



Note

Addendum to 'EIA Scoping Report - Hillingdon Water Sports Facility and Activity Centre (February 2023)'



1 Introduction

1.1 This note provides a response requests for clarification and further information raised by LBH in relation to the EIA Scoping Report for the Hillingdon Water Sports Facility and Activity Centre (HWSFAC) proposals submitted to London Borough of Hillingdon (LBH) on 23rd February 2023 (reference: 2382/APP/2023/525) together with a request for a formal scoping opinion. The issues raised were set out in a draft Scoping Report review report and were discussed with the LBH Planning Officer and Arup (acting as EIA advisors to LBH) at a meeting on 18th April 2023.

1.2 The issues raised were as follows:

- *More detail in the scheme description is required on the proposed dredging, creation of additional land/islands and the floating island to ensure the 'project' is appropriately defined.* (see Section 2)
- *More information is required to justify impacts associated with the topic of materials (in light of the proposed dredging) are not significant, with reference to the IEMA guidance 'Materials and Waste in Environmental Impact Assessment, 2020' IEMA - Materials and Waste in Environmental Impact Assessment - March 2020.* (see Section 3)
- *There is only a light touch consideration of socio-economic and health effects within the scoping report. It is acknowledged that this will be a replacement facility, but it will provide some benefits to the local and wider community – also noting the 'social benefits' highlighted as part of the VSC case. Health would not necessarily need to be scoped in but a standalone HIA Report exploring some of the beneficial aspects of the scheme should be considered.* (see Section 4)
- *Clarity is needed throughout the scoping report on how HS2 will be considered within the various assessment scenarios and future baseline.* (see Section 5)
- *The level of detail expected to be provided within the CEMP is not always clear – assumed it is an outline CEMP that will be updated with greater detail once the contractor is appointed?* (see Section 6)
- *Climate change greenhouse gas assessments cannot be scoped out without further assessment. Usually there would be an assessment around construction and materials.* (see Section 7)
- *Related to this, there isn't sufficient information available to scope out potential impacts on archaeology, particularly in areas where there are potential peat deposits. It may be there is existing borehole information available within the HS2 assessment work that could be reviewed to demonstrate the likely impacts.* (see Section 8)

1.3 In addition, this note provides a clarification on the existing uses at the Site to provide LBH with some further context of how it is used at present and how it will continue to be used as part of the Proposed Development (see Section 10).

1.4 Since submission of the EIA Scoping Report in February 2023 and the Applicant has voluntarily scoped a Landscape and Visual Impact Assessment (LVIA) into the EIA. This is due to further information about the scheme proposals being available and discussions with the Urban



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Design Officer at LBH. A description of the proposed scope and methodology for the LVIA is provided in Section 10 of this note (see Section 10).

1.5 Section 11 of this note also provides clarification on how air quality impacts will be assessed in the ES.

1.6 The following figures are provided in Annex 1:

- [Figure 1: Proposed Strategy for Dredging, Land Reclamation and Island Creation/Loss](#)
- Figure 2 Colne Valley Viaduct as shown in HS2 ES
- Figure 3 HS2 Landscaping as shown in Schedule 17 Application 74320/APP/2019/3187
- Figure 4: Existing Site Uses
- Figure 5: Zone of Theoretical Visibility

2 Proposed dredging, creation of additional land/islands and the floating island

2.1 Figure 1 in Annex 1 illustrates the proposed location and extent of areas of dredging proposed within Broadwater Lake and area of land reclamation on the existing Peninsula. Figure 1 also shows the existing islands that will be lost and the location and extent of islands that are proposed to be created.

2.2 The proposals require the removal of certain islands and the increase of lake depth in certain areas to facilitate sailing for HOAC. New islands will be constructed to create nesting and roosting habitat for birds using reclaimed lake bed / existing island materials to avoid the need to import materials. This also ensures the risk of introducing contamination to Broadwater Lake is minimised. The proposed approach will follow tried and tested methods, including direct experience at Fleet Pond SSSI (Hart District Council, planning reference 20/03004/FUL).

2.3 The target sediment type for recovery and reuse is gravel and sand. This is the dominant sediment type in the locations where lake depth increase is required. It is expected that the material will be recovered from the gravel dominated donor sites using a Longreach excavator located on a suitably sized pontoon. It will extract the sediment and place it (within one mechanical movement) into a shallow draft barge, which will then be towed across the lake to the relevant receptor site. This will occur within an area encircled by a turbidity curtain to prevent the dispersal of finer sediment particles.

2.4 At the receptor site, the perimeter of the islands will be installed. This could be a geotextile/post system or push piling. Other alternatives are also available including filled gabion baskets/mattresses. Wire whalings can also be added to prevent the spreading out of the perimeter whilst being filled.

2.5 At the receptor locations it is expected that a second excavator on pontoon will remove the material and place it into the pre-formed island perimeters. This sequence will be repeated until the desired surface level is achieved. Some silt/soil may be added to provide growth medium for the habitat islands, some may be left topped with gravel. The optimal conditions for the islands will be achieved if further material is placed around the external margins to provide a shallower 'littoral' zone suitable for plant establishment and wading birds. This can be combined with woody material obtained from elsewhere on site if available.



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- 2.6 The material required for the reclamation of the peninsula will likely be imported although the Applicant is exploring the availability of materials from aggregate uses to the south of the Site via the existing access road.
- 2.7 A method statement would be confirmed, and further detail provided in the ES and Draft CEMP. For any works subject to the Environmental Permitting Regulations the method statement and Draft CEMP will be prepared to satisfy the information requirements to obtain an environmental permit. We are currently in the process of organising a meeting with the Environment Agency to discuss these requirements.
- 2.8 As part of the Proposed Development, the HS2 mitigation island (see also Table 3 below) is proposed to be relocated Figure 1, Annex 1 shows the new location of the 'island' proposed as part of the mitigation for HS2 (the approved location in the Act is shown in Figure 2, Annex 1). The Applicant is currently in discussion with HS2 to ensure that the new location is acceptable and fulfils its purpose to mitigate the effects of HS2. As the island will be moved outside HS2 Act limits its delivery will be the responsibility of LBH.

3 Assessment of Materials

- 3.1 The IEMA *Guide to Materials and Waste in EIA* (2020) ('IEMA Guide') provides advice on identifying and assessing the significance of effects, including the identification of and assessment of sensitivity of potential receptors in EIA. The following receptors are considered sensitive to potential likely significant effects arising from the Proposed Development (as defined by the IEMA Guide):

- **Materials** are, in their own right, sensitive receptors. Consuming materials impacts upon their immediate and (in the case of primary materials) long-term availability; this results in the depletion of natural resources and adversely impacts the environment.
- For **waste**, the sensitive receptor is landfill capacity. Landfill is a finite resource, and hence – through the ongoing disposal of waste – there is a continued need to expand existing and develop new facilities. This requires the depletion of natural and other resources which, in turn, adversely impacts the environment.

Materials

- 3.2 The Proposed Development will give rise to a small amount of demolition material associated with the demolition of Broadwater Sailing Club and breaking up of concrete slabs which should be suitable for re-use within the site. Reasonable efforts will be made to reduce raw material consumption and ensure materials are used efficiently during construction through the CEMP.
- 3.3 The islands will be constructed from the islands that are lost and materials excavated from the lake and therefore no materials will need to be imported to the Site. It is anticipated that all dredging arisings from the lake will be re-used on Site..
- 3.4 In relation to the land reclamation at the Peninsula a minimal volume of materials will be required to be imported. The Applicant is exploring opportunities to import the material from the aggregates site to the south to avoid/minimise HGV movements on the local road network.
- 3.5 The construction of the buildings, structures and infrastructure will require a small amount of materials however given that the total floorspace is less than 4,000m².



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With reference to the IEMA Guide, the materials used on Site are unlikely to be greater than 1-5% of the regional baseline availability. As such, no significant effects are considered likely. Waste

- 3.6 Small volumes of construction waste (from wastage of construction materials) and operational waste would be generated. The exact volumes will be quantified and presented in the ES.
- 3.7 The Draft CEMP to be submitted with the planning application will outline the ways in which the Waste Hierarchy will be adhered to, and how waste will be managed during excavation and construction of the Proposed Development in order to avoid potentially significant effects.
- 3.8 Waste produced during demolition and construction would be subject to the 'Duty of Care' under the Environmental Protection Act and managed by the contractor in line with current legislation, guidance and best practices, with construction waste materials disposed of by the contractor/s to appropriate recycling facilities or appropriately licensed landfills. The Draft CEMP will include a Site Waste Management Plan and set out roles and responsibilities. The Site Manager will audit waste carriers and disposal facilities and maintain documentary evidence that these requirements are being met, including a register of waste carriers, disposal sites (including transfer stations) and relevant licensing details and testing for each waste stream.
- 3.9 Operational waste from the completed Development would only be produced in small volumes and would predominately comprise waste arisings from visitors and seasonal staff. This would be collected under waste disposal contracts with commercial operators. The Proposed Development will be designed to comply with LBH's recycling and waste requirements and ensure the provision of sufficient waste storage areas across the Proposed Development.
- 3.10 With reference to the IEMA Guide, the waste generated by the Proposed Development is unlikely to reduce regional landfill capacity by more than 1-5%. As such, no significant effects are considered likely.
- 3.11 Due to the future uses proposed, the Proposed Development will not produce hazardous waste materials (such as chemicals, medical waste, animal by-products etc).

Circular Economy Statement

- 3.12 In accordance with Policy SI7 of the London Plan, a Circular Economy Statement will be submitted with the planning application and will demonstrate:
 1. how all materials arising from demolition and remediation works will be re-used and/or recycled;
 2. how the proposal's design and construction will reduce material demands and enable building materials, components and products to be disassembled and re-used at the end of their useful life;
 3. opportunities for managing as much waste as possible on site;
 4. adequate and easily accessible storage space and collection systems to support recycling and re-use;
 5. how much waste the proposal is expected to generate, and how and where the waste will be managed in accordance with the waste hierarchy; and



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6. how performance will be monitored and reported.

3.13 Considering the above, no likely significant effects have been identified in relation to existing materials supply and stock or regional landfill capacity. As such, it is considered reasonable to scope a Materials and Waste Assessment of the EIA. However, in line with the EIA Regulations the ES will include quantities and types of waste produced during the construction and operation phases.

4 Socio-economics and Health Impact Assessment

4.1 The Proposed Development will create a new community asset, particularly for young people, and also provides excellent recreation and training facilities for those with disabilities. From a social and community perspective, the benefits of the Proposed Development will be very positive for these groups. A Social and Community Benefits statement will be submitted to support the planning case. However the social benefits are not considered to be significant at a population scale at the local or regional level. These benefits will be focused on the specific communities that the facility it serves. The employment created by the Proposed Development is not considered to be significant to the economy at the local or regional scale.

4.2 In terms of health impacts, while there will be health related benefits generated by the activities at the new facility for users. These health benefits are not considered to be significant at a population level either locally or regionally. Health related benefits will be set out within the Social and Community Benefit statement that will be submitted as part of the planning application.

4.3 Therefore in terms of socio-economic or health effects, while the proposals will generate benefits for users of the facility, these are not expected to be significant at a wider population level.

5 Approach to HS2 within the EIA (future baseline and assessment scenarios)

5.1 Land adjacent to the western boundary of the Site is currently subject to construction works associated with the planned HS2 development. This involves construction of the Colne Valley viaduct, a railway bridge stretching more than 3.4km across the lakes between Hillingdon and the M25. The viaduct will be around 10m above the surface of the lakes and the River Colne and Grand Union Canal will have a series of arches up to 80m long. The Colne Valley viaduct will cross the south-western corner of the Mid-Colne Valley SSSI close to the Site as shown in Figure 2, Annex 1. Construction of the Colne Valley Viaduct commenced in 2021 and is expected to be complete by 2025.

5.2 Information on the HS2 development and its associated environmental effects and influence at the Site have been extracted from the HS2 Environmental Statement (ES) (2013), Schedule



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17 application (reference: 74320/APP/2019/3187, submitted September 2019 to LBH¹ and the Local Environmental Management Plan (LEMP) for LBH².

5.3 Table 3 below lists the HS2 mitigation measures set out in the ES which were proposed to be implemented at or in the vicinity of Broadwater Lake (also shown on Figure 3, Annex 1).

Table 3 HS2 Mitigation Measures

Mitigation type	Description of indicative mitigation
Broadwater Lake wetland creation area	Approximately 0.5ha of wetland vegetation will be created along the western shore approximately 400m north of where the viaduct will be constructed.
Broadwater Lake tree planting area	Approximately 0.5ha of willow and alder trees in the south-west corner of this lake.
Broadwater Lake bird islands	Several new gravel islands/rafts will be created in the south-eastern corner to provide nesting opportunities for water birds.
Noise fence barriers	Noise fence barriers will be implemented along the majority of the viaduct, reducing the risk of collision of bats.

5.4 The Applicant is engaged in ongoing discussions with HS2 to co-ordinate habitat mitigation measures within the Site to better compensate changes to the habitat and coordinate improvements within the SSSI.

5.5 Construction of the viaduct is ongoing although a set out above, is expected to be complete in 2025. HS2 however is not expected to be fully operational until 2029 at the earliest. The following scenarios will be assessed in the ES:

- **Existing Baseline (2022/23)** – representative of existing conditions and uses (including sailing and angling) at the Site, inclusive of current HS2 construction works.
- **Future Baseline (2025)** – conditions at the Site in the absence of the Proposed Development comprising existing uses (sailing and angling) at the Site + completed HS2 Colne Valley Viaduct (no trains operating).

¹

https://planning.hillingdon.gov.uk/OcellaWeb/viewDocument?file=dv_pl_files%5C74320_APP_2019_3187%5C1MC05-ALJ-TP-REP-CS01_CL01-000007+-+Indicative+Mitigation+Details.pdf&module=pl

²

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1136677/P1S-HS2-EV-PLN-S000-000006_C01_5_.pdf



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- **Future Baseline (2029)** – conditions at the Site in the absence of the Proposed Development comprising existing uses (sailing and angling) at the Site + completed HS2 Colne Valley Viaduct (trains fully operational).
- **Construction Stage (2024)** – construction stage effects of the Proposed the Proposed Development will be assessed against the Existing Baseline which is inclusive of the HS2 construction works. This assessment will include reasonable worst-case construction activities of HS2.
- **Operational Stage (2025)** – operational stage effects of the Proposed Development will be assessed against the Future Baseline (2025), i.e. the completed HS2 Colne Valley Viaduct (but no trains in operation).the Proposed Development
- **Operational Stage (2029)** – operational stage effects of the Proposed Development will be assessed against the Future Baseline (2029), i.e. the fully completed HS2 Colne Valley Viaduct with trains fully operating. the Proposed Development

5.6 Consideration will also be given for potential slippage of the HS2 construction programme as a sensitivity test. This could mean that HS2 construction works are ongoing once the Proposed Development is complete and operational. There could be potential impacts to the new users of the Proposed Development (e.g. from noise and dust) however these would be temporary in nature. It is also expected that the peak construction activities for HS2 in this location would be completed by this stage and therefore effects associated with slippage to the HS2 construction programme are unlikely to lead to significant environmental effects.

5.7 Operational assumptions and parameters at Broadwater Lake are being agreed with HS2.

6 Level of Information to be Provided in the CEMP

6.1 The Applicant intends to submit a Draft Construction Environmental Management Plan (CEMP) and a Construction Logistics Plan (CLP) with the planning application. The Draft CEMP will form part of Employer's Requirements. Once appointed, the Principal Contractor will be responsible for refining/finalising the Draft CEMP to ensure that it is specific to the works and processes that are to be employed during all enabling, demolition and construction activities.

6.2 The aim of the Draft CEMP is to ensure there are measures in place to mitigate environmental impacts from the construction activities that will take place to deliver the Proposed Development.

6.3 The structure of the draft CEMP will be as follows:

- Executive Summary
- Introduction
 - Purpose of Draft CEMP
 - Scope
- Site Information and Description of Development
 - Site Location and Setting
 - Environmental Sensitivities



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- Description of Development
- Environmental Policy, Responsibilities and Communication
 - Environmental Policy
 - Key Roles and Responsibilities
 - Management Structure
 - Individual Requirements
 - Collective Responsibilities
 - Training and Site Rules
 - Communication and Community Engagement
- Indicative Demolition and Construction Programme
- Description of Construction Works and Construction Method Statement
 - Site Layout and Compound Locations
 - Enabling (including set up, protective measures, site clearance and demolition)
 - Landscaping/ Ecological Mitigation
 - Excavation and Piling
 - Utilities
 - Lake Civils
 - Canal bridge
 - Sub-structure
 - Super-structure
- General Construction Management Measures
 - Access and Parking
 - Hours of Work
 - Protective Measures for Existing Users
 - Emergency Vehicle Access
 - Security
- Site Waste Management Plan
 - Demolition and excavation waste (terrestrial)
 - Dredging waste volumes
 - Construction waste volumes
 - Sustainable waste management
 - Environmental Permitting
 - Contaminated Land
 - Materials Management & Stockpiling
- Environmental Management and Control Measures
 - Ecology
 - Arboriculture
 - Water Resources Management and Pollution Prevention
 - Noise and Vibration
 - Dust and Emissions



Note continued

- Lighting
- Contaminated Land
- Emergency Preparedness and Response
- Environmental Monitoring, Audit and Reporting
 - Terrestrial Environment
 - Water Environment
 - Audit Process
 - Reporting
 - CEMP Review

7 Assessment of Greenhouse Gases

7.1 With reference to IEMA's Guidance document, *Environmental Impact Assessment Guide to: Climate Change Resilience and Adaptation*, IEMA have published a subsequent guidance document in 2022, *Assessing Greenhouse Gas Emissions and Evaluating their Significance* (the '2022 IEMA Guidance'). Specifically, the 2022 IEMA Guidance presents more nuanced levels of significance. The (former) 2017 Guidance³ stated that "...in the absence of any significance criteria or defined threshold, it might be considered that all GHG emissions are significant...". The updated guidance does not change IEMA's position (or the science) that all emissions contribute to climate change, however specifically in the EIA context it now provides relative significance descriptions to assist assessments.

7.2 The 2022 IEMA Guidance has defined five distinct levels of significance which are not solely based on whether a project emits GHG emissions alone, but the degree to which the project's GHG emissions are consistent with science-based 1.5°C aligned emission trajectories towards net zero.

7.3 To establish the significance of the GHG emissions from a Development therefore requires judgements on:

- their consistency with policy requirements, since these have been specified to ensure the economy decarbonizes in line with the UK's net zero target; and
- the degree to which the Proposed Development has sought to mitigate its emissions.

7.4 The Development's primary emissions relate to embodied carbon from construction materials, construction and operational traffic and energy use. These sectors are forecast to decarbonise fully by 2050 based on national policy measures. The Development will include primary design measures and further operational measures that are consistent with national and local policies to decarbonise its emissions to net zero by 2050. The effects of the Proposed Development

³ IEMA (2017) Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance. Available at: <https://www.iema.net/preview-document/assessing-greenhouse-gas-emissions-and-evaluating-their-significance>



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on climate change are therefore judged to be not significant as it is consistent with applicable existing and emerging policy requirements and is in line with good practice design standards for projects of this type.

7.5 A Whole Life Carbon (WLC) assessment will be submitted with the planning application in line with Local Plan policy. This will be carried out in accordance with the 'London Plan Guidance March 2022 Whole Life-Cycle Carbon Assessments' and will demonstrate the actions that have and will be taken to reduce WLC emissions. The assessment will cover the Proposed Development's carbon emissions over its life-time, accounting for:

- Any carbon emissions associated with pre-construction demolition.
- Any carbon savings associated with the retention, reuse and recycling of existing structures and materials that are already on-site.
- Its operational carbon emissions (both regulated and unregulated).
- Its embodied carbon emissions.
- Any future potential carbon savings post end-of-life, including savings from reuse and recycling of building structure and materials. Any future potential carbon emissions 'benefits', post 'end of life', including benefits from reuse and recycling of building structure and materials.
- Consideration will be given to the methodology provided by BS EN 15978:2011 and the RICS professional statement: whole life carbon assessment for the built environment.

7.6 The ES will also include a description of the adaptation and resilience measures incorporated into the design to avoid impacts of climate change.

8 Assessment of Archaeology

8.1 The Scoping Report was accompanied by a desk-based assessment prepared by Border Archaeology (dated July 2021) however this did not cover the full extent of the Site. A DBA for the whole Site has been prepared by RPS and will be submitted with the planning application and will include a geoarchaeological deposit model.

8.2 The scope of the geoarchaeological deposit model is being agreed with Greater London Archaeology Advisory Service.

8.3 The following entries relating to geoarchaeological investigation have been obtained from Greater London Historic Environment Records:

- *167358 Test Pit at Colne Valley Viaduct to the immediate south-west of the southern entrance to the Site. Thirty-three test pits were excavated along a 13KM stretch of the Colne Valley, between Denham (to the south) and Rickmansworth (to the north). The test pits were undertaken as part of the enabling works for High Speed Two Phase One. The fieldwork took place between December 2018 and June 2020. The test pit locations were selected to address various construction programme risks, including; rail alignment formation of the proposed Colne Valley Viaduct and associated piers, a haul road, satellite construction compounds, attenuation ponds, temporary earthwork storage stockpiles, flood compensation areas and ecological mitigation ponds, below-*



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and above-ground services, and green landscaping. Following the conclusion of the field work, a geoarchaeological deposit model was created by the Archaeological Contractor, incorporating data from 140 borehole logs. Five distinct deposit formations were identified on the site; tertiary geological deposits in the form of Lambeth Group and Chalk head, Pleistocene gravels, Holocene alluvium, Holocene colluvium and modern made ground. No cut features were observed in any of the test pits. No artefacts pre-dating the post-Medieval period were recovered from the site.

- *169817 Geotechnical Test Pit at Broadwater Gardens circa 100m east of the Site. A Geoarchaeological examination and analysis of peat deposits from two small trenches took place at Broadwater Gardens. The samples indicate organic sediments accumulating both around 9700 BP and 5000 BP (i.e.: early Mesolithic and Neolithic periods). No archaeological material was found in association with these sediments.*

9 Scope of Landscape and Visual Impact Assessment

9.1 The Applicant has decided to voluntarily scope an assessment of landscape and visual impact assessment (LVIA) into the ES.

9.2 The LVIA will assess the potential significant direct and indirect effects of the Proposed Development on landscape character and visual amenity. This will be assessed at construction as well as operational stages in Winter as to represent a worst-case scenario for visual permeability with minimal vegetation cover.

9.3 The LVIA will include a thorough evaluation of the landscape character identifying its inherent attributes. The landscape character assessment will form the preliminary stages of the LVIA with assessment of the sensitivity of the Site and its robustness to change that are derived from the landscape value of the Site.

9.4 A 3km radius Zone of Theoretical Visibility (ZTV) study and field study has been undertaken to establish where views or part views of elements of the Proposed Development may be experienced from (see Figure 4, Annex 1). The following viewpoints have been agreed with LBH's Urban Design Officer for inclusion in the assessment:

- VP02 // Grand Union Canal towpath
- VP03 // Hillingdon Trail
- VP07 // Denham station pedestrian bridge
- VP12 // Old Shire Land Circular Walk above West Hyde

9.5 These viewpoints will be assessed using visualisations which will be produced in accordance with Landscape Institute Technical Guidance Note 06/19 – Visual Representation of Development Proposals (The Landscape Institute, 2019)⁴ Type 2 to 4.

⁴ Landscape Institute Technical Guidance Note 06/19 – Visual Representation of Development Proposals (The Landscape Institute, 2019)



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9.6 The LVIA will be guided by the approach set out in the GLVIA3, 2013 and draw upon the good practice guidance in Landscape Institute Technical Note 06/19.⁵

10 Existing Uses at Broadwater Lake

10.1 The EIA Scoping Report included Table a description of the existing uses at Broadwater Lake. The nature, frequency and timing of these uses have updated based on further discussions with the BSC and Applicant. Existing users of the access road and canal are also outlined. Figure 5 shows the extent of the main existing uses at the Site. These assumptions will inform the baseline assessment in the ES.

Table 1: Existing site uses

Use / User	Nature of Use
Sailing (Broadwater Sailing Club)	<p>Access: Members and visitors access the Broadwater Sailing Club (BSC) from Moorhall Road via the access road on the eastern side of the lake. An unsurfaced parking area is available in the north of the lake for approximately 45 vehicles.</p> <p>Facilities: Single storey clubhouse (260m²) and three containers used for storage Boat parking for approximately 200 small boats 3 concrete slipways 3 floating pontoons</p> <p>Sailing Area: Sailing uses are restricted to dinghies (up to 16 ft.) only in the northern part of the lake as shown in Figure 5. Dinghies are also not allowed to sail within 20m of the lake shore and no more than 50 boats are allowed to sail on the lake at any one time. These restrictions and the extent of the sailing area are secured through the BSC planning permission (ref: 2382Y/86/739 and 2382Z/86/1291) and lease Dated 16 October 2006. The southern area of the lake is kept as an undisturbed area for wildfowl following agreements with Natural England.</p>
	<p>Nature of Operational Use BSC currently use Broadwater Lake as follows:</p>

⁵ Landscape Institute (2019) TGN 06/19 Visual Representation of development proposals. Available at: <https://www.landscapeinstitute.org/visualisation/>



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Use / User	Nature of Use
	<ul style="list-style-type: none">• Members are allowed to sail 365 days per year from one hour after dawn to one hour before dusk (typical use 2 to 3 boats).• Sunday morning sailing race series from approximately 08:30 to 14:00 throughout the year, with race starts at 10:00 and 11:45 (typical use 20 to 25 boats).• Sailing Class Opens and Club Regattas are held on various Saturdays and Sundays during the year, with race starts after 10:00 (up to 40 boats).• Wednesday morning informal race series during the 'winter months' (October to March), race start at 11:00 often followed by members lunch (typically 20 to 25 boats).• Wednesday afternoon informal race series during 'summer months' (April to September), with race start at 17:00 (typically 15 to 20 boats).• Wednesday evening race series during 'summer months' with race start at 19:00 (typically 20 to 25 boats).• Saturday afternoon Junior Sailing and Family Sailing, May through end September approximately 12:00 to 18:00.• Other Club sailing and social events will be organised and held on various Saturdays and/or Sundays during the year.
Angling (Gerrards Cross & Uxbridge District Angling Society, British Carp Study Group)	There are eight pitches on the lake perimeter that are used for angling. The shoreline of the lake used for angling is shown on Figure 5. The lake is closed for angling between 15th March to 15 th June.
Unauthorised uses	<p>The following unauthorised uses have been reported at the Site:</p> <ul style="list-style-type: none">• Poaching of deer, ducks and geese, and carp and pike from the lake• Dog walking and leisure walking• Open water swimming• Fly tipping• Timber harvesting

11 Assessment of Air Quality

11.1 The response to the EIA Scoping Report from the Air Quality specialists at LBH (dated 22 March 2023) requested that the following potential impacts are scoped into the EIA:



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- Emissions of dust and particulate matter (PM_{10}) from construction activities on-site
- Emissions of nitrogen dioxide (NO_2) and $PM_{10/2.5}$ from construction vehicles leaving and accessing the Site
- Effect of development on NOx concentrations and N critical loads due to emissions from traffic associated with the Proposed Development once operational
- Air Quality Neutral
- Air Quality Positive

11.2 During demolition and construction works, there is the potential for air quality effects related to annoyance due to dust soiling; harm to ecological receptors; and the risk of health effects due to a significant increase in exposure to PM_{10} . The standard assessment procedure assumes no mitigation measures are applied, except those required by legislation. However, mitigation measures will be implemented to minimise and control dust at source during construction which will be implemented as part of the CEMP. These will be detailed through the method statements and will include measures such as hoarding, water suppression, surface treatment of the access road and covering of transport vehicles. Method statements will be based on industry standard guidance published by the Greater London Authority (GLA) and the Institute of Air Quality Management (IAQM)⁶, upon which the GLA's guidance is based.

11.3 Assuming the effective implementation of such measures through the CEMP, dust and fine particulate matter during the demolition and construction phase is not expected to give rise to significant adverse effects on sensitive receptors. The Biodiversity chapter within the ES will be informed by a construction phase dust assessment which will be undertaken in line with IAQM guidance. This will be appended to the ES.

11.4 The main pollutants of potential concern related to road traffic emissions are NO_2 and particulate matter (PM_{10} and $PM_{2.5}$). Due to the nature of the Proposed Development and predicted levels of vehicular use, the emissions from road traffic associated with the operational Development are not likely to have significant effects. This will be confirmed once the operational traffic data become available.

11.5 The assessment of operational effects from road traffic on designated sites (including SSSIs, ancient woodland, Local Nature Reserves etc, as deemed appropriate) will be covered in the Biodiversity chapter of the ES. Traffic screening thresholds will be applied to determine any potential for significant effects.

11.6 The air quality neutrality of the proposed Development will be assessed following the methodology provided in the latest GLA's London Plan guidance (Air Quality Neutral). Mitigation will be recommended, if required, to ensure that the proposed Development meets the air quality neutral requirements.

11.7 The GLA's guidance on Air Quality Positive⁷ states that an Air Quality Positive statement is required for development briefs including large-scale development sites that are likely to be

⁶ IAQM, (2014). Assessment of dust from demolition and construction.

⁷ https://www.london.gov.uk/sites/default/files/air_quality_positive_lpg_-_consultation_draft_0.pdf



Note continued

subject to an EIA. Thus an Air Quality Positive statement will be included within the air quality assessment which will accompany the planning application.

- 11.8 In summary, the ES will assess impacts of air quality on ecological receptors in the Biodiversity chapter in line with good practice. Air Quality Neutral and Air Quality Positive will also be assessed the stand alone Air Quality Assessment which will accompany the planning application.
- 11.9 The Air Quality Assessment submitted with the planning application will verify that the Proposed Development will not result in unacceptable levels of air quality on sensitive receptors.

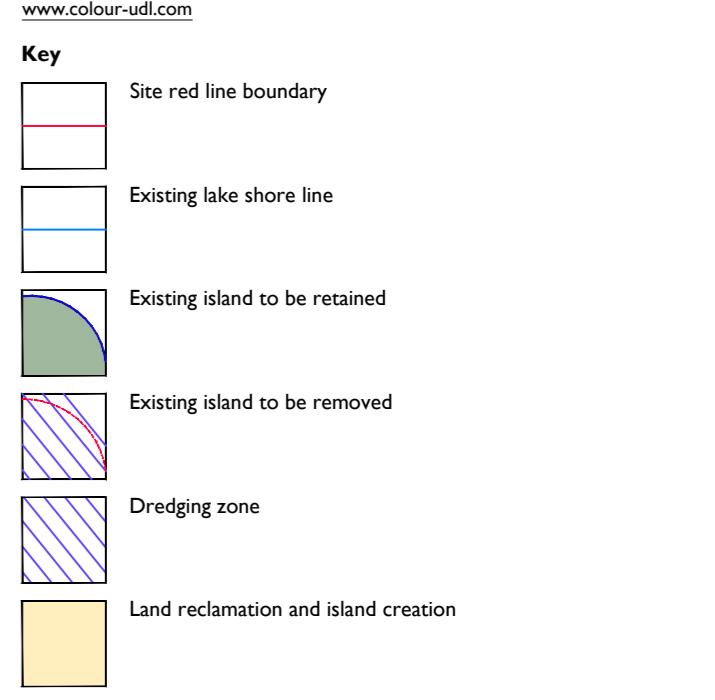


Annex 1



Note continued

Figure 1: Proposed Strategy for Dredging, Land Reclamation and Island Creation/Loss



1 Visual / refuge habitat :
 - infill with reedbeds
 - shallow reefs
 - tern rafts within open water
 - 10m wide connection to main lake

2 Reed beds creating discrete open water channel along western margin. To be kept open with periodic maintenance

3 n.a.

4 Keep existing entrance to Broadwater Lake Sailing Club for emergency access & retain track to jetty

5 n.a.

6 n.a.

7 Scalloped reclaimed land creating bays of reeds for young fish and sheltered angling stations, accentuated and protected by semi-circular planting of native shrubs (see sections)

8 n.a.

9 n.a.

10 Reprofile sediments area to required 2m depth for sailing with turbidity curtain to limit water quality effects until sediment settled

11 n.a.

12 Reprofile sediment and create new islands with marginal shallows for nesting birds - these can be omitted if loss of open water is a concern for stakeholders.

13 n.a.

14 n.a.

15 n.a.

16 n.a.

17 Enhance water connectivity between lagoon and lake

18 n.a.

19 n.a.

20 n.a.

21 n.a.

22 n.a.

23 n.a.

24 Reclaimed land with scattered native trees to visually break up areas of existing building and long-term grassland areas to create more biodiversity. The seed and plant mix for reclaimed land would only serve to make this area attractive. Although it has low potential to benefit bats (due to lighting), green walls and green roofs if feasible could be installed on buildings for invertebrates and to integrate buildings into the landscape. Judiciously located nectar planting planning would enhance the area although openness is important to minimise potential sheltering of wind for sailing.

25 n.a.

26 n.a.

27 n.a.

28 n.a.

29 n.a.

30 n.a.

31 Create islands in shallowest parts of the lake to create protective water to the west of the lake

32 Proposed HS2 floating mitigation island

33 Enhance as dabbling areas for birds

34 Deeper channels for water circulation

35 Include tethered habitat rafts with solar panel to power bubbling aerators in areas of semi-enclosed water. Integrated into the masterplan for climate adaptation based on monitoring of the dissolved oxygen levels across the lake over a period of months / years

NOTE

(1) 11:04:23 Layout to be amended on receipt of formal Natural England comment

(2) Red line boundary is to be confirmed in some locations

(3) Engineering drawings to be produced by Matthew John Associates & Furness

01 First Issue 16.03.23 TK PO
 Rev Amendments Date Drwn Chkd

Project HWSAC

Drawing Title General arrangement plan
 Proposed strategy for dredging, land reclamation and island creation / loss

Project No. 2121 Scale @ A1 1:2500

Drawing No. HWSAC-COL-00-XX-DR-L-1011 Project Status For approval

London 0203 924 9888
 Newcastle 0191 24 24 224
 York 01904 925 888

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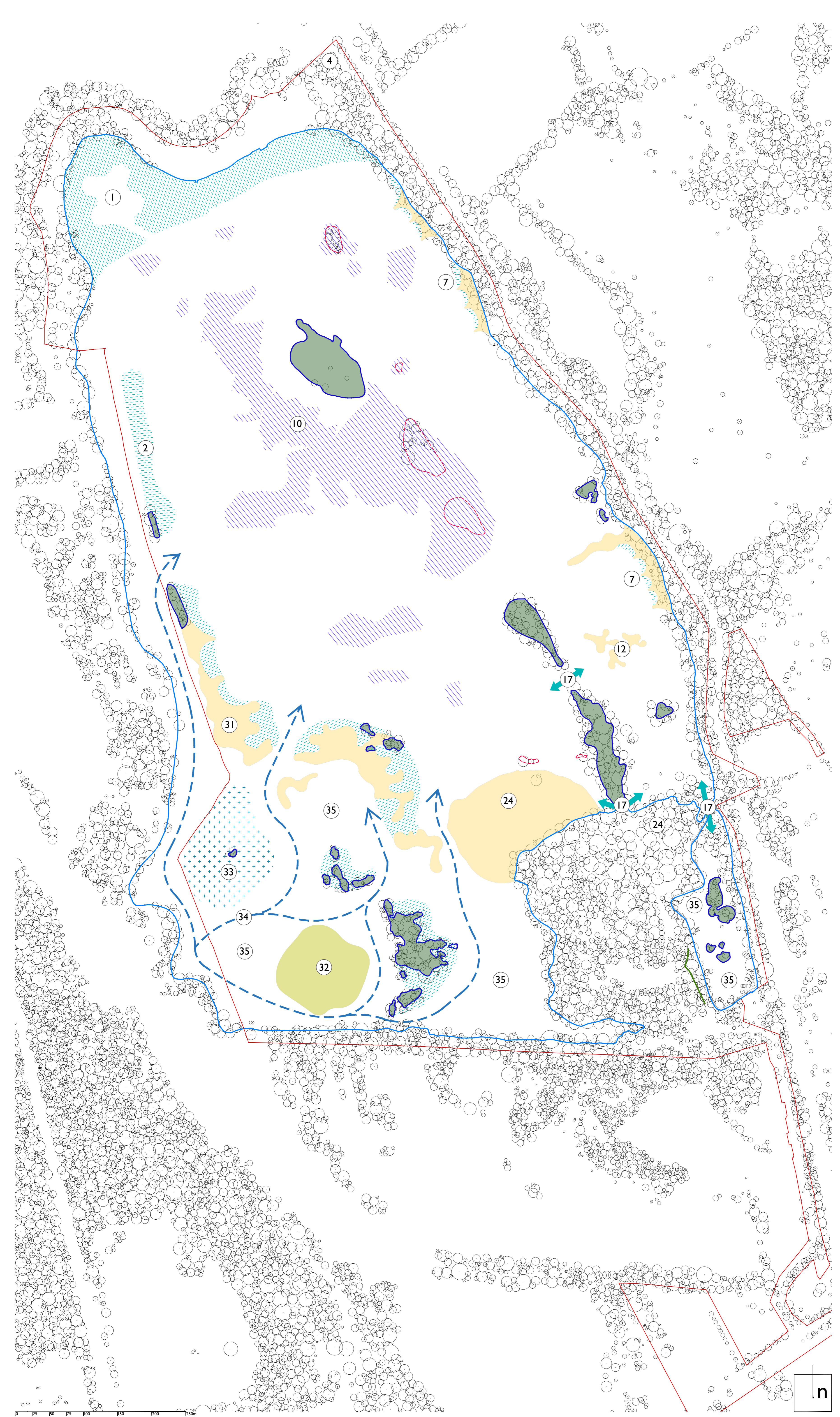


Figure 2 Colne Valley Viaduct as shown in HS2 ES

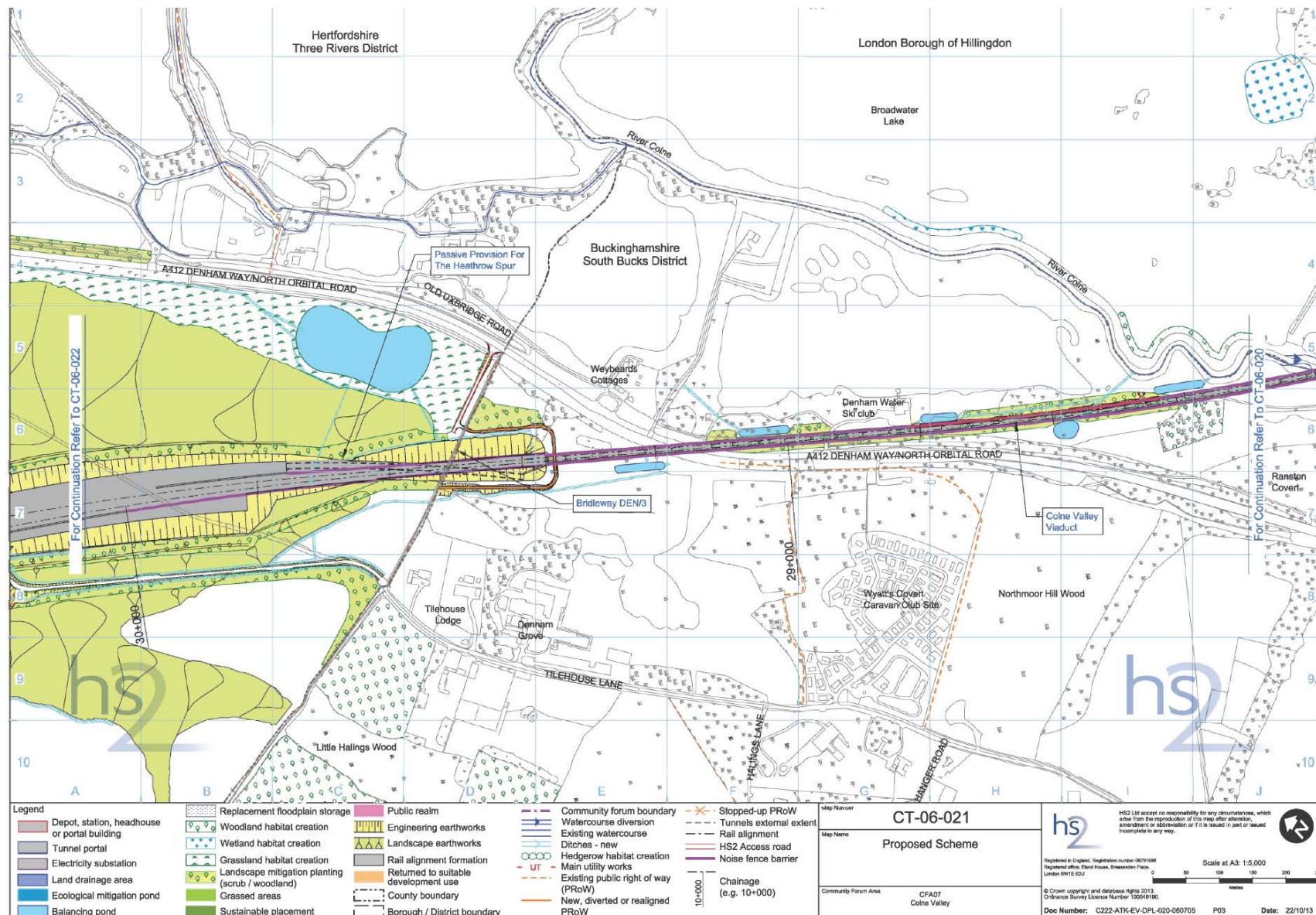
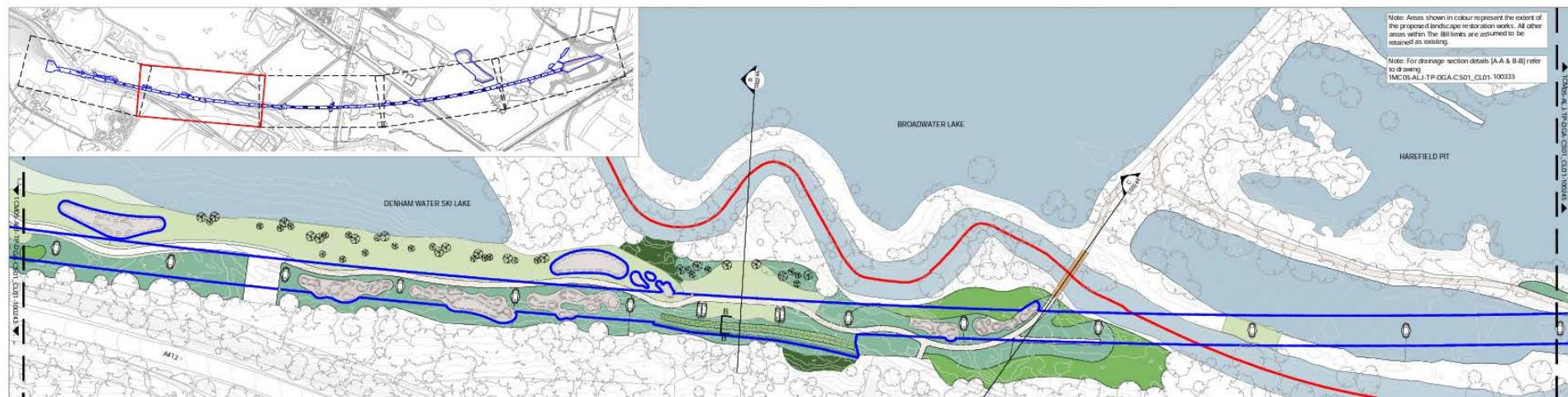




Figure 3 HS2 Landscaping as shown in Schedule 17 Application 74320/APP/2019/3187





Note continued

Figure 4: Zone of Theoretical Visibility

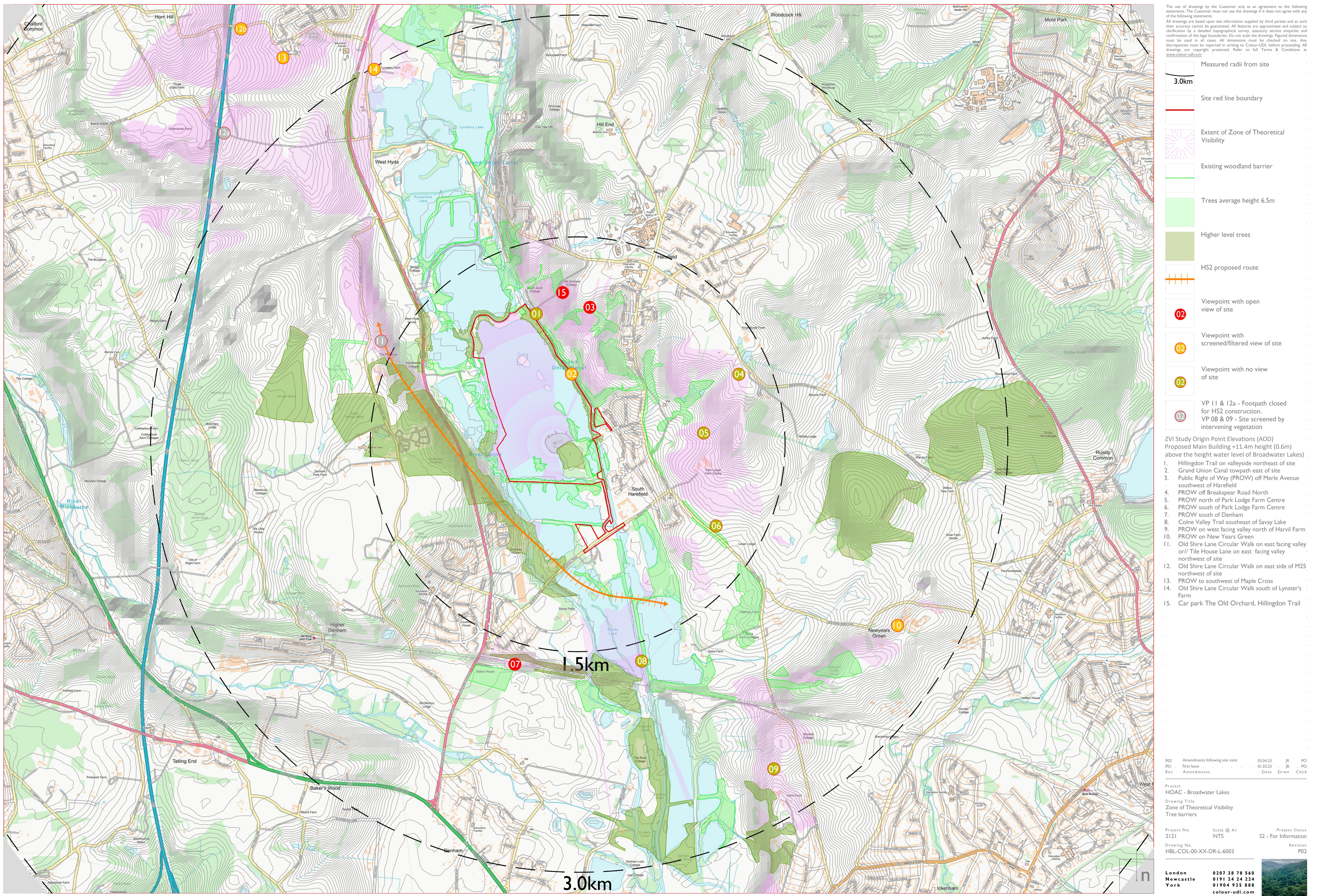
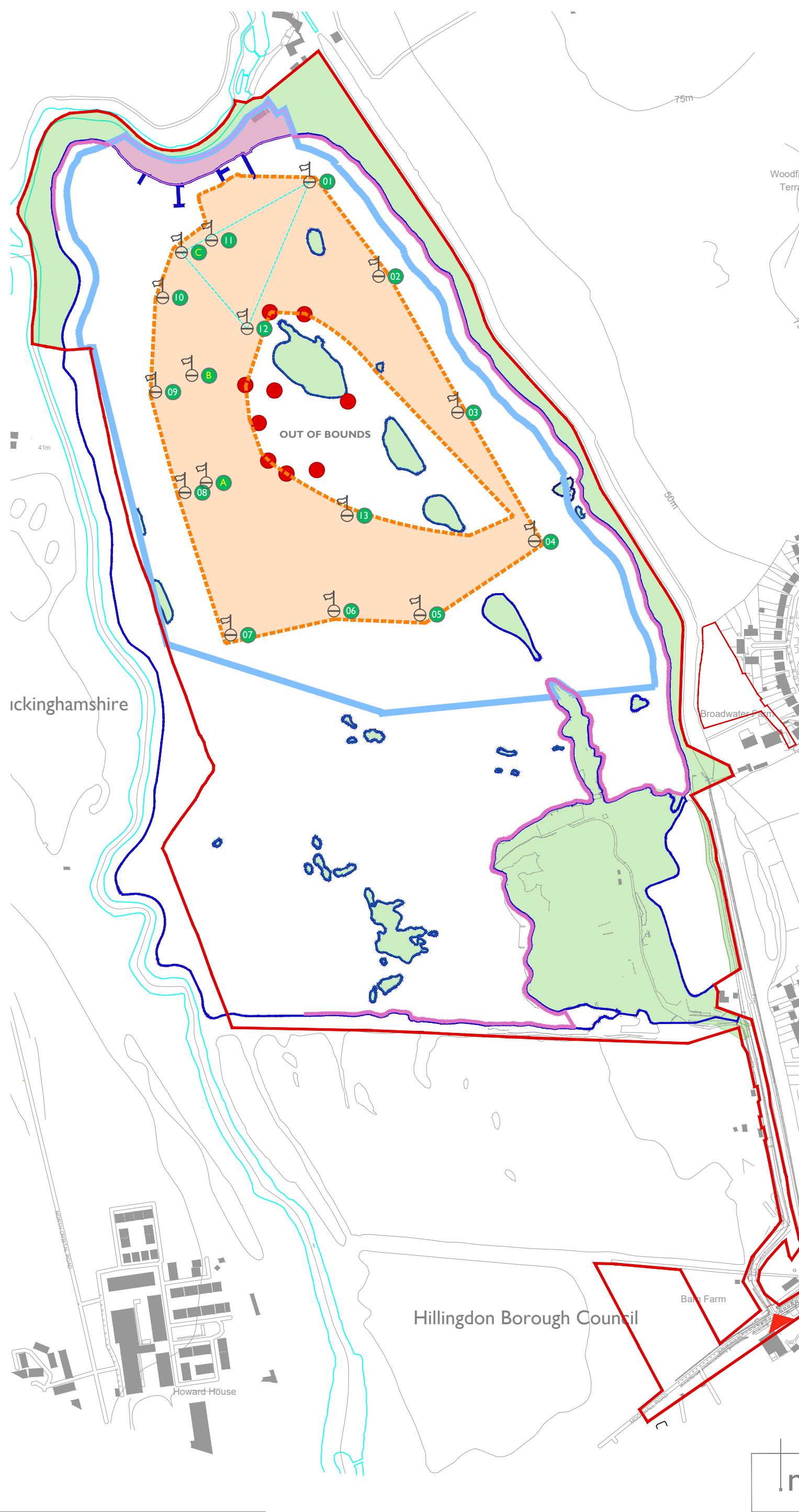




Figure 5 Existing Sites Uses



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Scale
Red line boundary
Shore approved for angling
Actual regular sailing area as used by BWSC
Approved area for sailing Date: 16th October 2006 Maximum 50 boats as any one time
BWSC buoys
Existing BWSC
Unauthorised poaching & antisocial behavior

01 First Issue
Rev Amendments
JR Date Drwn PO

Project
2121 HOAC Broadwater Lakes

Drawing Title
Existing uses of the site

Project No.
2121
Scale @ A2
NTS
Drawing No.
HOACBW-COL-00-XX-DR-L-1005

Project Status
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