

Navigation Committee

20 October 2022

Agenda item number 11

Construction Maintenance Ecology work programme progress update

Report by Head of Construction, Maintenance & Ecology, and Ecology & Design Supervisor

Purpose

To give an update on the Broads Authority's management activities to maintain public navigation, develop mooring facilities for public use and demonstrate the effective use of available resources in managing the Broads waterways. Members' views are requested at 1.7 on a proposal to manage boat-accessible channels within the Broads Authority Executive Area, but for which there is no statutory obligation for the Authority to maintain.

Broads Plan context

The activity of the Construction, Maintenance and Ecology (CME) section contributes to multiple objectives, in particular to Aspirations 3, 4 and 6 to manage sediment sustainably, maintain a safe open navigation, and maintain the access network and visitor facilities.

Contents

1.	Maintaining water depths for navigation	1
2.	Maintaining safe public mooring facilities	3
3.	Our resources	3
4.	Water plant management	4
5.	Navigational safety	4
6.	Future working arrangements	5

1. Maintaining water depths for navigation

- 1.1. The detailed breakdown in Appendix 1 gives progress and volumes for the dredging programme for 2022/23 to the end of August (April to end August 2022). A total of 11,630 m³ of dredged sediment was removed from the prioritised sites. This figure represents 39% of the programmed target of 29,750 m³ for the year.

- 1.2. This summer saw dredging in and around Sutton Broad including its connecting channels to the River Ant. Sediment from this site was transported to a low section of riverbank upstream of Hunsett Mill, to assist the landowner and the Internal Drainage Board reduce leakage through the bank.
- 1.3. This year's campaign of dredging at Oulton Broad was delayed from its planned start date in May and then had subsequent mechanical issues with the concrete pump. The pump is critical for getting the sediment from wherries and transferring it over the floodbank. Since then, dredging has continued at pace, with the additional completion of a new cross wall constructed to the same height as the existing perimeter flood banks, which together forms a triangular lagoon that will retain all the sediment for the remainder of the dredge requirements in Oulton Broad. An update to the Notice to Mariners will be issued to indicate the extension of the dredging activity through until September 2023.
- 1.4. The continuation of dredging at Oulton Broad, is as a response to the ongoing challenges for securing a sediment storage and landspreading location in the Upper Bure, between Wroxham and Coltishall. The preferred site option for re-using the dredgings for agricultural benefit requires further local engagement, additional impact assessments and detailed storage lagoon designs to be completed, prior to re-submission for planning consent.
- 1.5. The dredging requirement to maintain passage along Geldeston Dyke, was previously highlighted in this report at the October 2021 Navigation Committee. This channel connects the River Waveney to the basins used for moorings and slipway at Geldeston. The currently marked limit of navigation, as defined by the boundaries inherited from the Great Yarmouth Port and Haven Commissioners, places the Authority's direct maintenance and byelaw responsibility half way along the dyke from the river (grid reference TM 39095 91327). This leaves approximately 300 metres of the length of the dyke as an unregistered area, with no party clearly identified for maintenance responsibility. Several users of the moorings at the Geldeston end of the dyke had reported to the Authority difficulties in navigating this stretch at low water conditions.
- 1.6. The calculated volume for dredging requirement to achieve a 1.5 metre Waterways Specifications depth along the unregistered section Geldeston Dyke is 1,200 m³. The nearest available area for sediment disposal and possible re-use is the Authority's parcel of land on the adjacent Geldeston Marsh. There are no immediate plans to return to the upper Waveney for more dredging, as a recent campaign was carried out in 2021. If a specific mobilisation and deployment to carry out this task by the Broads Authority Construction team were a priority, then the expected total project cost would be in the region of £30,000 - £35,000.
- 1.7. Views are sought from the Navigation Committee on the principle of the Authority choosing to maintain stretches of boat-accessible channels within the Broads Authority Executive Area, but for which there is no statutory obligation for the Authority to maintain. There are other similar locations, of blind-ended boat dykes in the Broads,

which have private landownership (single or multiple parties) and/or occupied by private moorings, including Hardley Dyke, Martham Dyke and Oby Dyke. Crucially these types of boat dyke have no free public access to the water, either via a public staithe or short term visitor moorings, which puts them low down in the priority criteria for Broads Authority intervention, if inclusion in the prioritisation is valid at all. Options for consideration with these types of location are:-

- Do nothing – have no stated Waterways Specification depth, do not carry out hydrographic surveys, and have no responsibility for dredging
- Monitor – have a stated Waterways Specification depth, carry out hydrographic surveys, but allocate a very low priority status which in all likelihood would mean locations never realistically getting onto the Authority’s actual dredging plans.
- Monitor and work in partnership - have a stated Waterways Specification depth, carry out hydrographic surveys and assist landowners to find a funding mechanism to enhance public access and deal with the practicalities of maintenance dredging
- Fully adopt – have a stated Waterways Specification depth, carry out hydrographic surveys, report on water depth compliance and integrate the location into the Authority’s forward dredging programme.

2. Maintaining safe public mooring facilities

- 2.1. The top priority for replacing vertical steel piles across all of the Authority’s mooring locations is an 80-metre section at Neatishead 24-hour mooring. The inner half of the mooring has experienced the progressive movement of the piles and slippages of the often saturated land behind. The aged and now misaligned piles will be replaced with 6.5 meter-long steel cantilever piles, with additional sub-surface drainage installed behind and through the sheets. An invitation to tender is to be opened in mid-October for work to start in early 2023.
- 2.2. A new canoe launch point has been installed at Geldeston 24-hour moorings. This floating pontoon allows canoers safe access and egress at all states of the tide, with the ability remove canoes from the water and free up mooring spaces.

3. Our resources

- 3.1. To ensure value for money on bulk diesel fuel purchasing, a new procurement arrangement has been entered into with a supplier via the Crown Commercial Services fuel framework. Both white and red hydrotreated vegetable oil (HVO) can now be sourced from one supplier in bulk tanker deliveries. This route will be primarily used for plant and vessels, but options to use bulk storage for fuelling road vehicles is also a possibility that needs to be trialled. Use of HVO in the remaining road fleet of internal combustion engines would further drive down the Authority’s carbon footprint.
- 3.2. This autumn and new academic year sees the return of apprentices to the maintenance team. Following a two year hiatus due to COVID, three candidates are now enrolled on

the “Countryside Worker” standard. Suffolk New College are the educational provider we have partnered with. The apprentices have 12 months to learn a range of practical skills, prove themselves in the world of work and gain valuable experience of waterways and conservation management in the Broads.

4. Water plant management

- 4.1. This season has seen some of the most intense growth and abundance of plant material for many years. Some of this is due to the lower than average water levels in the upper river reaches due to low rainfall over the summer. Additionally, the water clarity of the rivers entering the Broads has been exceptionally good, which has also stimulated a lot of water plant growth. For example, the water clarity on the River Bure over recent years has been clear during the summer, with much of the bed visible near Belaugh, often as far downstream as Hoveton Viaduct. This summer however, the clear water extended as far downstream as the entrance to Wroxham Broad, with water plants and fish easily visible under the surface.
- 4.2. As water plants become more established further along the rivers, this in turn helps stabilise sediments and removes nutrients from the water that microscopic algae would otherwise make use of. This sets up a positive feedback loop which reduces turbidity and maintains clear water for further plant growth. One outcome of this environmental improvement, is that it has taken more work time in cutting to achieve the expected level of accessibility in the rivers and channels. More volume of plant material means cutting on individual stretches of river has taken longer, and more material to dispose of means new offloading points are required. There have also been extensions to the areas managed particularly on the River Yare, with the addition of the marked channel through Rockland Broad and the dykes and channel through Bargate Broad, now being included in the annual cutting programme.

5. Navigational safety

- 5.1. As highlighted in the April 2022 Navigation Committee minutes, the need for replacement of the failing wooden channel marker posts in Barton Broad was a priority task for this season. This work was completed in September: 13 red markers, 16 green markers and 3 cardinal markers were installed. Of these installations, all but two were replacing a wooden for a steel post. Where two buoys have been replaced, the buoys were originally deployed as stop-gap features following loss of the original marker post.
- 5.2. The Authority had engaged a local contractor for a five year contract to replace the large channel marker posts across Breydon Water. The contractor has however now stopped trading, the company’s assets have been sold off and crucially the workboat suitable for this work in Breydon Water is no longer available for work in the UK. This means that the planned replacement of 16 failing wooden or missing marker posts in Breydon Water this financial year is now not possible. A re-evaluation of the Authority’s most cost effective route to ensuring this critical safety work is completed is now

underway. Options include re-tendering (which has a high budget cost) or hiring in additional equipment and completing the work in 2023/24 using in-house plant, vessels and expertise. The latter option has a moderate budget cost, but with a negative impact on the amount of time for dredging work, which would use the same internal staff and plant resources. A decision as to the best way forward will be made once the 2023/24 budgets are confirmed.

- 5.3. Development of a systematic marker post-condition inspection regime, review of channel marker requirements and an asset replacement prioritisation process is underway. This will involve a cycle of structural inspections with the information assessed, so that the hundreds of marker posts the Authority is responsible for, are prioritised for replacement, re-positioning, removal or even adding more where needed.
- 5.4. The structural assessment, digital data gathering methodology and field trial is due for completion by March 2023. Going forward this will allow earlier and proactive interventions in the Authority's asset management requirements and will help increase efficiencies.

6. Future working arrangements

- 6.1. The [final version of Waterways Management Strategy & Action Plan 2022-27](#) is now on the Authority's website, in the Strategy section. A Habitats Regulations Assessment has been completed to support the strategy. Both documents have been reviewed by Natural England and assent has been gained for the Waterways Management Strategy as the overarching approach to management of the Broads waterways.
- 6.2. In 2023/24 the Integrated Access Strategy will be refreshed, with an update to the priorities and specific actions for the Authority to enhance public access across land and water. There will also be an opportunity to fully integrate into this strategy the Authority's approach to moorings, such as site selection, spatial distribution, design of moorings, capacity at each mooring, future maintenance costs, ownership and leasing arrangements.
- 6.3. Information on vessel movements and boat type has previously been gained by a four yearly boat census, with numerous volunteers counting vessels at fixed locations over several days in late August. The scope of the review will also include a re-evaluation of previous boat census data and how this can be used to help plan for future investment in moorings and other waterways infrastructure. In order to answer questions about boating behaviours and activity within the Broads, it may mean that different data sources and the means of gathering such data may need to be considered. More information on the scope, timeline and stakeholder engagement process for the review of the Integrated Access Strategy will be communicated in due course.

Author: Dan Hoare, Sue Stephenson

Date of report: 03 October 2022

Background papers: [Waterways Management Strategy and Action Plan 2022/23 - 2026/27 \(broads-authority.gov.uk\)](#)

[Broads Plan](#) strategic actions: 2.1; 2.3; 3.1; 3.2; 4.2; 6.1

Appendix 1 – Dredging figures 2022-23 (April 2021 to end August 2022)

Appendix 1 –Dredging figures 2022-23 (April 2022 to end August 2022)

Project title Dredge site and sediment re-use location	Active Broads Authority dredging weeks completed/ planned	Planned volume removed m³	Actual volume removed m³	Planned annual project cost ¹	Actual project cost
River Ant Sutton Broad to u/s Hunsett Mill (May-Jul)	9/20	12,000	6,200	120,090	68,790
COMPLETE – delayed start owing to consenting issues; early completion in order to install marker posts in Barton Broad					
River Waveney Oulton Broad to Peto’s Marsh (May - Mar)	9/21	10,000	5,430	50,780	71,640
ONGOING – delays owing to pump breakdowns; extended to end March 2023; revised planned volume of 17,500m ³ ;					
River Bure Malthouse Broad to Ant mouth setbacks (Oct-Feb)	0/9	6,750	0	98,390	180
Replacement project for Upper Bure					
River Bure Plough dredging Lower Bure (Mar)	Contractor	1,000	0	5,000	0
Site Restoration Beccles, Raveningham, Hardley Flood	-	-	-	13,020	16,680
Future site preparation Survey, mitigation & set-up	-	-	-	9,960	7,060

¹ project costs include 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.

Project title Dredge site and sediment re-use location	Active Broads Authority dredging weeks completed/ planned	Planned volume removed m³	Actual volume removed m³	Planned annual project cost ¹	Actual project cost
Dredging support activities Maintenance of ancillary dredging kit, etc	-	-	-	-	27,300
Total	18/50	29,750	11,630	297,240	191,650