

Navigation Committee

02 September 2021

Agenda item number 8

Waterways Management Strategy and Action Plan 2022/23 to 2026/27 (consultation draft)

Report by Head of Construction, Maintenance & Ecology

Purpose

This report seeks the views of the Navigation Committee on the draft Waterways Management Strategy and Action Plan 2022/23 to 2026/27. The strategy provides a framework for the integrated, sustainable and cost-effective management of the navigable waterways in the Broads Authority Executive Area, drawing together all the objectives and management techniques used to manage navigational access in the area. A set of key issues are presented for comment, focussing on some of the technical detail that will shape future prioritisation methods, scope of works and reporting processes.

Broads Plan context

The Waterways Management Strategy will contribute to multiple objectives, in particular those under Aspirations 3, 4 and 6 to manage sediment sustainably, maintain a safe open navigation, and maintain the access network and visitor facilities.

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1. Introduction

- 1.1. The publicly accessible rivers, broads and channels within the Broads Authority Executive Area form the geographic extent of the Waterways Management Strategy for activities carried out by the Broads Authority. The character and use of the different parts of these publicly accessible waterways varies considerably. This means that a fixed management approach would not give the best outcome for recreational users or for environmental considerations, or allow efficient deployment of Authority resources. The finite level of staffing and budgets available each year for managing the waterways means that a clear prioritisation process of works is critical.
- 1.2. The vision in the Broads Plan (2017) relating to navigation within the Broads waterways is that: “The past and present importance of the waterways for navigation, biodiversity and recreation is recognised and cherished, and the asset is protected, maintained and enhanced. Wildlife flourishes and habitats are maintained, restored, expanded and linked effectively to other ecological networks. Land and water are managed in an integrated way, with local and landscape scale management creating resilience and enabling flexible approaches to meet changing environmental, economic and social needs.”
- 1.3. To work towards this vision, three overarching aims are proposed for the Waterways Management Strategy:
 - User experience: The Broads Authority shall manage the navigation area so that users feel informed and safe, have an enjoyable experience and are able to appreciate the special qualities of the Broads environment.
 - Integrated management: The actions carried out by the Broads Authority shall be targeted so that resource use is efficient, to have biodiversity protection and carbon reduction is embedded throughout and, through working with landowners and other statutory bodies, to ensure works are carried out according to best practice.
 - Transparency: The Authority shall monitor the condition of the waterways, have a clear, evidence-based prioritisation process for arranging work programmes and have open communication with stakeholders to incorporate user feedback. A 5-year plan shall be produced, with regular progress reported.
- 1.4. The [draft Waterways Management Strategy](#) has sections covering:
 - Developments in legislation and policy
 - Principles of waterways management
 - Detailed objectives for the different techniques of waterways management (sediment management, water plant management, riverside tree management, bankside habitat & erosion management and channel marking)
 - Reporting and communicating progress

- Technical appendices

2. Consultation

- 2.1. Five key areas are presented for targeted consultation, as set out below.

Update of mean low water level – the sediment modelling baseline

- 2.2. As water levels vary daily and seasonally, a modelled water level that can be used as a standard reference is required when setting a target water depth in the rivers and broads. Waterways specification depths are presented in the map in Appendix 1 of this report. To ensure that the specification depth is present at most states of tide, the reference water level is taken as the average level at low water (or mean low water). Data from river level gauges operated by the Environment Agency has been used to calculate mean low water level at 18 stations across the navigable system. The values for mean low water level have been updated from those previously used, which were based on data available in 1993. The difference between the two baselines is that the new model baseline is an average of 11.8 cm higher than previous. Sediment volumes causing non-compliance with the waterway specification depths have been subsequently recalculated. Across all the navigable broads and rivers, the greater accuracy of the mean low water level model at the new, slightly higher levels has reduced the total sediment volume identified as requiring dredging from 1,010,000 m³ to 815,430m³.

Revision of waterways specifications inside and outside marked channels

- 2.3. To aid the reporting of compliance against waterways specification targets, the navigation area has been broken down into Management Units. These are definable stretches of river, individual broads, or marked channels within broads, where there is some level of uniformity of usage or general physical character. To help clarify the waterways specifications in waterbodies with marked channels, Appendix 2 shows where there are examples of two specifications, both within and outside of a marked channel. Significant volumes of sediment not meeting current waterways specifications can be found outside the marked channels, for example in Hickling Broad (191,550 m³) and Rockland Broad (103,260 m³). These two management units contribute 36% of the total identified dredging requirement for the whole of the Broads navigation. Separation of management units helps focus priorities. Many of these proposed changes are to regularise existing, but undocumented management specifications and to bring similar sites into a more consistent management approach.

Revision to Breydon-Lower Yare commercial waterways specification

- 2.4. A managed channel depth of 4m (below mean low water) has previously been reported for Breydon Water to Cantley. As commercial freight is not presently using this route, it is proposed to report on dredging requirements to meet a 2m waterway specification. Breydon Water has regular transit of smaller in-shore commercial fishing, harbour pilot and windfarm support vessels drawing less than 2m. If a request was made to the Authority for passage of commercial freight vessels drawing more than 2m, then the

waterways specification and subsequent dredging requirements to facilitate that passage would be evaluated.

Revision of waterways specifications – above and below the water

- 2.5. As well as the depth of water, other dimensions of the physical space in which vessels operate need to be understood and defined. Together these features form the “navigable envelope” and include: width of river (bank to bank); height of water plants growing up from the bed; width of emergent and water plants growing at the river edges; and distance of tree growth out from the river edge and overhanging the water. Scaled diagrams showing the waterways specifications for the various river widths are shown in Appendix 3. Also shown are illustrative examples of waterways specification boundaries for various river edge features such as trees, water plants, 24 hour moorings and channel markers.
- 2.6. As these river channel features are largely driven by natural processes, a considerable variation in any one or all of these features may be observed across the navigation area at any one time. As such, the management required to maintain minimum standards will be rotational over different timescales. For examples, water plant cutting is focussed at high priority locations within the growing season each year (May-September), while priorities for riverside tree management are spread across a 5-year work programme.

Introducing internal carbon pricing

- 2.7. Carbon pricing is a financial tool that aids the shift towards a low-carbon economy by allowing the environmental and social costs of carbon emissions to be quantified. The responsibility of emissions is thus allocated back to the emitter instead of society at large and/or the environment, also known as the ‘polluter pays principle’. Use of internal carbon pricing in the strategic planning and cost-benefit analyses for procurement options such as for fuel, heavy plant and vessels would allow the Authority to financially incentivise selection of low-carbon technologies that may be more expensive than traditional (fossil-fuelled) options. Current Authority procurement guidelines allow for a 10% surcharge for environmentally friendlier purchase options. This shadow price is proposed to be set to £50/tCO₂e to align with net-zero targets and globally reported recommendations.

Table 1

Diesel usage for operational vessels and equipment, financial year 2020/21

Cost of fuel (£)	Volume of fuel (litres)	CO ₂ e emissions (tonnes)	Internal carbon cost (£)	Cost of fuel + internal carbon cost (£)
29,621	65,198	179.8	8,990	38,611

- 2.8. With a shadow carbon price of £50/tonne applied to the figures in Table 1, the carbon cost of diesel emissions from the Construction, Maintenance & Ecology section in

2020/21 alone would have been £8,990. Adding this internal carbon price to the cost of fuel leads to an approximately 30% increase in overall cost of diesel used in vessels and equipment. Therefore, if this internal carbon price is adopted, a sustainable measure to significantly reduce the carbon footprint, such as use of biofuels, would be financially justified if the biofuels cost was less than 30% more than the standard diesel.

3. Feedback

- 3.1. Feedback on the key areas in section 2 is welcomed, along with other general comments on the strategy and action plan. Responses can also be emailed to dan.hoare@broads-authority.gov.uk by the deadline of **Friday 17 September**.

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Date of report: 09 August 2021

Background papers: Draft Waterways Management Strategy and Action Plan 2022/23 to 2026/27 <https://www.broads-authority.gov.uk/about-us/how-we-work/strategy/waterways-management-strategy>

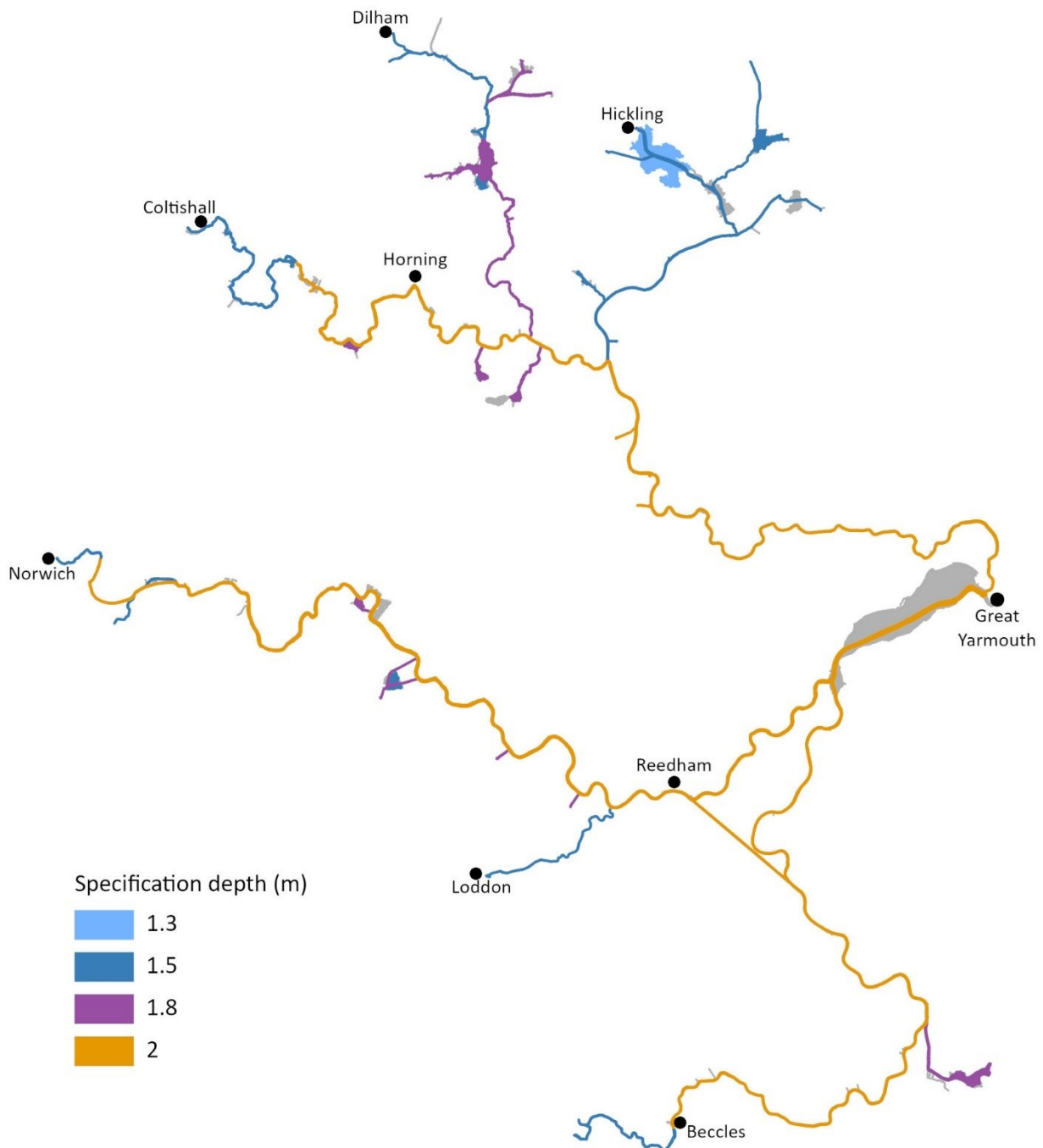
[Broads Plan](#) strategic actions: 2.1; 2.3; 3.1; 3.2; 4.2; 6.1

Appendix 1 – Map of waterways specification depths

Appendix 2 – Waterway specification for inside and outside of marked channels

Appendix 3 – Waterways specification diagrams

Appendix 1 – Map of waterways specification depths



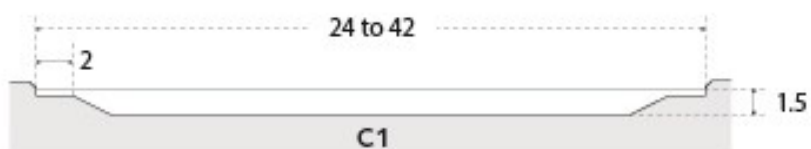
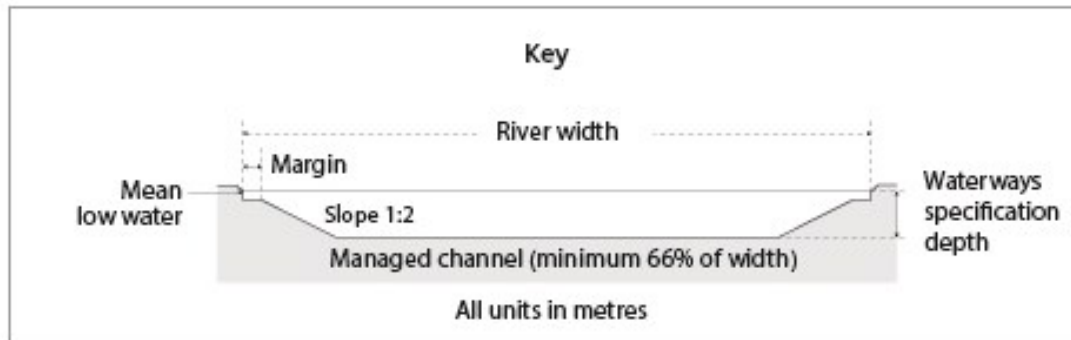
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Appendix 2 – Waterway specification for inside and outside of marked channels

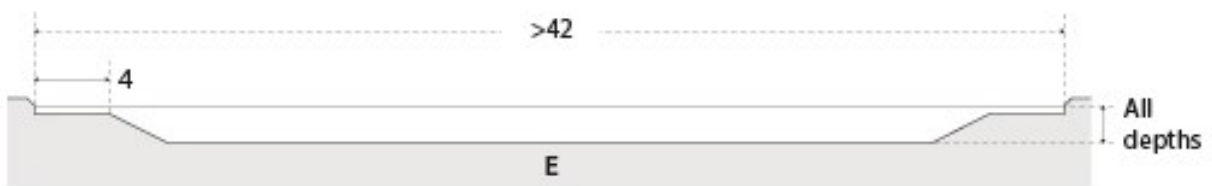
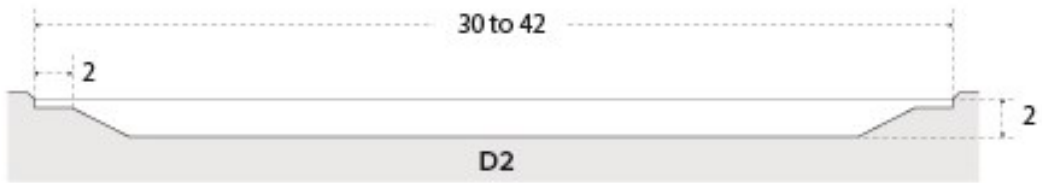
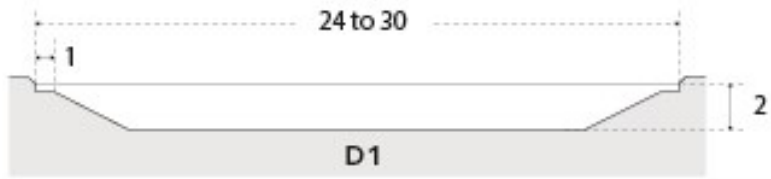
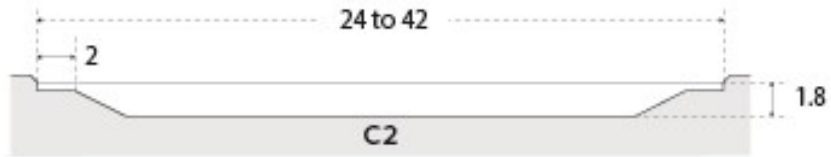
	Marked Channel - (m below MLW)	Outside of Channel - (m below MLW)	Hydrographic survey outside of marked channel	Revision of waterways specifications inside and outside marked channels
Barton Broad	1.8	1.5	17.8 ha = £1,220	Consistently apply the 1.5 m waterway specification outside the channel Report as two separate areas for dredge volumes. Carry out hydrographic survey at least every five years within marked channel and every ten years for outside
Hickling Broad	1.5	1.3	112.0 ha = £7,710	Retain existing waterways specifications. Report as two separate areas for dredge volumes. Carry out hydrographic survey at least every five years within marked channel and every ten years for outside.
Heigham Sound	1.5	No waterways specification set	23.1 ha = £1,590	Retain existing waterways specifications. Propose not to carry out a hydrographic survey outside the marked channel unless a specific project requires it in the future.
Martham North Broad	1.5	No waterways specification set	4.8 ha = £330	Retain existing waterways specifications. Propose not to carry out a hydrographic survey outside the marked channel unless a specific project requires it in the future.
Rockland Broad	1.8	1.5	13.1 ha = £900	Retain existing waterways specifications. Report as two separate areas for dredge volumes. Carry out hydrographic survey at least every five years within marked channel and every ten years for outside

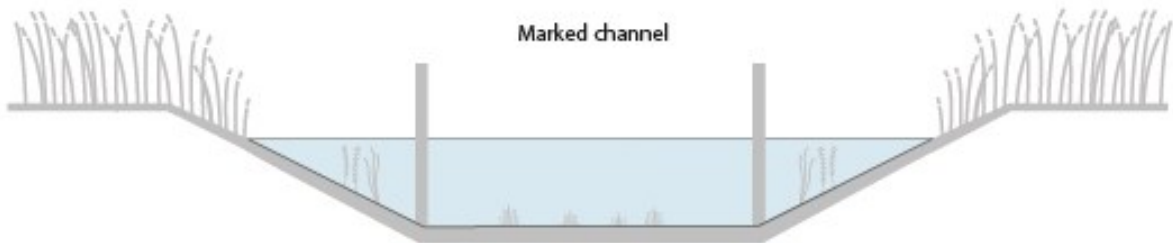
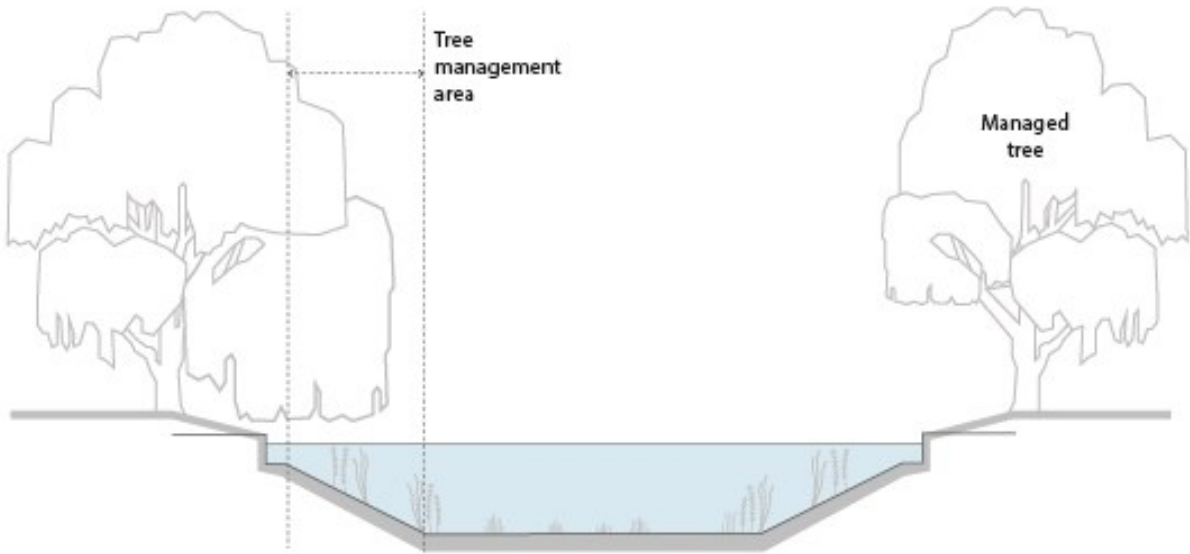
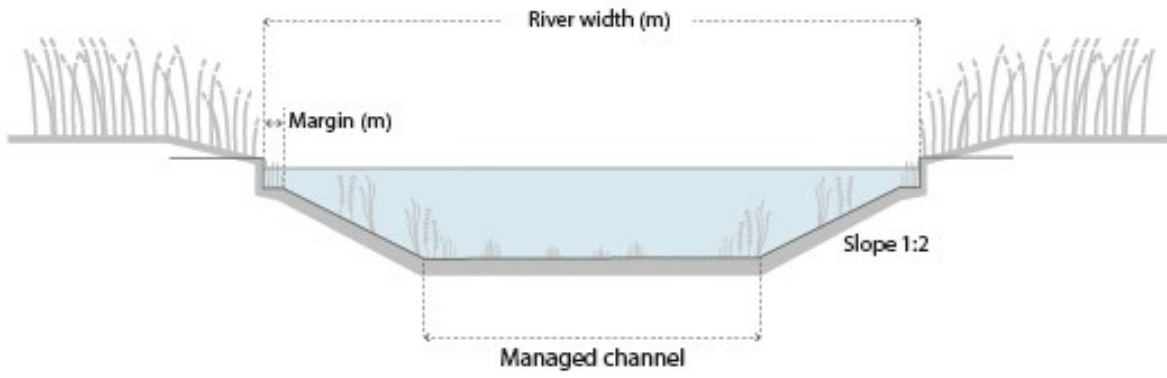
Bargate Broad	1.8	No waterways specification set	3.1 ha = £210	<p>Retain existing waterways specifications.</p> <p>Marker buoys to be placed to indicate the line of the managed channel between the connecting dykes.</p> <p>Propose not to carry out a hydrographic survey outside the marked channel</p>
Breydon Water	2.0	No waterways specification set	460 ha = £30,880	<p>Retain existing waterways specifications.</p> <p>Work with partners to obtain access to existing hydrographic survey data from outside the marked channel.</p>

Appendix 3 – Waterways specification diagrams



Diagrams A to E scaled relative to each other





Diagrams not to scale