

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

Report by Head of Construction, Maintenance & Environment

Purpose: This report provides the Committee with an update on the progress made in the delivery of the 2018/19 Construction, Maintenance and Environment Section work programme to date.

1 Dredging and Waterways Specification

- 1.1 The detailed breakdown in Appendix 1 gives the volumes for the dredging programme to the end of July 2018. A total of 15,290 m³ of dredged sediment has been removed from the prioritised sites. This actual figure represents 38% of the programmed target of 40,000 m³ for 2018/19.
- 1.2 Additional staff time and budget efficiencies have been sought in the 2018/19 dredging programme, to minimise movement and mobilisation of equipment, whilst retaining dredge volumes at priority sites. To achieve this, the planned dredging on the Waveney downstream of Beccles has been deferred to April 2019. The mobilisation to the River Chet for a relatively small amount of dredging (3,000 m³) has also been deferred. Where the sediment was to be used on the River Chet to strengthen the floodbank, the previously closed footpath has been re-opened, so more lead in time is needed to resolve this issue and develop additional benefits for footpath users. The outcome of this change to the programme has been to give more time dredging on the mid Bure between Thurne Mouth and Acle and in the Lower Bure through Great Yarmouth. Additional time in Great Yarmouth will be beneficial as the dredge requirement to achieve Waterways Specification depth is fully across the whole channel.
- 1.3 The range and duration of site restoration following completion of dredging projects, as well as preparation time for forward projects, is particularly heavy this year. The methodology of placing sediment on the river ronds requires re-handling by excavators to shape the material to the floodbank. This work has been occurring at Stokesby, where some drone footage was taken earlier this summer. The link to the page with the embedded video is here <http://www.broads-authority.gov.uk/looking-after/managing-land-and-water/dredging> .
- 1.4 The sediment lagoons at Hickling where the previous winter's mudpumping occurred have now dried out. The Environmental Permit to allow the

spreading and the supporting areable benefit statement are being prepared with the landowner. Spreading is expected in the early autumn.

- 1.5 Planning consent has now been approved for the CANAPE funded dredging and reedswamp creation project at Hickling Broad. The plant mobilisation, site preparation and installation of the geotextile tubes will occupy members of staff from the Construction Team for up to four weeks in September and early October.
- 1.6 Upstream of the right hand span (true right) of Breydon Bridge, the regular sand bar that develops has proved to be too compact for the hired plough dredging work to be effective. The Authority's "Urgent Boating News" web page has been updated to explain the need for deeper drafted hulls to use the middle span around low water. The "Navigation Notes" webpages will also be updated. The mechanical dredging required at this location will take place in March 2019 when the Authority's equipment is next passing. Rangers will regularly monitor the location to assess if the situation gets any worse.
- 1.7 The detailed annual breakdown of Waterways Specification compliance across the Broads will be brought to the next Navigation Committee in October 2018.
- 1.8 A review of the currently active Sediment Management Strategy (2007) is due in 2019/20. The methods by which the Authority carries out its dredging operations has changed considerably since 2007, as have the types of sediment re-use options available. A draft scope and timeline for the development and delivery of this review is anticipated by December 2018. In this financial year (2018/19) officers are reviewing the Integrated Access Strategy and the Biodiversity & Water Strategy.

2 Plant and Equipment

- 2.1 The Broads Authority has now purchased its own concrete pump, with financial support from the CANAPE project. The pump's first deployment is to the rond at Runham where dredgings from the Lower Bure are being placed to strengthen the floodbank. After this task, it will be moved round to Hickling for the start of the CANAPE funded project. The continued dredging on the Lower Bure through Great Yarmouth will be off-loaded by excavator and used to fill a setback area at Six Mile House on the Bure.
- 2.2 As part of the longer term equipment replacement plan, a new yard crane capable of lifting the workboats, tugs and smaller wherries for repairs and maintenance has been delivered to the Dockyard.
- 2.3 To facilitate the mechanisation of the Authority's annual riverside tree management work, a 13 tonne excavator and additional NATO pontoon floats have been purchased and delivered. The final element to buy is the hydraulic tree shear attachment. The first usage of this kit will be on the River Ant later this month.

- 2.4 The old Miller weedharvester was decommissioned as a cutting vessel a few years ago. The hull, engine and cabin have been fully overhauled, so the vessel is now fit for duty as an all-round utility work boat. Its first task will be supporting the project at Hickling Broad over this autumn and winter.

3 24 hour moorings

- 3.1 To avoid disruption during the busy summer visitor season only smaller scale reactive repair works are programmed. Maintenance team staff have been making emergency repairs at 24 hour moorings including Cantley, Horning Marshes, St Benets and Acle Bridge. Gauge boards have also been replaced at Ludham Bridge.

4 Water plant management

- 4.1 The rotation of weed harvesting in the channels has continued. The contract with Norfolk County Council to cut plant growth in Whitlingham Great Broad has also been completed again this year.
- 4.2 Low water levels and high temperatures have led to the seasonal hazard of low dissolved oxygen. Fish are the main concern as they can succumb to low oxygen levels relatively quickly, especially if trapped in dykes where death of large numbers can happen in a short space of time. Regular monitoring of dissolved oxygen through the day, by the staff operating the weed harvesters ensure the Authority's work does not negatively impact fish. In the open water of the larger river and broads this is not usually an issue. However work at Catfield Dyke, Waxham Dyke and Somerton Dyke has been delayed or deferred during August, at periods when dissolved oxygen levels have been below the Environment Agency safe working thresholds that the Authority has fully adopted.
- 4.3 The second hydroacoustic survey (mid-July) has now taken place, focusing on the area of Chara plants that was initially cut last year. The results of this survey show that there have been increases in plant cover and volume within the trial area since May. However, the plant height has not reached the necessary threshold above the bed of the broad to enable repeat cutting. This means that a further experimental cut of the Chara bed will not take place this year, as the plants didn't grow tall enough in the experimental plots to actually cut. The detailed monitoring will continue as planned, so that information on the response of the plants to the initial cutting can be tracked. Based on the on-going monitoring plan and consent from Natural England, cutting can potentially take place again next year, if the plants grow to the required height.
- 4.4 The overall distribution of water plants throughout Hickling has changed from last year. The plants seem to have spread over a wider area, but not reached the same heights over most of the Broad, as they did last season. Casual observation of water clarity over the late spring and summer has been that visibility has been poorer this season. The review of water quality monitoring data produced each winter for Hickling Broad as part of the experimental cutting trial will give more detail.

Background papers: Sediment Management Strategy (2007) <http://www.broads-authority.gov.uk/looking-after/managing-land-and-water/conservation-publications-and-reports/water-conservation-reports>

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Appendices: APPENDIX 1 – Dredging Progress 2018/19

APPENDIX 1

Dredging Progress 2018/19 (April 2018 to end July 2018)

Project Title	Project Element	Active BA dredging weeks Completed (to end Jan / Planned)	Volume Removed m ³		Annual project Cost ^a	Actual project cost (Apr-Jul)
			Planned	Actual	Planned	Actual
Lower Bure	a) Three Mile House to Marina Quays (Apr-Aug) b) Marina Quays to Yacht Station (Sep-Nov)	17 / 32	14,000	8,180	£184,400	£163,070
<i>Three Mile to Marina Quays completed</i>						
Mid Bure	a) Horning to Thurne Mouth (May-Jul) b) Oby to Acle Bridge (Nov-March)	12 / 33	18,000	7,110	£190,450	£91,110
<i>Set back area at Horning Hall has been utilized to current capacity</i>						
Breydon Water	Bar upstream of Breydon Bridge (March 2019)	1 / 1	500	0	£1,300	0
<i>Mechanical dredging with excavator is required</i>						
Hickling Broad	Mudpumping marked channel in North Bay (Oct-Feb)	0 / 16	5,500	0	£148,850	£3,480
<i>CANAPE funded project</i>						
Lower Bure	Plough dredge (Jan-Mar)	Contractor	2,000	0	£9,500	0
<i>Downstream of the Yacht Station is priority</i>						
Site restoration	Rockland, Hickling, Stokesby	-	-	-	£42,590	£28,840
<i>Restoration of dredge sites from work in 2017/18.</i>						
TOTAL		30 / 82	40,000	15,290	£577,090	£286,500

^a –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.