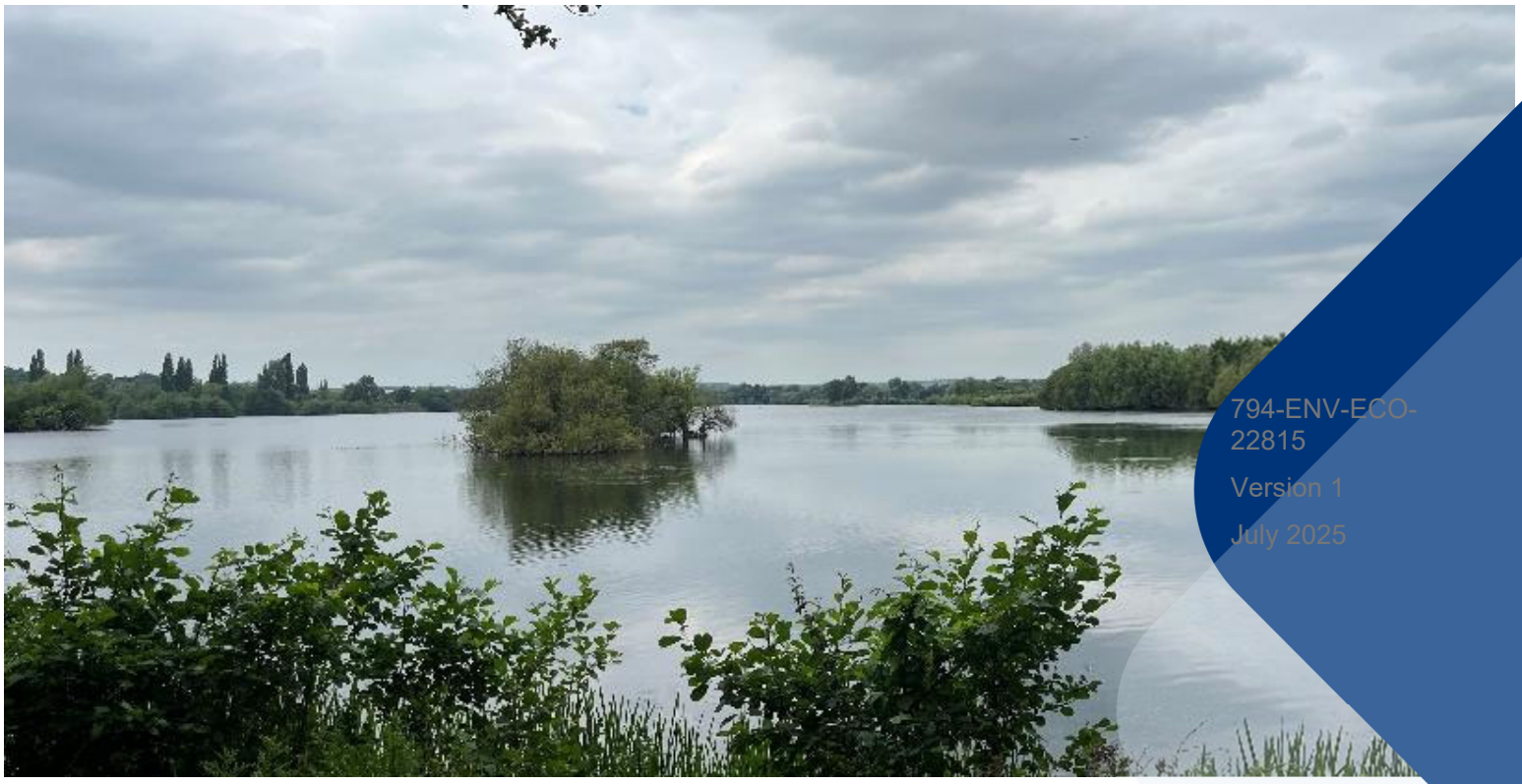
HILLINGDON WATERSPORTS FACILITY AND ACTIVITY CENTRE

Outline Mitigation, Enhancement and Management Plan



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Contents

1 INTRODUCTION 1
1.1 Background 1
1.2 SSSI & Applicant's Statutory Duties 1
1.3 Purpose and Objectives 2
2 RELATIONSHIP WITH OTHER MANAGEMENT PLANS 3
3 HABITAT RESTORATION AND MANAGEMENT 4
3.1 Restoration of Marginal / Fen Habitats 4
3.2 Restoration of Scrub 5
3.3 Restoration of Woodland 6
3.4 Restoration of Open Water 6
3.5 Lake Restoration Strategy (WFD-08) – Commitment and Programme 6
4 MITIGATION MEASURES 7
4.1 Measure 3 – Remodel Island #2 7
4.2 Measure 5 – Sunken willows demarking sailing area 7
4.3 Measure 6 – Remodel Island #6 8
4.4 Measure 7 – Sunken willows between Island #6 and #8 and east of peninsula 8
4.5 Measure 10 – Removal of Island #7 8
4.6 Measure 11 – Installation of reedbeds north of Island #14 8
4.7 Measure 12 – Creation of bird refuge and reduced sailing area 8
4.8 Measure 16 – Expanded and enhanced woodland on peninsula 9
4.9 Measure 22 – Visual disturbance screen 9
4.10 Bat roost on island #8 9
4.11 Disturbance controls 9
5 ENHANCEMENT MEASURES 10
5.1 Measure 1 – Ecological reinstatement of existing BSC site 10
5.2 Measure 2 – North west corner of Broadwater Lake 10
5.3 Measure 4 – Annual vegetation management of Island #3 and #4 11
5.4 Measure 8 – Installation of reedbeds in eastern channel 11
5.5 Measure 9 – Woodland management to the east of Broadwater Lake 11
5.6 Measure 14 – Sensory garden and pond on peninsula 11
5.7 Measure 17 – Gravel bank within eastern channel 11
5.8 Measure 18 and 19 – Habitat creation for breeding birds 12

5.9 Measure 20 – Native orchard planting 12
5.10 Measure 21 – Wildlife pond 12
5.11 Measure 23 – Bird hide and information centre 12
5.12 Other enhancement measures 12
6 MONITORING AND REVIEW 14
6.1 Overview 14
6.2 No Deterioration Water Quality Monitoring and Remediation 14
7 GOVERNANCE 15
8 KEY ROLES AND RESPONSIBILITIES 16
9 SUMMARY 16
APPENDIX 1: ECOLOGICAL MITIGATION AND ENHANCEMENT MASTERPLAN

1 Introduction

1.1 Background

1.1.1 This document, an Outline Mitigation, Enhancement and Management Plan (MEMP), has been prepared by RPS (a TetraTech company) on behalf of the London Borough of Hillingdon (LBH or 'the Applicant') to accompany the planning application for the Hillingdon Water Sports Facility and Activity Centre (HWSFAC) at Broadwater Lake ('the Site').

1.1.2 The HWSFAC will provide a new home for the former Hillingdon Outdoor Activities Centre (HOAC) and Broadwater Sailing Club (BSC), albeit the formal name of the end occupier is not yet confirmed. The former HOAC facility was closed as a result of High Speed 2's (HS2) Colne Valley viaduct going through/over the centre. Therefore, the need for HWSFAC to compensate for the loss of HOAC is of paramount importance to the facilities users.

1.1.3 The HWSFAC will likely be operated by a third party under the control of LBH and will also be occupied by the BSC, which already uses Broadwater Lake for sailing and operates from a club house and associated facilities on the northern shore of the lake. The existing BSC facilities will be removed at this part of the Site will be returned to nature. Habitat creation and enhancement measures are proposed across the Site.

1.1.4 The HWSFAC would provide access to nature as well as land and water sports activities to schools, local communities, including disadvantaged and disabled groups, The facility has been designed to be an inclusive safe facility that caters for diverse needs.

1.1.5 The Site is within the Mid-Colne Valley Site of Special Scientific Interest (SSSI), with Broadwater Lake one of four units and comprising approximately 60% of the SSSI's total area.

1.1.6 Gerrard's Cross and Uxbridge Angling Society (GCUAS) are an existing user of the Site and this use will continue beyond the development of the HWSFAC.

1.2 SSSI & Applicant's Statutory Duties

1.2.1 As a public body, the Applicant fully acknowledges its statutory duties under Section 28G of the Wildlife and Countryside Act 1981 to protect and enhance SSSIs as follows: ***"The duty is to take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of the flora, fauna or geological features by reason of which the site is of special scientific interest".***

1.2.2 In the context of the HWSFAC development proposals, this statutory duty applies to all land within the Mid-Colne Valley SSSI that:

- the Applicant will either own, manage, lease or rent to a third party;
- could be damaged or affected by off-site activities; and/or
- could be damaged or affected by planned activities by another party that they have been asked to approve – such as activities outside the boundary of the SSSI.

1.2.3 Although this document and the Outline Operational Management Plan (OMP) which also accompanies the planning application focus on the HWSFAC development primarily, the Applicant recognises that their statutory duties are to the Mid Colne Valley SSSI as a whole. The Applicant acknowledges the benefit of shared objectives toward this obligation in alignment with Natural England.

1.2.4 The Applicant has duties relating to operations they carry out on or are likely to affect SSSIs and operations they permit that may affect SSSIs. Public bodies who are also SSSI owners are always required to submit requests for assent[1]. The list of operations likely to damage the special interest of the SSSI can be used as a guide[2]. It is the responsibility of the public body to screen their proposed activity and only submit an assent notice where they consider the activity to be likely to disturb or damage the special features of a SSSI. .

1.3 Purpose and Objectives

1.3.1 This Outline MEMP presents the integrated and embedded mitigation, enhancement and restoration measures that will be implemented for the construction and operation of the Development. These measures will minimise the risk of negative effects and provide positive enhancements to biodiversity. Some measures will work to connect people with nature, and these opportunities have been signposted.

1.3.2 Objectives for the MEMP would be carefully defined and agreed with stakeholders and will be aligned to the Applicant's statutory duties as a public body. However, these objectives are likely to include the following as a minimum:

- Engage the collective knowledge of public bodies and other stakeholders to help secure sustainable management of Broadwater Lake and to further the conservation and enhancement of the SSSI features.
- Restore all habitats currently present whilst pursuing management that will increase species abundance and biodiversity value of the Site and manage non-native species.
- Carry out focused monitoring surveys and management measures that will protect and maintain viable populations of notable species.
- Encourage public enjoyment and appreciation of Broadwater Lake as this is essential to protect its wildlife in the long term.
- Incorporate measures into the plan that acknowledge and help address the impacts of climate change, how wider biodiversity loss can be reduced and how the site contributes to ecological provision.

1.3.3 A detailed MEMP will be prepared and submitted to LBH and NE for approval via a planning condition that will provide detail of the implementation, long term management and monitoring for each measure, and what remedial action could be taken if any goals for each measure are not successfully achieved. The detailed MEMP would be prepared in consultation with key stakeholders and in accordance with the principles defined in this Outline MEMP.

1.3.4 The detailed MEMP will be presented differently to this Outline MEMP (which is intended as a high-level summary only). It will include a broader habitat restoration plan to improve upon existing habitats, with a particular focus on habitats mentioned within the SSSI citation. These habitats will be those that the ornithological interest features rely upon (e.g. woodland, scrub, fen, water fringe habitats), as mentioned within the Condition Assessment undertaken by Natural England in 2023. Efforts to restore and enhance these habitats could encourage bird species to increase / return to the site. Brief details of

[1] Sites of special scientific interest: public body responsibilities - GOV.UK
[2] Operations likely to damage the special interest

proposed habitat management have been provided in Section 3 below. These are site-wide measures with no specific location.

1.3.5 Within the detailed MEMP, the habitat restoration plan will sit alongside plans for the creation and management of new habitats and features. Section 4 of this Outline MEMP presents the Mitigation Measures associated with the development, and Section 5 presents the Enhancement Measures. Within this Outline MEMP a distinction between 'mitigation' and 'enhancement' has been presented, however collectively the measures are designed to further the conservation and enhancement of the features of the SSSI and increase the ecological value of the Site. Mitigation is defined as the embedded elements of the design which reduce environmental harm. These mitigation measures have been considered within Chapter 7: Biodiversity of the Environmental Statement (ES). Whereas enhancement measures are aspects that have been put forward by the Applicant to provide a biodiversity gain that is not directly linked to the development of the 'Site'.

1.3.6 Overall, there are 21 high level mitigation and enhancement measures which if implemented will fully mitigate the Proposed Development, restore habitats and provide enhancements to the biological value of the Site. These 21[3] measures are presented within Appendix 1 and further details are provided in the Landscape Strategy which accompanies the planning application. This Outline MEMP refers to each measure by the number which is shown on the plan. The numbers have been used north to south, with no hierarchical element to the numbers used.

1.3.7 The measures set out here provide a blueprint guide for the future enhancement of other gravel pit lakes within the wider Colne Valley, many of which share the same biodiversity make-up as Broadwater Lake. Limiting factors include steep lake sides and deep water with no / very little gently shelving shore / bank areas, hardly any emergent plants or reedbeds, banks covered with trees, few or no islands, and varying levels of disturbance to wildlife from site users.

1.3.8 Measure 15 in Appendix 1 shows the location of tern rafts to be funded by HS2 although it should be noted these were not in place at the time of writing (September 2025).

2 Relationship With Other Management Plans

2.1.1 The other outline management plans are submitted with the HWSFAC planning application:

- **Outline Construction Environmental Management Plan (CEMP)** – sets out the measures to avoid, minimise or mitigate environmental effects associated with the construction stage of the Development. The Outline CEMP includes a Construction Logistics Plan at Annex 1 which sets out measures to manage construction traffic within Site and the surrounding area; and
- **Outline Operational Management Plan (OMP)** – provides a framework of operating controls and procedures for future HWSFAC users to minimise disturbance to the special features of the Mid Colne Valley SSSI (i.e. assemblages of breeding and wintering birds) and protect the water environment. The OMP also includes standard operating procedures relevant to the future use of HWSFAC, including measures which the Operator(s) must adhere to.

[3] There are 23 points on the plan however one point refers to elements that are neither mitigation nor enhancement but are important for interpreting the plan.

2.1.2 Detailed management plans will be developed in collaboration with key stakeholders and will be secured through appropriately worded planning conditions.

2.1.3 Once the HWSFAC is operational, the Applicant is committed to an adaptive management approach whereby detailed management plans are subject to review and update in response to monitoring data and stakeholder engagement. Monitoring and regular reporting will allow progress to be measured against agreed goals and objectives so that remedial measures or amendments can be made to management plans where appropriate.

3 Habitat restoration and management

3.1 Restoration of Marginal / Fen Habitats

3.1.1 Restoration of water fringe habitats along the lakeshore will be an important goal to improve the condition of Broadwater Lake and improve its naturalness. Shallow edges which are gently shelving allow the development of marginal vegetation and are very important for wildlife in natural lakes, however in man-made gravel pits the edges are very steep sided and shallows are typically very limited in extent or even absent. Marginal habitats will support the SSSI interest features (open water and fen breeding bird assemblages) and their restoration at Broadwater Lake will benefit the SSSI.

3.1.2 Initially restoration will comprise cutting back overhanging tree branches at the lake edge. This will increase light levels reaching the water's edge and allow riparian vegetation (reeds and other marginal and emergent plants such as yellow flag iris) to re-establish in any small patches of shallows. Up to 25% of the lake edge will be managed in any one year. On a 4-5 year rotational cycle, this will create a range of shoreline shading conditions. The best areas for emergent vegetation will be logged and those areas will be targeted for more frequent branch trimming to allow the emergent vegetation to be sustained long-term (i.e. not overshadowed).

3.1.3 Sections of the lake edge will also be reprofiled to create a greater extent of shallows.660m of shoreline along the former sailing club (BSC) shoreline, eastern shore of the lake, and south shore near to the peninsula have been identified for reprofiling. The works would typically be done using a digger on a floating platform to reshape gravels beneath the water surface, and to pull soils from the shoreline into the lake. The options are to create a sloping ramp, or to construct an underwater revetment and backfill it to create a ledge of shallow gravels (as proposed for Measure 17 above) or alternatively use underwater planters such as those for sunken willows (Measures 5 and 7). It is likely that underwater retaining structures will be needed to hold the gravels and soils in place, as the limiting factor will be the availability of materials to create the ramps.

3.1.4 The proposed works areas and approximate timescales are set out in Table 3.1 below.

Location	Date	Detail
Peninsula north-east shore	Oct-27	Creation of new naturalised beach for development – 60m length approx. *Window is Oct-Dec for in-lake works as per NE requirements*
BSC	Oct-28	Demolish buildings. Remove concrete jetty and slipway.

BSC	Nov-28	Overhanging trees cut back. Reprofile shoreline sections to slope gently. Total of 250m shoreline. Creation of water vole banking with wet ditches.
BSC	Nov-28	Landscaping per masterplan of riparian habitat between lake and River Colne
East Lake Shoreline sections	Oct-29	Overhanging trees cut back. Restoration of 150m to create natural profiles and areas of shallows.
Peninsula inlet and south shoreline	Oct-29	Of high value to birds within refuge area and not accessible by public – undisturbed. Reprofiling of 200m linear length.
Total shoreline reprofiling works	2028 - 2029	60+250+150+200=660m = 20% of 3300m shoreline within red line (excluding islands but including peninsula) (*figures are approximate*)
Total area habitat management	Ongoing	Majority of shoreline vegetation managed to reduce tree canopy and allow light to existing riparian zone. Minimum 1000m.

3.1.5 Shoreline works will be done each year in October to December, avoiding the breeding bird season and times when moulting birds are present in high numbers, but prior to large numbers of wintering birds arriving at the lake for the winter.

3.1.6 Increased areas of marginal vegetation will provide food and potential nest sites for fen and open water bird species.

3.2 Restoration of Scrub

3.2.1 Over time scrub has succeeded to woodland within the SSSI. To restore scrub habitat to the Site, woodland management will be used to create temporary and more permanent clearings where scrub habitat can develop and thrive.

3.2.2 Scrub will be allowed to naturally regenerate within new clearings initially. This is likely to be species-poor and so, following botanical surveys, targeted planting of native scrub species would be focussed on increasing the species diversity.

3.2.3 Ground flora was noted to be impoverished in many woodland areas (dominant nettle indicative of disturbed, challenging or nutrient enriched conditions); seeding and plug planting with shade tolerant native wildflowers and woodland indicators would be one of the management options available to restore healthy scrub habitat.

3.2.4 Buddleia will be actively removed along with any other invasives and any debris / waste encountered as part of the works. Saplings would be pruned to encourage bushy growth rather than become trees.

3.2.5 Once established, scrub will be managed to better support the birds that particularly utilise scrub habitats (SSSI designated feature lowland woodland and lowland scrub breeding bird assemblages).

3.3 Restoration of Woodland

3.3.1 Wet woodland will be managed to improve its condition, with the goal of better supporting the SSSI designated ornithological features (lowland woodland and scrub breeding bird assemblages).

3.3.2 Coppicing, thinning and creation of clearings will improve the age structure of the woodland and increase light levels to improve understorey vegetation. A small number of new glades will be created every few years, to allow light to reach the woodland floor, promoting the growth of a higher diversity of ground flora.

3.3.3 Additional woody species and ground flora species may be introduced to increase the biodiversity. Enhancement of understorey planting may be undertaken using plug planting.

3.3.4 Dead wood will be retained to create further habitat opportunities.

3.3.5 No public access will be allowed to the main area of wet woodland at the peninsula.

3.3.6 These measures will increase food resources for a wide range of bird species, supporting breeding.

3.4 Restoration of Open Water

3.4.1 The Mid-Colne Valley SSSI has had a loss of total open water available due to siltation of Harefield Lake over time. As part of the development, the area of open water within Broadwater Lake will be increased slightly, mitigating for impacts from the development of the HWSFAC and also helping to compensate for this loss.

3.4.2 The quality and condition of the open water within Broadwater Lake will be improved through a number of the measures set out within this document and in the Environmental Statement Chapter 7. Assessment of the baseline and details of how this will be improved are set out in the Lake Condition Assessment (ES Appendix 7.6).

3.4.3 Works to increase the area of marginal shallows are particularly important (see Section 3.1 above). Increased aquatic, emergent and marginal plants (within restored fen habitat, as additional willow trees within submerged planters (Measures 5 and 7 below), and as floating reedbed habitats (Measures 8 and 11 below)) will also remove nutrients from the water, improving its quality and helping to buffer the warming effects of climate change.

3.5 Lake Restoration Strategy (WFD-08) – Commitment and Programme

3.5.1 The Applicant commits to deliver long-term lake restoration as an integral and non-optional component of the Proposed Development, in order to ensure compliance with the Water Framework Directive (WFD) objective of no deterioration and to support progression toward Good Ecological Potential for Broadwater Lake (GB30641907). This commitment is consistent with, and relies upon, the measures set out in the WFD Addendum (Appendix A, WFD-01 to WFD-10) and this Outline MEMP.

3.5.2 The Applicant confirms that the long-term restoration package will be taken forward as a priority and executed through a phased Lake Restoration Strategy (WFD-08). The Strategy comprises (as a minimum) restoration of the former BSC frontage and progressive restoration of wider lake margins to increase habitat naturalness, shoreline heterogeneity and shallow/marginal habitat extent, with delivery informed by monitoring and adaptive management.

3.5.3 The Lake Restoration Strategy will include, as a minimum:

- decommissioning and restoration of the former BSC frontage (including removal of structures/hardstanding as required, shoreline regrading/reprofiling to create shallow marginal shelves, and riparian habitat restoration);
- phased shoreline management and reprofiling of suitable lake edges to create shallow shelves and expand marginal and emergent vegetation, supported by rotational canopy management to increase light availability; and
- delivery and maintenance of in-lake restoration features that support habitat complexity and water quality (including floating reedbeds and shallow gravel habitat), where shown on the masterplan and/or specified within the detailed MEMP.

3.5.4 Subject only to ecological timing windows and necessary consents, in-lake works will be undertaken in the agreed seasonal window (typically October–December). The Applicant commits to the following indicative programme (as also set out in Table 3.1): (i) Oct–Dec 2027: peninsula north-east shore works; (ii) Oct–Dec 2028: decommissioning and restoration of the former BSC frontage; and (iii) Oct–Dec 2029: wider lake edge restoration works (including eastern shoreline sections and the peninsula inlet/south shoreline).

3.5.5 A detailed Lake Restoration Strategy will be prepared as part of the detailed MEMP and secured by condition. It will include spatially defined restoration layouts, method statements, sequencing, species palettes, establishment criteria, monitoring protocols and adaptive management triggers. The Applicant will consult the Environment Agency and Natural England on the detailed Strategy and will deliver the works in accordance with the approved details.

4 Mitigation Measures

4.1 Measure 3 – Remodel Island #2

4.1.1 Island #2 is located to the north of the Broadwater Lake and is within the sailing area. Currently the island is fully vegetated with four prominent trees within the middle.

4.1.2 As the Development requires a small area of land reclamation to the north east of the peninsula there could be a reduction in open water habitat. It is proposed to mitigate that loss by remodelling Island #2 with two areas cut away to below the summer water depth which will allow shallow water near the shore restoration.

4.1.3 Together with measures 6 and 10, there will be an overall increase in the amount of open standing water within Broadwater Lake (716m^2), which is deemed a positive outcome.

4.2 Measure 5 – Sunken willows demarking sailing area

4.2.1 There is a ridge that runs east to west from the end of Island #6, this ridge acts as the demarcation for the proposed sailing area. Currently sailing occurs to the south of this ridge (up to approximately Island #14). Sunken willows within created planters are proposed to act as visual screen on the water surface. These sunken willows will have a ‘gappy appearance’ so birds will still have a greater line of sight and to not feel enclosed.

4.2.2 The physical demarcation will also stop sailing craft entering the bird refuge (see measure 12) and act as a clear natural visual aid to persons on the water.

4.2.3 In addition to creating a physical barrier to sailing craft, additional vegetation within Broadwater Lake will increase the biodiversity present.

4.3 Measure 6 – Remodel Island #6

4.3.1 The north edge of Island #6 currently has invasive giant knotweed *Reynoutria sachalinensis* present, which is to be removed. During the removal a small portion of the north east of the island will also be removed. This will be cut below the summer water depth to provide year-round shallow water.

4.3.2 As previously mentioned, the reclamation in the eastern channel results in a net loss of open standing water, however together with measure 3 and 10, there will be an overall increase in the amount of open standing water within Broadwater Lake, which is beneficial.

4.4 Measure 7 – Sunken willows between Island #6 and #8 and east of peninsula

4.4.1 Sunken willows provide additional habitat into the water environment but the positioning of these within measure 7 is to mitigate the increase visual disturbance from the operational HWSFAC. The two locations are proposed between islands #6 and #8 which will incorporate a path to the east (facing the eastern channel) and to the east of the peninsula which backs onto the south eastern lagoon from the workshop.

4.4.2 These visual screens will mean that the birds will not see the activity on the land from the water to remove all visual stimuli.

4.5 Measure 10 – Removal of Island #7

4.5.1 To allow sailing into and out of the eastern channel Island #7 (a pile of gravel and construction rubble with willows growing from the top) is to be removed. This allows the safe departure and arrival of boats either under their own sail or being pulled out by the electric safety vessel. In addition to aiding navigation the removal will mitigate for the loss of open water that will be associated within the reclamation within the eastern channel.

4.5.2 Together with measure 3 and 6, there will be an overall increase in the amount of open standing water within Broadwater Lake.

4.6 Measure 11 – Installation of reedbeds north of Island #14

4.6.1 Floating reedbeds act as an ecological system designed to mimic the functions of a natural wetland while floating on the surface of a body of water. The location of these floating reedbeds, to the north of Island #14 is to provide additional screening from the sailing area to these islands. The island has been recorded to be used by ducks for breeding, but this was at low levels due to the sailing area being close to this island, however with the sailing area moved north, the willows (measure 5) and reedbeds will act as a visual screen to encourage birds to use these islands, mostly during the breeding period. As an added benefit, the floating reedbeds will also provide additional habitat for juvenile fish, invertebrates and fen bird species such as Cetti's warbler, reed bunting, reed warbler, sedge warbler. Ducks may also nest within the reeds.

4.7 Measure 12 – Creation of bird refuge and reduced sailing area

4.7.1 The southern area, especially to the west, of Broadwater Lake is currently used by a large number of birds and appears to be the area which birds are displaced to when sailing occurs from BSC in the north. Currently the bird refuge has some levels of

disturbance with sailing activities occurring up to Island #14 and fishing occurring along the southern bank of Broadwater Lake. It's estimated that there currently is 3.4 ha of undisturbed habitat when accounting for HS2, fishing and sailing.

4.7.2 The area proposed to be classed as the upgraded bird refuge will increase safe open water space to 14.7 ha with the restriction on fishing from the southern bank and by moving the sailing area north (away from Island #14). As stated in measure 5, there is visual screening with willows so humans cannot enter this bird refuge area. The 14.7 ha of 'undisturbed water' is set back 200 m from the willow screens, but considering birds show high levels of habituation to sailing there is likely to be an even greater area (right up to the willow screen) which will be undisturbed.

4.8 Measure 16 – Expanded and enhanced woodland on peninsula

4.8.1 The current trackway along the north of the peninsula at the south end of the lake is to be planted up with native broadleaf and fruiting trees. This area is currently accessible, however this will form a woodland that is not accessible to the general public but will be attractive to a range of woodland passerines.

4.8.2 Within the woodland, a management plan will be implemented which will include coppicing of the willow which dominates and selected felling and planting to increase the diversity of trees present (see also Section 5.2).

4.9 Measure 22 – Visual disturbance screen

4.9.1 Around the western edge of the woodland activity and camping zone a screen is proposed to be installed. This screen will be a visual and acoustic damper and will remove disturbance stimuli from the bird refuge. The screen will be a 'living green wall' with native species incorporated into the design to help increase biodiversity.

4.9.2 This wall will also guide people towards the accessible bird hide which works as an information point on the specific sensitivities of the birds of Broadwater Lake (see measure 23).

4.9.3 This measure mitigates the potential for increased disturbance along the west of the peninsula by using natural people management features.

4.10 Bat roost on island #8

4.10.1 A bat roost identified by HS2 within trees on island #8 will be marked and a natural protective fence (e.g. woven wattle) placed around it to ensure no disturbance during operation of the HWSFAC.

4.11 Disturbance controls

4.11.1 As set out in the Outline OMP, a number of controls will reduce disturbance at the Site to the SSSI interest features. These measures will mitigate for increased disturbance in the east channel and peninsula during operation of the HWSFAC.

4.11.2 Measures to control unauthorised access (and associated anti-social behaviours) include a secure gate preventing access to the south shore of the lake (southern causeway), improved security along the boundary with the Grand Union Canal through strengthening of the existing hedgerow, and secure gates at the site of the former BSC. This will reduce visual disturbance to open water birds on the lake.

4.11.3 Fishing will be prohibited along the southern causeway and at the peninsula. This will reduce disturbance within the south-west bird refuge area.

4.11.4 The speed of electrically driven craft will be limited to 3mph on the lake except in an emergency (such as capsizing). This will also significantly reduce disturbance to the open water bird assemblage year-round.

5 Enhancement Measures

5.1 Measure 1 – Ecological reinstatement of existing BSC site

5.1.1 The area currently occupied by BSC along the north bank of Broadwater Lake will no longer be required to be used by the BSC when the HWSFAC is constructed and operational. This area will be enhanced and restored to increase biodiversity by undertaking the following actions:

- Enhancement of existing modified grassland to restore a more species-rich mix;
- Grassland seeding on gravel surface;
- Native scrub and tree planting;
- Creating of earth mounds for reptiles/invertebrates;
- Shallow scrapes for ruderal ephemeral vegetation;
- Compost heaps (e.g. from island clearance, measure 4) and log piles;
- Bee bricks and posts;
- General bird boxes and bat boxes on suitable trees and structures;
- Retain marginal vegetation; and
- Cut back areas of overhanging branches at lake edge (see also Section 5.1).

5.1.2 As the area currently occupied by the BSC covers a relatively large footprint there are multiple options of enhancements and restoration techniques that can be developed. The detail as to which enhancements are progressed will be presented within the detailed MEMP.

5.2 Measure 2 – North west corner of Broadwater Lake

5.2.1 The relocation of BSC to HWSFAC reduces the disturbance within the north of Broadwater Lake. To enhance the area further buoys will be placed within the north west corner which would demarcate an area where access is prohibited. The floating pontoons from BSC will be relocated to this area which is likely to allow breeding terns and/or gulls to make use as has been demonstrated within the south east corner.

5.2.2 In addition to the reused pontoons, additional tern rafts will be placed alongside floating reedbeds. Floating platforms will be designed to ensure red signal crayfish or other animals cannot burrow into the floats.

5.2.3 Overall, this area is designed to enhance the diversity of Broadwater Lake and will provide additional options for ground nesting birds in the north of the lake.

5.3 Measure 4 – Annual vegetation management of Island #3 and #4

5.3.1 Islands #3 and #4 are positioned to the north and centre of Broadwater Lake. Both islands are currently (summer 2025) heavily vegetated. In previous years black-headed gull nested on the islands when there was no vegetation.

5.3.2 The vegetation will be cleared in October each year to remove any growth over the summer. This removal of vegetation will enhance these islands to increase the scope of ground nesting gulls and terns. The removed vegetation will be composted as part of measure 1 at the former BSC site.

5.4 Measure 8 – Installation of reedbeds in eastern channel

5.4.1 Floating reedbeds will be installed within the eastern channel to clean the water of excess nutrients identified to be leaking into Broadwater Lake from the adjacent Grand Union Canal. This will improve water quality and increase the resilience of the lake to climate change (e.g. reduced chance of blue green algal blooms as temperatures rise long-term). This is considered enhancement as it addresses a serious issue not caused by the proposed development, which will only get worse over time without intervention.

5.4.2 Floating reedbeds act as an ecological system designed to mimic the functions of a natural wetland while floating on the surface of a body of water. Within the eastern channel, the floating reedbeds will also provide additional habitat for juvenile fish, invertebrates and eventually birds (particularly open water species that habituate to disturbance easily such as great crested grebe, moorhen, coot etc, and for fen species of birds such as Cetti's warbler, reed bunting, reed warbler, sedge warbler etc).

5.5 Measure 9 – Woodland management to the east of Broadwater Lake

5.5.1 A small parcel of woodland to the north of Broadwater Farm and west of St Mary's Close will have a woodland management plan produced to increase the biodiversity value of the area.

5.6 Measure 14 – Sensory garden and pond on peninsula

5.6.1 An accessible wildlife garden with pond dipping pool will be located behind the main facilities building in the north of the peninsula. This will provide habitat for invertebrates and amphibians and increase the diversity of habitats at the Site. The wildlife garden will have areas for reptiles (rocky habitat) and insects (insect hotels), improving the provision for these species at the Site.

5.6.2 The garden has been sited within a very peaceful quiet area of the Site with less footfall (away from the campsite and sailing areas) and is aimed at children requiring quiet or reduced visual stimulation.

5.7 Measure 17 – Gravel bank within eastern channel

5.7.1 Some narrow gravel banking will be formed within the eastern channel. This will provide loafing habitat for young duck and gulls, as well as species such as wagtails and potentially waders such as little ringed plover and oystercatcher on occasion.

5.7.2 This habitat will also encourage aquatic invertebrates which currently have little shallow water habitat due to the steep sides of Broadwater Lake.

5.8 Measure 18 and 19 – Habitat creation for breeding birds

5.8.1 To increase the number of nesting places for breeding birds, additional tern rafts will be placed within the bird refuge. Alongside the rafts more floating reedbeds will be installed. The increase in nesting places will enhance the breeding bird assemblage of the Site. Floats will be imperviable to burrowing animals such as red signal crayfish.

5.8.2 Common tern and black-headed gull already nest on pontoons within Broadwater Lake, however these are at capacity. The increase in nesting habitat will contribute to increasing and maintaining the population.

5.9 Measure 20 – Native orchard planting

5.9.1 Within the area designated for camping native orchard trees will be planted for example apple, pear and cherry to increase the biodiversity of the area and provide an educational resource for children. The introduction of suitable fruiting plants would provide new habitat for a range of fauna.

5.9.2 It is anticipated that foraging of the fruit will be used to cater for users of HWSFAC, however windfall fruit will be kept in situ to stimulate decay and increase biodiversity.

5.10 Measure 21 – Wildlife pond

5.10.1 Within the area designated for camping and woodland activities, a wildlife pond will be installed. This pond will consist of varying depths with aquatic vegetation planting. This pond will be an ‘pond-dipping’ area with appropriate safety features due to its location. This will provide habitat for invertebrates and amphibians and increase the diversity of habitats at the Site.

5.10.2 HWSFAC users will be encouraged to interact with this pond to understand the invertebrate life that will inhabit this area.

5.11 Measure 23 – Bird hide and information centre

5.11.1 A fully enclosed bird hide will be installed on the west of the peninsula overlooking the bird refuge area. This bird hide will have a screened walkway so no movement would be detected from the water. The type and size of the bird hide is yet to be confirmed however the hide will be accessible to wheelchair uses and will follow the styles from many nature reserves across the country.

5.11.2 Within the bird hide there will be information boards which help people identify birds, understand how the populations on Broadwater Lake interact with the European flyway and why it is important to conserve these places for birds.

5.12 Other enhancement measures

5.12.1 Other measures to be deployed in suitable locations across the Site and that will be included within the detailed MEMP are set out in the table below.

Feature	General Description

Control of Invasive Non-Native Species (INNS)	Signal crayfish, Japanese knotweed, giant knotweed, Himalayan balsam, American mink will all be subject to control measures. Monitoring for any new INNS (floating pennywort present in River Colne adjacent to site). Management measures put in place to prevent new INNS occurring.
Artificial fish reefs	To provide protection and additional habitat for juvenile fish from predators, supporting fish populations within the lake that provide food for grey heron and cormorant, as well as for fishing. Within lagoon initially and other suitable locations longer term.
Bird boxes	A range of different bird boxes every 30m on suitable mature trees around Broadwater Lake (peninsula, sailing club access road) - additional nesting features for species of breeding woodland and scrub bird species
Kingfisher tunnel	To be buried into the bank of the lake in a suitable location away from the peninsula with suitable fishing conditions nearby
Kingfisher floating fishing perches	Floating perches deployed across the lake in a few locations to allow kingfishers to fish within other shallower areas of the lake away from the bankside.
Bat boxes	Bat boxes installed on trees and buildings across the Site to provide additional roost opportunities
Sand martin bank	Installed on island #2 to provide potential breeding habitat for sand martin which has been recorded passing through the site each year
Pioneer moss lawn	Pioneer moss lawn found on concrete hardstanding at the Site, preserved and translocated to a concrete surface (roof or ground level) with benefits for biodiversity and as a learning resource. Also used on flat ‘moss roofs’ on buildings at the Site
Hedgehog Highways	Gaps beneath boundary features to ensure hedgehogs can access all suitable site areas
Brash and Log Piles	To benefit amphibians and reptiles
Log Piles	To benefit invertebrates
Hibernation Sites and Basking Banks	Enhanced habitat for reptiles and amphibians
Compost Piles	Egg laying sites for reptiles
Invertebrate Hotels	Provision of nest sites for a wide range of invertebrates
Bee Bricks / Posts	Provision of nest sites for a range of solitary bees
Otter monitoring	Areas know to be used by otters will be monitored and these areas maintained to ensure otters continue to have use of them (e.g. south-west peninsula concrete beach in front of planned bird hide).

6 Monitoring and Review

6.1 Overview

6.1 LBH is fully committed to long-term monitoring and management of the Site, see Section 8 below and the Outline OMP.

6.2 Monitoring of the SSSI interest features will be undertaken through a range of surveys during construction and the initial years of operation, with the goal of ensuring that the impacts as assessed in the EIA are not exceeded. The surveys to be undertaken are:

- Breeding bird survey – annually during construction and for 3 years post-construction then biannually;
- Wintering bird survey – annually during construction and for 3 years post-construction then biannually;
- Breeding bird disturbance surveys each month for the first two years of operation of HWSFAC (operational between April and September inclusive); and
- Wintering bird disturbance surveys for the first two years of operation of the relocated BSC (one survey per month between October – February).

6.3 Water quality will be monitored using the condition assessment criteria for lakes and results loaded to the Freshwater Habitat Trusts lakes portal if available. The lake is in catchment Mid Colne valley, Water body ID 41907. The condition assessment will be made with reference to the Freshwater Habitat Trusts Habitat Naturalness Assessment for lakes (medium alkalinity) augmented by periodic WFD relevant chemical and nutrient testing. Seasonally equivalent windows and locations will be used for trend analysis.

6.4 The success of all other mitigation and enhancement measures prescribed in the detailed MEMP will also be monitored. The guidelines for monitoring will be specific to each measure and will include goals for target condition and monitoring criteria. Potential issues will be flagged, and suggested remedial measures will be included.

6.5 The Site Manager will ensure that the detailed MEMP will be reviewed and updated every five years, taking into account the latest monitoring results. New measures may be prescribed at this point to manage the updated understanding of the features and the best management practices.

6.6 Natural England undertake periodic Condition Assessments of designated SSSIs with the last being in 2023. Once construction is complete and operation of the HWSFAC is underway, a further Condition Assessment by Natural England may be undertaken – this would be fed into the Detailed MEMP at that time.

6.2 No Deterioration Water Quality Monitoring and Remediation

6.1 The Applicant commits to long-term water quality monitoring to demonstrate that no deterioration in water quality occurs as a result of construction or operation of the Proposed Development, and to provide an enforceable framework for corrective action should deterioration be identified. This commitment aligns with the WFD Addendum (Appendix A, WFD-09) and will be implemented through the detailed MEMP, CEMP and OMP as applicable.

6.2 Water quality monitoring will be undertaken using consistent sampling locations and seasonally equivalent monitoring windows to enable robust trend analysis. Monitoring will include condition assessment (with reference to the Freshwater Habitat Trust Habitat Naturalness Assessment for lakes, where applicable) and periodic WFD-relevant chemical and nutrient testing. Monitoring outputs will be reviewed through the governance arrangements set out in Section 7, including the Steering Group.

6.3 The detailed MEMP will define the monitoring framework, including (as a minimum): sampling locations, frequency, determinands/parameters, baseline reference points, reporting format, and predefined trigger thresholds to identify adverse trends or deterioration.

6.4 Where monitoring identifies deterioration (or a sustained adverse trend that indicates likely deterioration) relative to baseline/expected conditions, the Applicant will:

a) undertake an investigation to identify likely causes and confirm the extent of change; and

b) submit a Water Quality Remediation Plan to the Local Planning Authority for approval within 8 weeks of the trigger being confirmed (unless otherwise agreed in writing), setting out corrective measures, an implementation timetable and follow-up monitoring; and

c) implement the approved remediation measures in accordance with the approved timetable and report outcomes to the Steering Group and the Local Planning Authority.

6.5 Remediation measures will be proportionate to the cause and may include, where relevant, enhanced pollution prevention controls, adjustments to operational procedures, additional habitat/water quality interventions (for example expansion/adjustment of floating reedbed provision), targeted stabilisation or erosion control measures, and any other actions reasonably required to restore conditions and ensure ongoing compliance with WFD no-deterioration objectives.

7 Governance

7.1 As a public body, the Applicant acknowledges its duties under Section 28G of the Wildlife and Countryside Act as set out in Section 1: Introduction which are not repeated here.

7.2 Although this document and the Outline OMP focus on the development primarily, LBH acknowledges the importance of shared objectives toward the conservation and enhancement of the SSSI as a whole and alignment with Natural England in this objective. In respect of activities not strictly included as part of the development, and in regard to monitoring of the SSSI as a whole, broader measures will apply than described in the OMP. In undertaking its obligations toward these, LBH will follow the provisions and clauses of s28G and applying for assent when needed.

7.3 Where there is an overlap between activities of the development and its BNG outcome, and the monitoring and status of the wider SSSI, LBH is anticipated to separate wider management activities and functional benefit. This allows LBH to retain monitoring of the development *per se*, whilst ensuring the wider site management is able to draw on investment in other zones. However, it is recognised also by all parties, that it is challenging to separate the effects of activities in the development area and some associated net gain effects (or indeed disbenefits) in the wider SSSI, much as it is challenging to separate the wider context and environment.

7.4 A Steering Group will be established to oversee the implementation of the management plans and make recommendations/ decisions to ensure the statutory duties are met and whilst also meeting the goals of the Development. The Steering Group will be formed of

statutory bodies, including Natural England, the Environment Agency, HS2 and the Canals and Rivers Trust.

7.5 LBH are very experienced with this type of arrangement having set up the Ruislip Woods Management Advisory Group in 1982 to oversee the implementation of a Long Term Management Plan (LTMP). The Advisory Group involves statutory bodies and reports back to LBH periodically.

7.6 A further group will comprise a subsidiary management committee, formed of interested user groups and / or service providers. This committee will be established in an advisory capacity only. Key stakeholders and interested parties will be able to apply to join.

7.7 Regular meetings will be held where LBH will provide progress updates against the scheme goals and objectives, and will act as a forum to discuss relevant issues in relation to the operation of HWSFAC, and allow members to raise issues with LBH.

8 Key Roles and Responsibilities

8.1 LBH, as the Applicant, will be responsible for the communication and full implementation of the detailed MEMP, including organising all monitoring and management activities for habitats and features on Site.

8.2 The Site Manager will review the effectiveness of the MEMP and will be responsible for ensuring the MEMP is updated and amended as required.

8.3 The Site Manager will be responsible for ensuring that all relevant assents and permits are in place for all planned activities at the Site in accordance with relevant legislation. Notably, this would include written assent for ORNECs and Permits to Work as detailed under Section 1: Introduction..

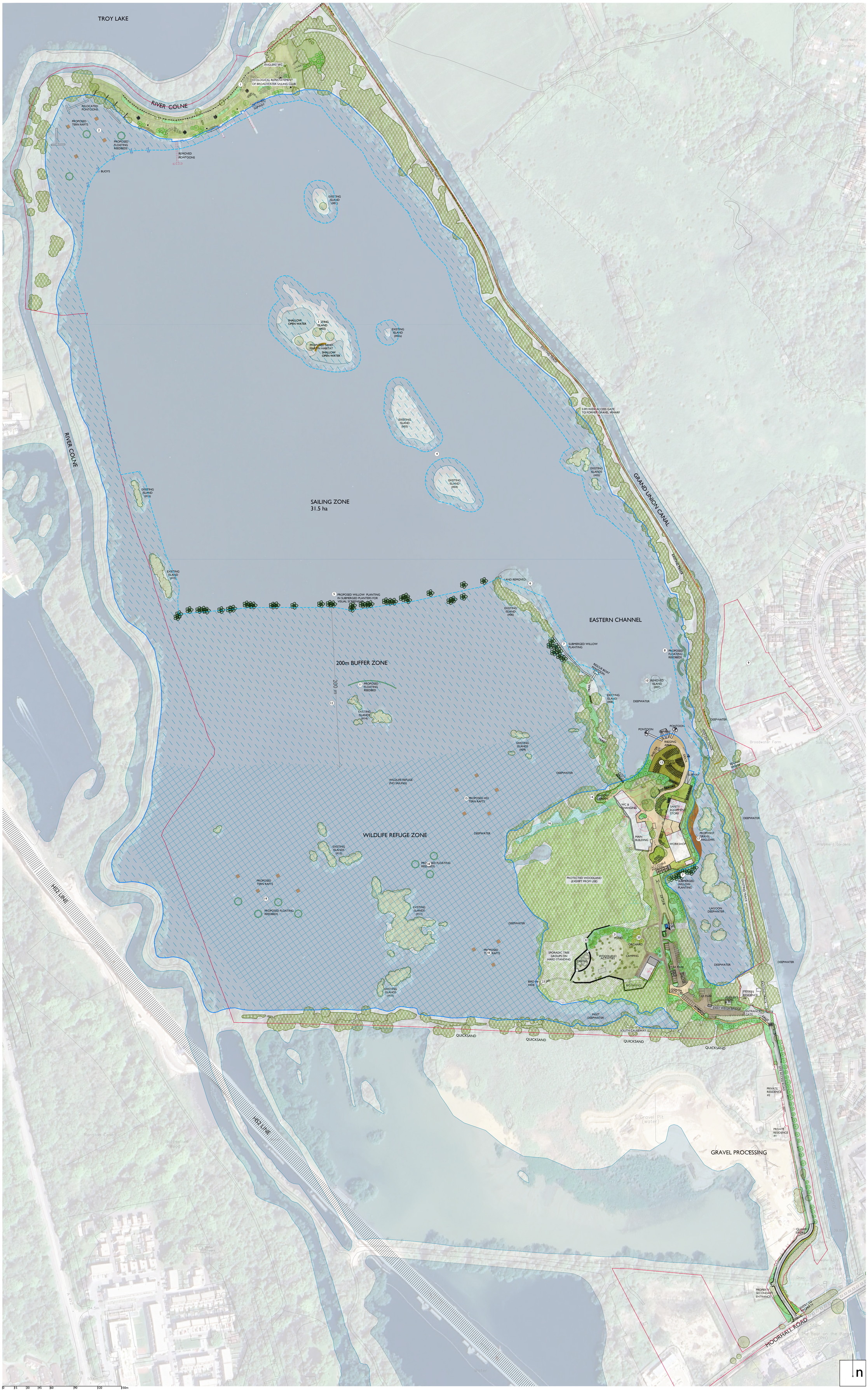
8.4 All works specified within the detailed MEMP will be funded by the Owner / Developer.

9 Summary

9.1 A number of subtle, low impact, mitigation, enhancement and restoration measures in keeping with the ethos of the wider site are proposed, and in accordance with the statutory duties under Section 28G of the Wildlife and Countryside Act 1981.

9.2 It is expected that a detailed MEMP will be developed in collaboration and will be subject submitted to and approved by LBH and NE via a planning condition. The detailed MEMP will provide full details on how these mitigation and enhancement measures will be implemented, managed and monitored.

Appendix 1: Ecological Mitigation and Enhancement Masterplan



The use of drawings by the Customer acts as an agreement to the following statements. The Customer must not use the drawings if it does not agree with any of the following statements:
All drawings are based upon site information supplied by third parties and as such their accuracy cannot be guaranteed. All features are approximate and subject to clarification by a detailed topographical survey, statutory service enquiries and confirmation of the legal boundaries. Do not scale the drawings. Figured dimensions must be used in all cases. All dimensions must be checked on site. Any discrepancies must be reported in writing to Colour-UDL before proceeding. All drawings are copyright protected. Refer to full Terms & Conditions at www.colour-udl.com

KEY

Site

- Application boundary
- Existing shoreline
- Existing woodland to be protected (exempt from use / access) 30,199 m²
- Existing tree cover
- Existing waterbody
- Sailing zone
- Buffer zone, no sailing
- Wildlife refuge area, no sailing
- Proposed native tree planting
- Native shrub planting 12,779 m²
- Ecological reinstatement of Broadwater Sailing Club
- 2.0m high living acoustic barrier (Gramm EcoSoundBlok) 276 m

Note: Mitigation proposals are identified with - **M**
All other proposals would be enhancements.

1. Ecological reinstatement of Broadwater Sailing Club with :
   - Native grassland seeding on existing gravel surface
   - Native scrub planting to define linear features for habitat creation
   - Native tree planting within existing car park and throughout site
   - New earth mounds to create south facing banks as reptiles/ invertebrates basking and egg laying habitat
   - Shallow scrapes to allow ruderal ephemeral vegetation to colonise
   - Brash compost and log piles
   - Enhancements for invertebrates (sandy piles, bare rocks, flowering herbs and shrubs)
   - Bee bricks and posts for a range of solitary bees
   - Generalist bird boxes and bat boxes to existing trees
   - Retain existing marginal vegetation and concrete slipway
   - Cut back areas of overhanging branches to lake edge to allow more emergent vegetation to flourish
2. Bay with no sailing as defined by a row of buoys to create quiet bay for birds to include :
   - 3 no. anchored floating reed beds with inbuilt nest platforms and underside aquatic enhancements
   - 4 no. tern rafts relocated pontoons from Broadwater Sailing Club for bird roosting / nesting
3. Remodel existing island 2 to :
   - Create 2 no. bays to significantly increase the shore to land area ratio. These would be 500mm below Summer water level for natural fen regeneration
   - Avoid 4 no. existing trees' root protection areas
   - Form one layered sandy bank as artificial Sand Martin habitat on the island to increase species richness
   - Increase the net area of open water - **M**
4. Annual management to remove vegetation in September/October on islands 3 and 4 for ground nesting birds. All vegetation removed by hand/mechanical means, no herbicides.
5. Proposed native Willows planted in underwater planters (Ø 3.6m) to delineate northern boundary of the refuge and provide a gappy visual barrier that maintains long sight lines - **M**
6. Invasive Giant Knotweed to be removed from island 6 - **M**
7. Proposed native willows planted within underwater planters (Ø 3.6m)
8. 3m wide floating reedbeds anchored off the eastern shore of the east channel
9. Woodland management of 'triangle site'
10. Remove island 7, excavating to 1.5m Summer water depth, thus creating an increase in open water - **M**
11. Location of floating reedbeds to create a screen for existing island 4 group
12. 200m wide open water zone between refuge and sailing
13. Reclaimed land for dinghy storage and water access (with marginal planting for macro-invertebrates), part submerged in Winter
14. Sensory garden with wildlife pond surrounded by native mixed hedgerow
15. HS2 mitigation: 5 no. floating gravel tern rafts
16. New wet wooded planting to infill former access track on peninsula. To include generalist bird boxes (open and cavity nesting) and duck nest tubes - **M**
17. Bare gravelly beach - 200mm below Summer water level for macro-invertebrates
18. Habitat creation within the refuge - east
    - 3 no. floating reed beds
    - 3 no. tern rafts within open water
19. Habitat creation within the refuge - west
    - 4 no. floating reed beds - **M**
    - 4 no. tern rafts within open water - **M**
20. Proposed native orchard trees to increase biodiversity - **M**
21. Wildlife pond
22. Living green acoustic and movement screening fence, 2m high planted with native species appropriate to the woodland floor and edge in locations that minimise shading of woodland floor
23. Bird hide. Visually screened walkway to not disturb the open water, Information boards as to the species that are likely to be present.

Rev	Amendments	Date	Drwn	Chkd
28	Buildings layout amended	17.11.25	JR	PO
27	Zip line, Big Swing included & New buildings	14.11.25	JR	PO
26	Zip line, Big Swing & Sand Martin habitat in-included	29.09.25	DB	PO
25	Zip line omitted	14.08.25	JR	DB
24	Updated to latest layout	14.07.25	DB	PO
23	Annotations updated to Ecologist comments	03.07.25	DB	PO
22	Green wall location corrected	30.06.25	DB	PO
21	Updated to Ecologist comments	25.06.25	DB	PO
20	Revised acoustic barrier layout	20.11.24	TK	PO
19	Changed drawing scale and format (A0)	31.10.24	TK	PO
18	Updated layout	25.09.24	TK	PO
17	Updated layout	18.09.24	TK	PO
16	Updated following comments	21.08.24	TK	PO
15	Updated following comments	10.11.23	OB	PO
14	Development of ecological mitigation and enhancement	29.09.23	JR	PO
13	Annotation amended	26.09.23	AH	PO
12	Layout amended	11.09.23	JR	PO
11	Floating reedsbed and island layout amended	24.08.23	JR	PO
10	Updated following comments	22.08.23	DB	PO
09	Updated following comments	16.08.23	DB	PO
08	Updated following workshop on 28.07.23 at LBH, Uxbridge	08.08.23	DB	PO
07	Final QA	22.06.23	JR	PO
06	Amendments to the masterplan	21.06.23	JR	PO
05	Amendments to the masterplan	15.06.23	JR	PO
04	Amendments to the masterplan	30.05.23	JR	PO
03	Amendments to the key	23.03.23	JR	PO
02	Amendments to the key	22.03.23	JR	PO
01	First Issue	16.03.23	TK	PO

Project
HWSFAC - Broadwater Lake

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Ecological mitigation and enhancement

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2121

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Project Status
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