6,320
Natural England assent gained, start date 2 nd November, subject to environmental conditions						
TOTAL		47/78	50,000	28,080	£513,410	£265,660

1 –project costs includes staff time for all elements (pre-works ecological mitigation, site set-up, active dredging & site restoration); BA plant; & budgetary expenditure (equipment hire, contractor costs, mitigation works, materials & consumables etc); within the reporting period.

2- Broads Authority plant rates were re-calculated in September 2015 and have been applied to the project costs.