

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

Report by Head of Construction, Maintenance & Environment

**Purpose:** This report sets out the progress made in the delivery of the 2019/20 Construction, Maintenance and Environment Section work programme to date. The final dredging figures for the 2019/20 are also detailed in Appendix 2.

### **1 Achieving Waterways Specification for navigation**

- 1.1 The detailed breakdown in Appendix 1 gives the volumes for the dredging programme to the end of April 2019. A total of 1,760 m<sup>3</sup> of dredged sediment has been removed from the prioritised sites. This figure represents 4% of the programmed target of 44,000 m<sup>3</sup> for 2019/20. The 2007 Sediment Management Strategy stated a bulk volume dredging target of 50,000 m<sup>3</sup> per annum. Since then, improvements in the accuracy of hydrographic data gathering and more detailed modelling of the Waterways Specification across the whole of the Broads, has meant that simply removing large volumes is not the most effective way to improve navigation conditions. In 2019/20 the Authority is tackling some complex projects in areas that will bring direct benefits to users. As such, this means the total volume dredged will differ from the previous rigid target of 50,000 m<sup>3</sup>.
- 1.2 In April, the active dredge site has been at Fleet Dyke, South Walsham, with sediment taken to the setback areas around Horning Hall at Ant Mouth. BESL has been busy using previously deposited sediment from these setback areas to top up the flood banks in this area.
- 1.3 At Hickling Broad, all the major plant and equipment has been demobilised. The silt curtain, marker buoys and warning signs have been put out to protect the structure over the summer. We will return this autumn to start filling the retained area within the ring of geotextile tubes.
- 1.4 Progress preparing for projects to be started this winter (2019/20) is going well. Waxham Cut is awaiting the results of reptile surveys before submitting the Habitats Risk Assessment to Natural England in June. Tyler's Cut has a signed agreement with a neighbouring landowner for bankside spreading of the arisings. At Peto's Marsh, preparation has started with some excavator work and general setting out of the site.

1.5 Appendix 2 gives the final summary of the projects included in the 2019/20 dredging programme. Of the original target of 40,000 m<sup>3</sup>, a final total of 41,780 m<sup>3</sup> was actually achieved. This figure represents 104% of the programmed target of 40,000 m<sup>3</sup> for 2019/20. The additional volumes of sediment were gained from dredging in the Lower Bure. Slightly more time was spent in this area than planned, but it was particularly productive, with large volumes of sediment and relatively close areas for sediment re-use on the adjacent roads. Additional contractor time was also available within the annual budget, so shoals at the upstream end of Breydon Water were also able to be dredged.

## **2 Maintaining safe public mooring facilities**

2.1 Hoveton Viaduct 24-hour moorings were opened for the Easter holiday period. Contractors completed 110 metres of new piling, mooring posts and path at the downstream end of this mooring. Some remaining snagging issues were identified and planned to be completed by the middle of May.

2.2 On Oulton Dyke, the Dutch Tea Garden 24-hour moorings have been receiving a full refurbishment on the timber capping and waling. Safety ladder installation and upgrades have also been carried out at Deep Dyke mooring at Hickling Broad. In early April, ahead of the Easter holidays, all of the Authority's electric charging pillars on the 24-hour moorings received their annual electrical service and safety checks.

## **3 Our resources**

3.1 This month we welcome Matt Hicks to the Plant & Equipment Team, who starts as an Operations Fitter. We also say goodbye to Mark Tomlinson, the Senior Environment Officer, who leaves us to lead a team of freshwater ecologists at a national consultancy firm.

3.2 After a busy winter period with all the large vessels and pontoons in heavy usage, some much needed refit time for some of the wherries and linkflotes is planned. Iona was lifted at Cox's Boatyard for installation of a new propeller. Linkflote set 1 is being lifted at Alicat's facility in Great Yarmouth for blast cleaning and repainting.

3.3 At the Thorpe Dockyard, ahead of creating a suitable surface capable of supporting the largest lifts with the Andes crawler crane, a suite of geotechnical testing has been carried out. The design of the piling on the river frontage, and crucially its anchoring into the ground away from the river, is not sufficient on its own to support these maximum loads. Using the planned monies drawn from reserves this year, the proposal is to create a concrete pad with concrete filled steel case piles driven into the dense substrate below the peat. Extending the sites capability to enable lifting of the small wherries, workboats and tugs, this will save budget, increase our operational flexibility and reduce vessel downtime.

## 4 Managing water plants

- 4.1 The first weed harvesting vessel out on the system this year has been deployed to the Upper Thurne. Cutting at Somerton Dyke, Waxham Cut and Catfield Dyke are usually the first locations that require cutting and are planned for a cut by the end of May. Other sites to follow are typically the Bure, upstream of Belaugh, the Ant upstream of Wayford Bridge, The Wensum upstream of Trowse rail bridge and the Waveney upstream of Beccles. The exact programme is then guided through the season as reports of excessive growth are fed back from Rangers in these locations.
- 4.2 The first survey of the extent and height of water plants across Hickling Broad has been carried out in early May. The results will be mapped and shared to guide users. Further surveys using hydroacoustic equipment are planned for August and October. As per the consented plan for Hickling, any required cutting within the marked channel through Hickling is restricted to the period June to August inclusive.
- 4.3 The 2019 summer season sees the final year of very detailed monitoring of the trial stonewort cut areas on the west of Hickling Broad. This experimental site was cut in 2017, with regular monitoring since then. The interim report at the end of 2018 showed little significant impact from the cutting when compared to similarly monitored non-cut areas. Given no stonewort cutting happened in 2018, as plant heights did not reach high enough to cut, the agreement with Natural England, Environment Agency and Norfolk Wildlife Trust, was that no cutting should happen in 2019 either. This scenario gives the ideal opportunity to evaluate the ecological impact of a one-off cut, over several years of detailed monitoring. Repeating the trial cut again in 2019 would not provide any additional evidence of long-term impact from the 2017 cut. A final report for this trial will be produced in winter 2019/20.
- 4.4 The final report for the 2018 annual water plant report is now available and can be accessed via the following link: [The Broads Annual Water Plant Monitoring 2014 – 2018](#).
- 4.5 In addition to the specific results from the broads surveyed for water plants in 2018, the report provides the first medium term (five year) analysis of trends (2014 to 2018) since the revised “point” survey method was adopted. Information on the abundance and species present in the section of navigable channels that are routinely cut for navigation purposes, is also presented.

Background papers: [2018 Annual water plant report](#)

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Appendices: Appendix 1 – Dredging Progress 2019/20  
Appendix 2 – Annual Dredging Summary 2018/19

## Dredging Progress 2019/20 (April 2019)

Project Title	Project Element	Active BA dredging weeks Completed / Planned	Volume removed m <sup>3</sup>		Annual project cost <sup>a</sup> £	
			Planned	Actual	Planned	Actual
<b>Hickling</b>	Dredging of marked channel & habitat creation (Oct - Feb)	0 / 22	8,000	0	149,670	7,220
<i>CANAPE funded project; filling the lagoon areas created within the geotextile tubes</i>						
<b>Tyler's Cut</b>	Dilham Staithe and 600m downstream (Nov - Dec)	0 / 17	3,000		40,330	10
<i>Sidecasting to north bank</i>						
<b>Mid Bure</b>	a) South Walsham Fleet Dyke (Apr - May) b) Oby to Acle Bridge (Jun - Aug)	0 / 22	13,000	1,760	126,640	8,790
<i>Setback areas at Horning Hall and Oby</i>						
<b>Oulton Broad</b>	Dredging in North Bay (Aug - Sep)	0 / 9	6,000	0	51,680	210
<i>Sediment into setback area at Horseshoe Point</i>						
<b>Waxham Cut</b>	Dredging & sidecast (Nov - Jan)	0 / 13	4,000	0	38,090	40
<i>Sidecasting onto the eastern bank from Horsey Mere to Brograve Mill (subject to various consents being gained)</i>						
<b>Waveney</b>	Beccles to Stanley Carrs (Apr - Jul)	0 / 16	8,000	0	102,550	3,000
<i>Sediment onto folding along the Suffolk bank</i>						
<b>Lower Bure</b>	Plough dredge (Mar)	Contractor	2,000	0	10,000	
<i>Priority shoals in lower Bure and Breydon Water</i>						
<b>Site Restoration</b>	Stokesby, Lower Bure & Postwick Tip	-	-	-	43,540	2,240
<i>Rond restoration after sediment has dried on the Bure; moving dried sediment out of the "wet cell" at Postwick Tip</i>						
<b>Site Preparation</b>	Peto's Marsh, Calrton Marshes	-	-	-	15,860	150
<i>Construction of new cross wall in preparation for sediment re-use in 2020-2022 for dredging from Oulton Broad</i>						
<b>TOTAL</b>		<b>4 / 99</b>	<b>44,000</b>	<b>1,760</b>	<b>568,360</b>	<b>21,660</b>

## Annual Dredging Summary 2018/19 (April 2018 to end March 2019)

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 (Apr-Mar)
			Planned	Actual	Planned	Actual
<b>Lower Bure</b>	a) Three Mile House to Marina Quays (Apr-Aug) b) Marina Quays to Yacht Station (Sep-Nov)	37 / 32	14,000	20,920	£184,400	£245,870
<i>All completed</i>						
<b>Mid Bure</b>	a) Horning to Thurne Mouth (May-Jul) b) South Walsham Fleet dyke (Feb-Mar 2019)	20 / 33	18,000	12,000	£190,450	£94,310
<i>All dredged material being from mid Bure currently being placed in setbacks near Horning Hall. Setback area at Oby has been prepared for usage June 2019 onwards</i>						
<b>Breydon Water</b>	Bar upstream of Breydon Bridge (Sept 2018)	1 / 1	500	300	£1,300	£1,300
<i>Mechanical dredging with excavator completed as an urgent safety hazard</i>						
<b>Hickling Broad</b>	Mudpumping marked channel in North Bay (Oct-Feb)	16 / 16	5,500	5,860	£148,850	£94,450
<i>CANAPE funded project underway</i>						
<b>Lower Bure</b>	Plough dredge (Mar)	Contractor	2,000	3,000	£9,500	£9,000
Contract for plough dredging to tackle priority shoals on Lower Bure near Yacht Station, and Breydon Water near Turntide Jetty						
<b>Site restoration</b>	Rockland, Hickling, Stokesby	-	-	-	£42,590	£36,750
<i>All completed apart from Hickling ploughing of pumped sediment, which has been deferred til late spring 2019 when soil is dry enough</i>						
<b>TOTAL</b>		<b>74 / 82</b>	<b>40,000</b>	<b>41,780</b>	<b>£577,090</b>	<b>£481,680</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.