

# Navigation Committee

06 November 2025

Agenda item number 8

## Construction, Maintenance and Ecology work programme - progress update

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

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### Purpose

To provide the Committee with an update on the 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.

### Broads Plan context

C1: Maintain navigation water depths to defined specifications, reduce sediment input, and dispose of dredged material in sustainable and beneficial ways.

C2: Maintain existing navigation water space and develop appropriate opportunities to extend access for various types of craft.

C3: Manage water plants, riverside trees and scrub, and seek resources to increase operational targets.

C4: Maintain and improve safety and security standards and user behaviour on the waterways.

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# 1. Introduction

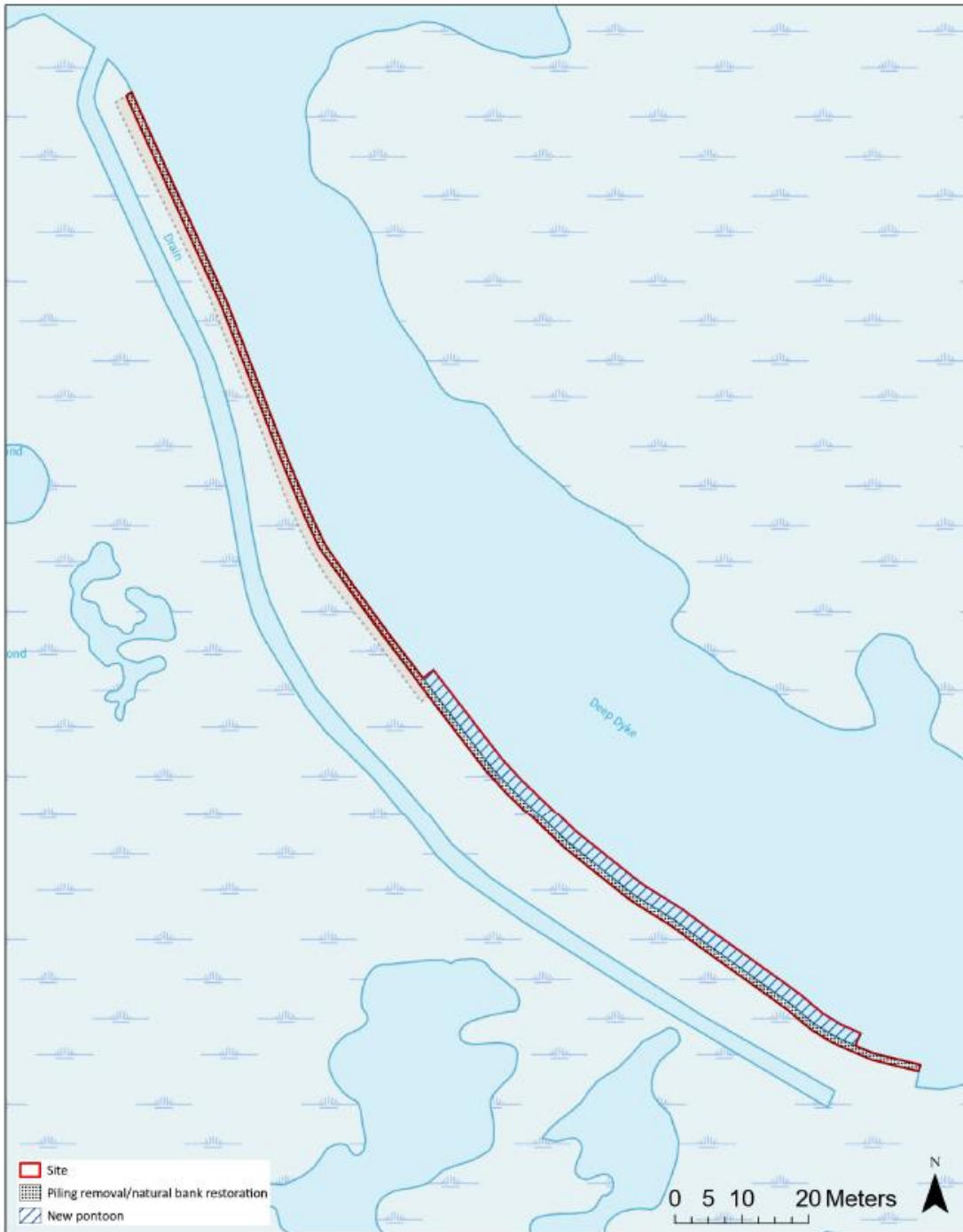
- 1.1. The detailed breakdown in Appendix 1 gives the figures and volumes for the current dredging programme for 2025/26 (April 2025 to end September 2025). A total of 6,600 m<sup>3</sup> of dredged sediment has been removed from the prioritised sites. This figure represents 24% of the programmed target of 27,380 m<sup>3</sup> for the year.
- 1.2. Dredging work is due to start in the Upper Thurne before the end of October. Dredging locations include the marked channel of Hickling Broad from the approach to Catfield Dyke heading towards Hickling village; River Thurne between Martham Ferry and Somerton Dyke; Martham Dyke; and shoals near the Candle Dyke/River Thurne junction. An operational pause is currently in place to protect fish from multiple stresses, following the salt surges that penetrated up the Broadland rivers in the first week of October following Storm Amy.
- 1.3. The Environment Agency (EA) Fisheries Team have been completing fish rescues and responding to reports of fish mortalities in the Rivers Bure, Thurne and Ant since 5<sup>th</sup> October because of this saline incursion. The EA have rescued approximately 77,000 fish, which have been relocated to Hickling Broad, where salinity levels were significantly lower than the rescue site at Womack Staithe.
- 1.4. Hickling has always been a suitable relocation site for the EA to release fish, but high salinity levels are still being recorded at Hickling. Before the surge in early October, salinity levels (measured as electrical conductivity) were around 7,000 µS/cm on Hickling Broad (a typical value for this brackish-water site). During the surge, conductivity peaked at 16,617 µS/cm, and by 21<sup>st</sup> October, levels were still at 12,300 µS/cm. For comparison, seawater has a conductivity of around 53,000 µS/cm. Furthermore, salinity levels remain generally high and unchanged at other sites, such as Martham Ferry. On 12<sup>th</sup> October, levels were around 12,500 µS/cm, but were still recorded at 11,000 µS/cm on 21<sup>st</sup> October.
- 1.5. As per the Broads Authority's environmental safeguarding plan for the Upper Thurne dredging, an upper salinity threshold of 8,400 µS/cm is in place. Broads Authority staff continue to monitor this situation closely, so that dredging can start once the salinity declines below this threshold and conditions are more favourable for fish.

# 2. Maintaining safe public mooring facilities

- 2.1. The three 24-hour moorings between Heigham Sound and Hickling Broad (Whiteslea, Deep Dyke, and Deep Go Dyke) are under review. The steel piling at these sites is very close to where it no longer meets safety and structural standards for public 24-hour moorings. The piling at Deep Dyke is the worst performing of all the Authority's 24-hour moorings. The three moorings are owned by the Norfolk Wildlife Trust and are leased to the Broads Authority for public use, with the Authority responsible for the steel sheet piling and quay heading. Figure 1 shows that the planned location of pontoons at the Deep Dyke moorings is focused on the channel's widest parts at the southern end.

2.2. Figure 1 – Proposed location for pontoon moorings (blue hatching) at Deep Dyke.

Site plan A  
Scale: 1:500

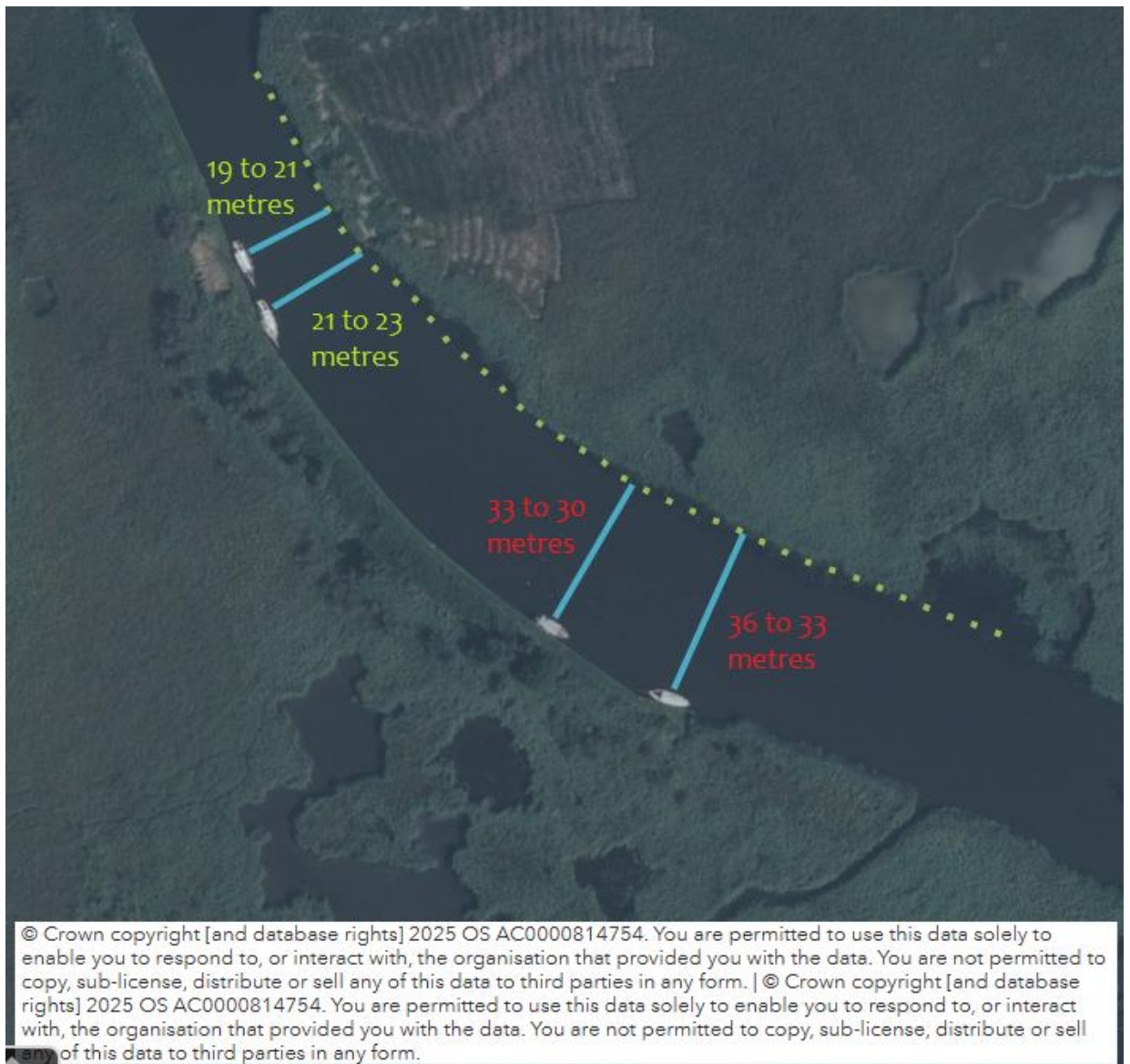


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2.3. Replacing the vertical piling like-for-like is very expensive. Adapting mooring designs to be resilient to climate change and rising water levels was reported to the Navigation Committee on 5 September 2024 [Future proofing Broads Authority public moorings](#). Adaptations such as higher capping levels and longer piles driven into the soft peat soils adds more cost and complexity. A more cost-effective alternative is to install floating

pontoons, which are cheaper per linear metre to install, need less maintenance, and stay at a constant height to the water (freeboard), making them safer for users in all conditions. The subsequent minutes of the 5 September 2024 meeting, [Minutes of the Navigation Committee held on 5 September 2025](#), summarised that “A discussion was had on mooring design options and the common agreement was support for pontoon moorings, where the width of the river allowed.”

- 2.4. Looking across the suite of Broads Authority 24-hour moorings, maintaining the structural condition at over 60 locations requires continuous maintenance and improvement. Section 8.3 of the Authority’s [Safety Management System](#) sets out the safety requirements and risk management approach of the provision of public moorings, as per the Port Marine & Facilities Safety Code. Regular structural inspections are conducted to evaluate the overall condition of the vertical piling at each mooring. Those with failing elements which cannot reasonably be maintained are prioritised for review of the mooring need and how best the Authority can continue providing mooring facilities. At the top of this review list (as previously reported at the 5 September 2024 meeting), locations where alternative mooring designs, such as pontoons, would not be possible are primarily those with very narrow channels (less than 18 metres).
- 2.5. To support long-term planning and ensure toll income is spent efficiently, it's essential to maintain existing infrastructure to a high standard, phase replacements strategically, and choose mooring designs that offer a balance between cost, service quality, and resilience to rising water levels. In this context, options like pontoons are becoming increasingly viable. The Authority cannot afford to replace all existing steel piled moorings on a like-for-like basis without severely impacting other waterways management responsibilities.
- 2.6. Figure 2 shows that the current effective channel width with vessels moored at Deep Dyke is between 19 and 36 m. In the section proposed for the addition of pontoons, this would result in a narrowing of roughly 3 metres (red values). In the narrowest parts of the channel, with no planned pontoons and removal of the steel piling, sailing vessels will have up to two metres additional space in which to manoeuvre (green values).
- 2.7. At Deep Go Dyke, the exact measurements are 26-27 metres, currently changing to 23-24 metres effective channel width with pontoons in place. At the smallest of the three moorings, Whiteslea, the effective channel width would change from 23 metres currently to 20 metres with a pontoon.
- 2.8. Figure 2. Diagram of example channel widths (pre and post pontoon installation) with vessels moored at Deep Dyke.



- 2.9. When considering replacement moorings at these three sites in the Upper Thurne, the decision involves balancing three key factors: overall affordability across the Authority’s wider mooring commitments; ensuring the new provision meets current demand in the area; and mitigating the minor navigational impacts of pontoons by widening the usable channel in nearby narrower sections.

### 3. Channel markers

- 3.1. Removal of the defunct and failing timber structure at the end of Turntide Jetty is planned by the end of March 2026. Once the timbers are removed, including the orange posts that currently mark the hazard, temporary channel marker buoys will be installed. This will maintain the visual run of marks either side of the yellow post at the junction of the rivers Yare and Waveney.

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Date of report: 21 October 2025

Background papers: [Future proofing Broads Authority public moorings](#); [Minutes of the Navigation Committee held on 5 September 2025](#); [Safety Management System](#)

[Broads Plan](#) strategic objectives: C1, C2, C3, C4

Appendix 1 – Annual dredging progress 2025/26 (to end September 2025)

Appendix 2 - Operational staff time spent on all work types 2025/26 (to end September 2025)

## Appendix 1 – Annual dredging progress 2025/26 (to end September 2025)

<b>Project title Dredge site and sediment re-use location</b>	<b>Active Broads Authority dredging weeks completed/ planned</b>	<b>Planned volume removed m<sup>3</sup></b>	<b>Actual volume removed m<sup>3</sup></b>	<b>Planned annual project cost<sup>1</sup></b>	<b>Actual project cost</b>
<b>River Yare</b> Bargate Broad	8/8	2,400	1,800	£56,260	£54,730
<i>Postwick Marshes re-use site – started in 2024/25, completed in 2025/26</i>					
<b>River Yare</b> Postwick Viaduct to Trowse Swing Bridge	10/9	6,480	4,630	£74,880	£57,110
<i>Postwick Marshes re-use site - complete</i>					
<b>River Yare</b> Hardley Dyke	-	-	170	-	-
<b>River Thurne</b>					
Hickling channel	0/8	6,000	0	£175,420	£2,500
Martham & Somerton Boat Dykes	0/4	1,300	0		
Somerton to Candle Dyke	0/10	6,200	0		
<i>Hickling channel (Chara Bay re-use site) – October to November Martham &amp; Somerton Boat Dykes (sidecast) – November Somerton to Candle Dyke (Chara Bay re-use site) – December to February</i>					
<b>River Bure</b> Wroxham Broad	0/5	3,000	0	£33,940	£2,580
<i>Wroxham Island – February to March</i>					
<b>River Bure</b> Lower reaches	0/4	5,000	0	£35,270	£820
<i>Cutter suction head dredging on ebb tide – January to February</i>					
<b>River Bure</b> Mid-Bure	-	-	-	£3,000	0
<i>Lagoon preparation costs</i>					
<b>Site restoration</b>	-	-	-	-	£12,420

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<b>Future site preparation Survey, mitigation &amp; set- up</b>	-	-	-	-	£1,980
<b>Dredging support activities</b>	-	-	-	-	£17,670
<b>Total</b>	<b>21/45</b>	<b>27,380</b>	<b>6,600</b>	<b>£378,770</b>	<b>£149,810</b>

## Appendix 2 – Operational staff time spent on all work types 2025/26 (update to end September 2025)

<b>Work type</b>	<b>Planned - Days</b>	<b>Planned - % of annual total days</b>	<b>Actual - Days</b>	<b>Actual - % completed</b>
<b>Navigation (60%)</b>	<b>2,664</b>	<b>60</b>	<b>1,059</b>	<b>24</b>
Italics are proportion within Navigation				
Dredging	1068	40	491	18
Mooring maintenance & repairs	687	26	268	10
Riverside tree management	50	2	7	-
Water plant cutting	225	8	198	7
Other navigation works <sup>1</sup>	184	7	119	5
Corporate allocation <sup>2</sup>	450	17	281	11
<b>Recreation (10%)<sup>3</sup></b>	<b>444</b>	<b>10</b>	<b>147</b>	<b>3</b>
<b>Conservation (30%)<sup>4</sup></b>	<b>1,332</b>	<b>30</b>	<b>620</b>	<b>14</b>
<b>Total</b>	<b>4,440</b>	<b>100</b>	<b>2,131</b>	<b>48</b>

1 – includes raising & disposal of wrecks, channel markers & buoys, gaugeboards & signage

2 – includes premises & equipment maintenance, training, sickness & gaps in recruitment.

3 - National Park funded work to facilitate public access and visitor services.

4 – National Park funded work to carry out priority fen management and other biodiversity restoration projects