

**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.

Please note the report contains the final dredged volume but the full costs will be reported once the year end accounts have been finalised.

**1 Construction Programme End of Year 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 March 2016, 51,435m<sup>3</sup> 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 103% of the programmed target of at least 50,000m<sup>3</sup>.
- 1.2 We were able to better the 50,000m<sup>3</sup> of sediment removal in 2015/16 due to two main factors, the skill of the excavator operators, filling and re-shaping the sediment in the set-back areas, getting more material in than calculated and the landowners in the middle Bure wanting to re-use the material. At the set-back area at Acle we worked in conjunction with the landowner to formulate a restoration plan whereby the setback dyke could be filled, re-profiled and left higher to enable grass to grow. This work was carried out with agreements from BESL and will enable the area to be grazed with cattle. The other area where a re-use for the sediment was identified was at Horning Hall. The sediment in this setback was left higher to enable crest raising to take place once the material dries. The culmination of these agreements has allowed us to maximise the amount of sediment deposited in the setbacks and allows for sustainable re-use of the material.
- 1.3 The dredging at Hickling was a successful project with a total of 3,420m<sup>3</sup> being removed. This was only 80m<sup>3</sup> short of the projected 3,500m<sup>3</sup> we calculated was needed to fill Duck Island and restore the erosion at Hill Common. We also had time to dredge reed rhizome from the River Thurne at Potter Heigham from around the Environment Agency fishing platforms. This material has been placed into the voids at Hill Common and Duck Island to help establish reed and sedge growth, needed to stabilize the sediment and protect the sediment from wave and wind action.

## **2 Maintenance Programme Update 2015/16**

- 2.1 At this time of year the Maintenance Teams are busy making final preparations for the 2016/17 season. Below are a few highlights from the works completed since the last report.
- 2.2 Somerleyton 24 hour Mooring has had two electric charging points added. This location was identified on the Charging Point Strategy but has always been a challenging site as the mains electrical cabling, required to make a connection, was a long way from the mooring location. After careful negotiations with UK Power Network and trenching contractors an affordable price was agreed and over 200m of trenching and cabling has been installed. This latest addition at Somerleyton is operational, ready for the season ahead. In 2016/17 we need to make wholesale changes to the actual charging pillars as the meters within the pillars require updating, therefore we will use the Electric Charging Budget to accommodate this change and installation of new charging points will recommence in 2017/18.
- 2.3 Ludham Bridge has had a new permissive footway created to link Ludham to Saint Benets Abbey. The 500m pathway runs along the floodwall and was identified by the Senior Waterways and Recreation Officer with the funding for the various fencing, gates and signage coming from a successful Project Development Funded bid.
- 2.4 Work has taken place at How Hill to improve the surface of the car parking area. Over 5 tonnes of hogging has been compacted and overlaid with 20 tonnes of aggregate to improve the parking area. Whilst work crews were on site we also reshaped 600m of dykes around the meadow to better improve water flow and water level control in the location. All arisings have been regraded on the bankside.
- 2.5 All 64 mooring locations have had their surfacing checked and topped up as required ready for the new season. Wood chipped surfacing at Paddy's Lane, Gayes Staithe, Irstead, Cockshoot and both Wroxham Broad island moorings have had a complete refresh and top up.

## **3 Environment Team Programme Update 2015/16**

- 3.1 Environment Officers have successfully bid for funding from the Project Development Fund to replace two vital pieces of equipment used to manage fen sites. The first item is a new 'Iron Horse' a low ground bearing, caterpillar tracked, mechanical tractor unit. This item is heavily used to carry tools and materials, pull the fire sledges, and pumps into wet fen site inaccessible by other vehicles. The second item is a 'Stump Grinder' attachment to fit onto the front of the Softrak MkII. This item is able to grind tree stumps down to below ground level, preventing regrowth and removing the 'lump' often left behind when restoring fen sites. Using the Stump Grinder on the Softrak reduces the need to bring in heavy 360 Excavators which can consolidate the fragile peat substrate which damages the ecology of the area.

- 3.2 Following the successful mapping and prioritising of bankside trees on the River Ant, Environment Officers are now applying the same methodology to bankside trees in the middle Bure and River Thurne. The project carried out on the River Ant enabled us to concentrate our budgets and resources and using a combination of Rangers, Operation Technicians, Volunteers and Contractors we cleared over 4km of bankside trees. The priority was to remove trees that encroached into the navigation, caused wind shadow and obstructed visibility on bends or on areas where the river narrows. In 2015/16 we have concentrated on areas between Irstead and Dilham, with a large section of tree clearance at Lime Kiln Dyke. The River Ant also benefitted from a sustained winter work programme by Broadsword with riverbank scrub and trees being removed from Reedham Marsh, opposite How Hill.
- 3.3 Water sampling at Hickling Broad continues with fortnightly samples being taken and assessed for *Prymnesium Parvum*, this regime will drop back to monthly sampling and counts as from the end of April. This data is helping us build a picture of the *Prymnesium* within Hickling and as well as this data we are also collecting temperature, salinity, turbidity and dissolved oxygen counts, which all feature in the connection with *Prymnesium* and it turning toxic. The data is also helping us in gaining the required consents, Planning Permission and stakeholder approval, for the next phase of enhancement works at Hickling, which is planned for winter 2016/17.

#### **4 Fitter Team Programme Update 2015/16**

- 4.1 The Spirit of Breydon remains at the Dockyard. The service schedule for this vessel states that intercooler coils should be removed and cleaned every 400hrs, but because of the way the engine is mounted this aspect of the service requires the complete unit to be removed, on removal it showed damaged air intake gaskets, which need replacing. These parts are on order and we are awaiting delivery from Italy.
- 4.2 The Dredging Barge containing Grab 10 has had a major service, the crane required new swivel rollers and works to the clutches. The main dredging bucket required a complete overhaul with new wires, rollers and pin replacement. The barge is being moved in early April from the Lower Bure to the River Waveney and it will carry out a small dredging project at Burgh flats on its way through (dependant on Natural England consents for this work).
- 4.3 The trip boats have been made ready for visitors with Liana receiving major repairs over the winter. Roofing planks had rotted in the aft section where water had dripped through a small section of damaged canvas. All rotten timbers have been removed, a new marine ply skin added and a GRP roof covering made to protect the roof from any more damage. She has also had a new antifoul coat applied and re-varnished decks. Ra, the solar powered vessel at Whitlingham Broad, has had both drive shafts replaced, new bearings and seals, all the varnish stripped and reapplied with a new antifoul coating. She is back at Whitlingham ready for the new season.

- 4.4 The fitters have also been kept busy with minor repairs and ongoing maintenance to the other work boats, excavators, grab buckets and wherries we use in the maintenance of the Broads and the Small Tool & Plant Fitter has continued to maintain and repair over 400 items of powered tools including Chainsaws (heavily used as we tackled the priority areas on the River Ant) brush cutters and mowers.

Background papers: Nil

Author: Rob Rogers

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Appendices: APPENDIX 1 – Dredging Programme 2015/16

# Dredging Progress 2015/16 (April 2015 to end March 2016)

# APPENDIX 1

Project Title	Project Element	Active BA dredging weeks Completed (to end Mar/Planned)	Volume Removed m <sup>3</sup>		Annual project Cost <sup>a</sup>	Actual project cost <sup>b</sup> (Apr-Mar)
			Planned	Actual	Planned	Actual
<b>River Ant</b>	Irstead to Barton Broad	3/4	1,500	1,030	£24,340	£25,710
<i>Completed mid May 2015</i>						
<b>River Chet</b>	Pye's Mill to Loddon Basin	7/4	1,000	2,900	£10,810	£21,680
<i>Completed mid May 2015. Additional volume near Loddon Basin removed</i>						
<b>Upper Bure</b>	Coltishall Lock	5/8	2,000	900	£29,570	£35,260
<i>Total sediment removed 1,600 m<sup>3</sup> over 2014/15 and 2015/16 years. Sediment spread for agricultural benefit in Oct 2015</i>						
<b>Upton Dyke</b>	Restoration work on setback filled in 2014/15	NA	NA	NA	£7,000	£560
<i>Completed at end of May 2015 using staff rather than contractors.</i>						
<b>Mid Bure</b>	Thurne Mouth to Horning Hall	19/12	8,000	12,500	£80,070	£153,820
<i>Filling setback areas upstream of Ant Mouth. Autumn phase completed. Returning in April 2016 after Hickling dredging complete.</i>						
<b>Mid Bure</b>	Thurne bank rond restoration	NA	NA	NA	£10,550	£12,760
<i>Re-profiling rond upstream of Thurne White Mill completed September 2015 with BA plant</i>						
<b>Oulton Broad</b>	Oulton Broad	12/14	10,000	10,170	£73,090	£87,000
<i>Completed 24<sup>th</sup> August 2015.</i>						
<b>Mid Bure</b>	Acle to Stokesby	16/10	7,000	14,200	£56,150	£102,180
<i>Area dredged was extended and setback areas filled and levelled to agreed specification with landowners</i>						
<b>Lower Yare</b>	Seven Mile House to Berney Arms	9/10	5,000	5,500	£50,330	£54,340
<i>Completed.</i>						
<b>Upper Bure</b>	Belaugh to Coltishall	Contractors	1,500	185	£28,000	£19,940
<i>Anchor Street site completed Oct 2015. Only one bank stabilisation site of the original three could be carried out in 2015/16.</i>						
<b>Hickling Broad</b>	Navigation channel in NW corner and approaches to Catfield Dyke. (Plus additional dredging at Potter)	14/10 (3)	3,500	3,420 (630)	£90,000	£168,000
<i>Duck Broad and Hill Common reedbed restoration areas both filled. Additional dredging on River Thurne at Potter also completed.</i>						
<b>TOTAL</b>		<b>88/80</b>	<b>50,000</b>	<b>51,435</b>	<b>£513,410</b>	<b>£681,250</b>

<sup>a</sup> –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, survey costs, contractor costs, mitigation works, materials & consumables etc); within the reporting period.

<sup>b</sup> –figures are not official year end figures, these will be available at next meeting once year-end figures are produced.