

One Horton Heath

Northern Green Infrastructure (GI) Biodiversity Net Gain (BNG) Assessment

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Report prepared for:

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Main contributors:

Lexi Dowson-Wallace BSc (Hons) MSc ACIEEM

Senior Ecologist

Nicole Evans BSc (Hons)

Assistant Ecologist

Reviewed by:

Liz Johns BSc (Hons) MSc CEnv MCIEEM MRSB

Director

Green Tree House, 11 St Margaret's St, Bradford on Avon, Wiltshire, BA15 1DA
T: 01225 723652 | E: info@johnsassociates.co.uk | W: www.johnsassociates.co.uk

DOCUMENT REVISIONS

Version	Details	Date
1.0 Draft	Draft Northern GI BNG Report issued to Client for review	08/01/24
1.1 Final	Final Northern GI Parcel BNG Report issued to Client for submission. Updates to post-development hedgerow BNG included. Pending an addendum with River BNG results.	09/02/24

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NON-TECHNICAL SUMMARY

Purpose of the Report	To provide information baseline condition assessments of OHH Northern GI Parcel and to provide the Statutory Biodiversity Metric assessment results of the post-development habitat BNG.
Proposed Development Information	The proposals will include construction of the Northern Green Infrastructure including open space landscaping, bridleways, footpaths, SuDS, play areas and ecological and biodiversity enhancements at One Horton Heath.
Surveys Undertaken	An extended Phase 1 habitat survey of the Site was conducted in 2018-2020. An updated UKHab habitat survey was conducted on 1 and 13 March 2023 to transpose the Phase 1 survey results into UKHab and to provide condition assessment results for the habitats present. A Statutory Biodiversity Metric BNG assessment has then been conducted for the Northern GI Parcel of OHH and a summary of the results is provided within this report. The Statutory Biodiversity Metric spreadsheet calculator is provided separately to this report.
Summary of Results	- The baseline value of the area-based habitats within the development area (Phases 5D-5F) is 37.47 units. - The baseline value of the hedgerows is 5.70 units. - Following the assessment, it is anticipated that the value of the post-development area-based habitats within the development area will be 45.68 units. The trading rules are satisfied. - The post-development value of the hedgerows is 6.71 units. The trading rules are satisfied. - The proposals will therefore result in a net gain of 21.90% for habitat units, and a net gain of 17.85% for hedgerow units.
Conclusions	If the recommendations for the creation and management of new habitats written here are adhered to, it is considered likely that the development will exceed the mandatory requirement for development to enhance the ecological value of a site by a minimum of 10% which is outlined within the Environment Act 2021 and will become a statutory requirement from February 2024. However, this is for habitat units only.
Monitoring & Management	A 30-year Habitat Monitoring and Management Plan (HMMP) will be implemented on Years 1, 2, 3, 5, 7, 10, 15, 20, 25 and 30.
Data Valid Until	February 2025

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1 INTRODUCTION

1.1 BACKGROUND

Johns Associates Ltd was commissioned by the One Horton Heath team on behalf of Eastleigh Borough Council to provide a Statutory Biodiversity Metric Biodiversity Net Gain (BNG) assessment of the Northern GI Parcel development (hereafter referred to as the "Site"). The central Ordnance Survey (OS) grid reference of the Site is SU 48908 17742, and the Site location is shown in Figure 1. This assessment will supersede and update all previous BNG assessments conducted for the Site and will form the baseline from which all future monitoring of the Site will be compared and assessed against.

The assessment has been informed by previous habitat surveys conducted at the Site in 2018, 2019 and 2020 conducted in season and by an updated UKHab assessment in early March 2023 with further walkover updates in July 2023 to ground truth the transposition of the previous Phase 1 Habitat survey into UKHab habitat survey results.

The proposed development has been designed in full accordance with the Development Plan and Outline Planning Application (OPA) O/20/89498, which has a resolution to grant consent subject to S106 negotiations relating to education. The application is for full planning consent due to the time for these negotiations to complete. Submitting details of the Green Infrastructure Landscaping (GI) as a full planning application will deliver the GI in accordance with, and as part of the OPA, but enable commencement more quickly than waiting for the resolution of the OPA S106 and the determination of an application for reserved Matters Approval of details of the GI.

1.1 SUMMARY OF PROPOSALS

The proposals will include construction of the Northern Green Infrastructure including open space landscaping, bridleways, footpaths, SuDS, play areas and ecological and biodiversity enhancements at One Horton Heath.

1.2 PURPOSE OF THIS REPORT

This report has been produced to provide the Statutory Biodiversity Metric BNG assessment for the Site based upon the previous Phase 1 Habitat survey baseline results conducted in July/August 2018, August 2019, and July/August 2020. The Site was re-surveyed in March 2023 using the UKHab system to convert the previous Phase 1 habitat survey results into the most current system at the time for habitat survey and condition assessment.

The post-development landscape and ecological plans produced by Deacon Design have informed the post-development BNG calculations and the plans were designed with ecological advice and through consultation with the landscape team and Eastleigh Borough Council ecology team to avoid loss and degradation of habitats of higher distinctiveness, and to maximise the BNG through the proposed plans connecting habitats within the Site to the wider landscape.

1.3 STATUTORY BIODIVERSITY METRIC

The Statutory Biodiversity Metric uses habitat as a proxy for overall biodiversity within different habitat types. Habitats are assigned a value based on their intrinsic biodiversity value or 'distinctiveness', which is predefined for each habitat within the metric. This value is then multiplied based on the size, condition, and geographical location of the habitat in order to ascertain its absolute value in 'biodiversity units'. Separate calculations are used within the metric for area-based habitats, linear habitats (such as hedgerows) and watercourses (including ditches and streams). These units are non-transferable and must therefore be considered individually for each project or development. Hereafter they will be

referred to as “habitat units”, “hedgerow units” and “river units” respectively. Collectively, they will be referred to as “biodiversity units”.

Natural England provides a Calculation Tool with all calculations built in to aid in the assessment process. This report should be read in conjunction with the Calculation Tool provided for the assessment of this Site.

Underlying this assessment process are a key set of principles which explain the intended use of the Metric. They are as follows:

- Principle 1 – The metric assessment should be completed by a competent person;
- Principle 2 – The use of this biodiversity metric does not override existing biodiversity protections, statutory obligations, policy requirements, ecological mitigation hierarchy or any other requirements. This includes consenting or licensing processes, for example woodlands;
- Principle 3 – This biodiversity metric should be used in accordance with established good practice guidance and professional codes;
- Principle 4 – This biodiversity metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice;
- Principle 5 – Biodiversity units are a proxy for biodiversity and should be treated as relative values;
- Principle 6 – This biodiversity metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance;
- Principle 7 – Habitat interventions need to be realistic and deliverable within a relevant project timeframe;
- Principle 8 – Created and enhanced habitats should be, where practical and reasonable, local to any impact and deliver strategically important outcomes for nature conservation; and
- Principle 9 – This biodiversity metric does not enforce a minimum habitat size ratio for compensation of losses. Proposals should aim to:
 - maintain habitat extent - supporting more, bigger, better and more joined up ecological networks;
 - ensure that proposed or retained habitat parcels are of sufficient size for ecological function.

During the process of undertaking a biodiversity net gain assessment using the Statutory Biodiversity Metric, the following rules must be followed to ensure its proper use:

- Rule 1 – The trading rules of this biodiversity metric must be followed;
- Rule 2 – Biodiversity unit outputs, for each type of unit, must not be summed, traded, or converted between types. The requirement to deliver at least a 10% net gain applies to each type of unit;
- Rule 3 – To accurately apply the biodiversity metric formula, you must use the biodiversity metric calculation tool or small sites biodiversity metric tool (SSM) for small sites. The tools remove the need for a user to manually calculate the change in biodiversity value. The tool will summarise the results of the calculation and inform a user whether the biodiversity net gain objective has been met;
- Rule 4 – In exceptional ecological circumstances, deviation from this biodiversity metric methodology may be permitted by the relevant planning authority.

1.4 PERSONNEL

The updated Condition Assessments and BNG calculations were led by Lexi Dowson Wallace BSc (Hons) MSc ACIEEM and supported by Tessa Pepler BSc (Hons) MSc MCIEEM. Lexi is a Senior Consultant at Johns Associates who has worked as an ecological consultant since 2015. Lexi is highly experienced in conducting BNG assessments and is the BNG Lead at Johns Associates.

Tessa is a Principal Ecologist at Johns Associates who has worked as an ecological consultant since 2005 and has a BSc (Hons) in Environmental Studies and an MSc in Ecology and Management of the Natural Environment. Tessa is a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) and holds Natural England Class 1 survey licences for bats, great crested newts and dormice.

1.5 LEGISLATION AND POLICY

The relevant legislation and national and local planning policies which are relevant to this assessment are provided in Appendix A to this report.

Figure 1: Site Location



2 METHODOLOGY

2.1 STRATEGIC SIGNIFICANCE

As part of the BNG assessment, habitats are afforded different levels of strategic significance, which describes the local significance of the habitat based on its location and the habitat type. Habitats were assigned a strategic significance value using the Biodiversity Action Plan (BAP) for Eastleigh Borough 2012-2022 and the Hampshire Ecological Network Mapping document provided as part of the data search by HBIC. The strategic significance is assigned to be high, moderate, and low.

2.2 DISTINCTIVENESS

For the purpose of the metric assessment, distinctiveness refers to the relative scarcity of the habitat and its importance for nature conservation. The actual values assigned to each habitat type used in the metric are given in the Technical Supplement. These are automatically applied by the calculator tool based on the habitat type.

2.3 HABITAT CLASSIFICATION AND CONDITION ASSESSMENT

2.3.1 UKHab Field Survey

A UKHab survey of the Site was undertaken on 1 and 13 March 2023 by experienced ecologists Tessa Pepler BSc (Hons) MSc MCIEEM and Lexi Dowson-Wallace BSc (Hons) MSc ACIEEM from Johns Associates Ltd. The weather was dry and sunny with good visibility. This survey was completed in accordance with the UK Habitat Classification (UKHab) (2020) guidelines, Preliminary Ecological Appraisal (CIEEM, 2017) and BS 42020:2013 Biodiversity - Code of practice for planning and development (British Standards Institute, 2013).

The previous Phase 1 Habitats surveyed in July/August 2018, August 2019, and July/August 2020 by Katherine Newbert BSc (Hons) MSc, Wiltshire County Botanical Recorder were reviewed and transposed into UKHab habitats with an updated condition assessment where this information was not available within the previous Phase 1 Habitat Report (OHH, Environment Statement Chapter 10: Ecology - Appendix 10.2).

2.3.2 Habitat Classification

The on-Site habitats were classified following UK Habitat Classification (UKHab) (2020) guidelines (which were the most up to date guidelines at the time of survey), which provides a more detailed interpretation of baseline habitat survey data than previous habitat classifications systems, such as Phase 1 Habitat Assessments. The professional edition of UKHab "UK Habitat Classification –Professional Edition¹" (UKHab-P) was used which includes Priority Habitat Types, all Annex 1 Habitats and the habitats listed in EUNIS.

The classification of primary habitats is hierarchical with five levels, which include terrestrial/freshwater/marine, ecosystem types, broad habitats, priority habitats and Annex 1 habitats. Habitat types were assigned a primary code to a hierarchical level of at least three, and secondary codes were used to further clarify the habitat and record additional information linked to the primary habitat such as habitat management. The full range of secondary codes following UKHab-P were used, which are grouped under the following headings of which the first three listed are considered mandatory sections.

¹ Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1 at <http://www.ukhab.org/>

- Habitat Mosaics (10 - 18)
- Habitat Complexes (19 – 32)
- Origin (33 – 49)
- Management (51 – 85)
- Land Use (86 – 116)
- Environmental Qualifier (117 – 138)

2.3.3 Condition Assessment

An annotated habitat map together with descriptions of the recorded habitat types was produced, which was subsequently digitised using a geographical information system (ArcGIS). The survey also included identification of any non-native invasive plant species. Flora taxonomy follows the nomenclature detailed in New Flora of the British Isles (4th Edition) (Stace C. , 2019). Flora, where appropriate, are given a descriptive score of abundance using the DAFOR scale, as follows:

- D – Dominant
- A – Abundant
- F – Frequent
- O – Occasional
- R – Rare
- L – Locally (to be used as a prefix for any of the above)
- V – Very (to be used as a prefix for any of the above)

Each habitat parcel is assessed on its condition via a series of relevant criteria as per The Statutory Biodiversity Metric User Guide (draft) and The Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology (Natural England, 2023b).

Information recorded including species abundance, presence of non-native species, undesirable species, management, habitat structure, human impacts and age of habitats were recorded using the Statutory Biodiversity Metric Habitat Condition sheets in the field which are appended to this report.

2.4 STATUTORY BIODIVERSITY METRIC METHODOLOGY

The Statutory Biodiversity Metric provides a nationally measurable structured calculation methodology to account for biodiversity losses and gains resulting from development or land management change. The Statutory Biodiversity Metric uses habitat, the places in which species live, as a proxy to describe biodiversity. These habitats are converted into measurable 'biodiversity units'. These biodiversity units are the 'currency' of the metric.

Biodiversity units are calculated using the size of a parcel of habitat and its quality. The metric uses habitat area as its core measurement, except for linear habitats where habitat length is used. To assess the quality of a habitat the metric scores habitats of different types, such as woodland or grassland, according to their relative biodiversity value. Habitats that are scarce or declining typically score highly relative to habitats that are more common and widespread. The metric also takes account of the condition of a habitat. The metric accounts for the location of the habitat relative to other similar habitats to measure its connectedness in the landscape. Being 'better' and 'more joined-up' are important facets

of habitats that can contribute to halting and reversing biodiversity declines. Lastly, the metric also accounts for whether or not the habitat is sited in an area identified locally, typically in a relevant policy of plan, as being of significance for nature.

Where new habitat is created, or existing habitat is enhanced the difficulty and associated risks of doing so are taken into account by the metric. If habitat is created to compensate for losses elsewhere, then the metric also takes account of its proximity to the impact site. The metric incentivises delivery that is on or close to the impact site.

The Statutory Biodiversity Metric score has been calculated for the existing habitats at the Site and for the habitats proposed within the masterplan. The Site was split into distinct habitat parcels and linear habitats based on the UKHab system, which were then mapped and measured using the ArcGIS mapping tool. Baseline habitats are shown in Figure 2.

The area or length of each habitat type was entered into the Calculation Tool along with the condition and strategic significance (informed by the desk study) in order to obtain the baseline (i.e. existing) value of each in biodiversity units. This process was repeated for the post-development habitats to be retained, enhanced and/or newly created. The post-development habitat plan is shown in Figure 3.

BNG is an approach to development that seeks to halt the current loss of biodiversity through development and through the planning system; restore ecological networks through early masterplanning and increase the natural habitat resource and ecological features. This has been included within the Environment Act 2021, and a mandatory requirement for development to enhance the ecological value of a site by a minimum of 10% will come into force in February 2024.

2.5 LIMITATIONS, CONSTRAINTS AND ASSUMPTIONS

The findings of this report are valid at the time of reporting. Should there be delays to the project timetable and/or implementation of the proposed development, updated desk study and/or site survey work may be required. In this instance, advice should be sought to ensure the data, recommendations and conclusions set out in this report remain valid.

The original extended Phase 1 Habitat Survey was undertaken in early March, which is outside of the JNCC's optimum field survey season for the south of England (from late March to Mid-October), wherein the most accurate picture of the vegetation communities present can be gained. The results of the previously recorded species from botanical surveys conducted in July/August 2018, 2019, and 2020 and updated walkover inspection in July 2023 have been used to inform the condition assessments. Where these are not present for a parcel; a precautionary condition has been applied e.g. a condition level higher than that surveyed in March 2023.

No other limitations or constraints with regards to the field survey or desk study were encountered and therefore the BNG calculations are considered valid.

3 RESULTS

3.1 STRATEGIC SIGNIFICANCE

The Site is adjacent to strategic locations identified in the Eastleigh Borough Council Biodiversity Action Plan 2012-22. This assessment concluded that the habitats on site are well connected to the wider landscape via suitable, high value connective habitats and have the potential to for valuable connective habitats as part of the wider Hampshire biodiversity network. This level of strategic significance is applied consistently to both lost and enhanced/created habitats. The results of the strategic significance assessment are as follows:

High

- All areas included within the HBIC Ecological Network Map. This includes biodiversity opportunity areas, core statutory sites, core non-statutory sites and network opportunity areas.
- Priority habitats as identified within the Biodiversity Action Plan (BAP) for Eastleigh Borough 2012-2022. Priority habitats relevant to this application include: lowland mixed deciduous woodlands; pond; lowland fens; reedbeds; and hedgerows.

Medium

- Areas located adjacent to 'high' strategic significance areas which are considered to provide ecological connectivity to the wider landscape such as woodland and grassland were categorised as having 'medium' strategic significance.

Low

- Areas that are not included in or are adjacent to the HBIC Ecological Network Map were categorised as having 'low' strategic significance. Areas adjacent to areas of high strategic significance that do not provide ecological connectivity to the wider landscape such as cereal crops, were also categorised as having a 'low' strategic significance.

3.2 BASELINE

3.2.1 Cropland – Cereal Crops c1c

Maize *Zea* sp. crops were grown in C1. The field had narrow margins which are retained un-ploughed, up to a width of 1 m at the base of hedges.

3.2.2 Grassland - Modified Grassland g4

The modified grassland within the Site (F14, F19, F20, F23) was heavily cattle-grazed or regularly topped; and fertiliser or manure were regularly applied. The sward was dominated by common and competitive grass species, with a small diversity of forb species which are tolerant of nutrient-enriched and disturbed soils. Typical species within this community included perennial rye-grass *Lolium perenne*, creeping bent *Agrostis stolonifera* and Yorkshire fog *Holcus lanatus*. Forb species present at low frequency and abundance included curled dock *Rumex crispus*, creeping thistle *Cirsium arvense*, ribwort plantain *Plantago lanceolata* and white clover *Trifolium repens*.

3.2.3 Grassland – Other Neutral Grassland g3c

Unmanaged marshy grassland with high proportion of rushes (F17). This area of grassland was relatively species-rich, and with wet ground at the time of survey. Species present included marsh pennywort *Hydrocotyle vulgaris*, sharp-flowered rush *Juncus acutiflorus*, hemlock-water dropwort, greater bird’s-foot trefoil *Lotus pedunculatus*, short-fruited willowherb *Epilobium obscurum*, bog stitchwort *Stellaria alsine*, marsh bedstraw *Galium palustre*, yellow flag iris *Iris pseudacorus*, common sorrel *Rumex acetosa*, marsh ragwort, water-mint, lesser spearwort *Ranunculus flammula*, ragged robin *Silene flos-cuculi*, meadowsweet *Filipendula ulmaria*, brooklime, square-stalked St John’s-wort *Hypericum tetrapterum*, fool’s water-cress *Apium nodiflorum*, water pepper *Persicaria hydropiper* and floating sweet-grass.

3.2.4 Wetland – Fen, marsh and swamp f2

Swamp vegetation (FW1) with water flowing over form the adjacent stream diversion. Vegetation present included branched bur-reed *Sparganium erectum*, Himalayan balsam, meadowsweet, hemlock water-dropwort, water-mint, water plantain *Alisma plantago-aquatica*, yellow flag iris, nettle, clustered dock *Rumex conglomeratus* and brown sedge *Carex disticha*.

3.2.5 Lakes – Eutrophic standing water r1a

A large pond (P1) was located within Quobleigh Woods. No submerged or emergent vegetation was present, with turbid water being shaded at a cover of 40% by overhanging grey willow and alder *Alnus glutinosa*. Waterfowl were present within the pond. Marginal vegetation was present upon banksides of the ponds, which were relatively steep.

3.2.6 Woodland – Other lowland mixed deciduous woodland W1f7

Quobleigh Woods (W4) comprised wet woodland typically dominated by alder *Alnus glutinosa* with some grey willow *Salix cinerea* and birch *Betula sp.* The ground flora was characterised by remote sedge *Carex remota*, nettle *Urtica dioica*, hemlock water-dropwort and locally frequent Himalayan balsam. Ancient woodland indicator species recorded included: remote sedge, wood sedge *Carex sylvatica*, hairy brome *Bromopsis ramosa*, opposite-leaved golden-saxifrage *Chrysosplenium oppositifolium*, wood speedwell *Veronica montana*, wood club-rush *Scirpus sylvaticus*, wood melick *Melica uniflora*, bluebell *Hyacinthoides non-scripta* and narrow buckler-fern *Dryopteris carthusiana*. However, the composition and classification of this woodland does not fall within the ancient woodland classification.

3.2.7 Hedgerows

The hedgerow number, classification, description, and species within the Site are provided in Table 1.

Table 1: Hedgrow numbers, classification and description

Hedgerow Number	Classification	Description and Species
L3	Line of trees - associated with bank or ditch	Mature trees lining the stream, predominantly alder, but also hazel <i>Corylus avellana</i> , hawthorn <i>Crataegus monogyna</i> , bramble, willow <i>Salix sp.</i> and ash <i>Fraxinus excelsior</i> .
L4	Line of trees	Woodland edge dominated by species such as mature oak and ash.
L5	Line of trees	
H8	Species-rich native hedgerow with trees – associated with bank or ditch	A previously laid hedge 2 m in width. The hedge is associated with a ditch on the eastern side. Species present included oak, rose, ash, hawthorn, blackthorn, hazel, grey willow, bramble, dogwood, and field maple. Five mature hedgerow trees were present within the hedge, including oak and ash.
H9	Species-rich native hedgerow - associated with bank or ditch	Hedgerow with an integral small ditch, with large coppice stools of hazel present, the most abundant species within the hedge. Management was by flailing to a height of 2 m and 1 m width. Other woody species present included ash,

Hedgerow Number	Classification	Description and Species
		hawthorn, blackthorn, dogwood, holly, alder, rose, field maple, elder and bramble. The ground flora was species-poor, dominated by nettle, however the ancient woodland indicator black bryony <i>Tamus communis</i> was recorded within this hedge.
H12A	Line of trees - associated with bank or ditch	Former hedgerow which was outgrown into a line of mature trees and shrubs. The hedgerow was fenced on both sides and had reached an approximate width of 4 m at the point where the hedgerow joined the wood. Along the subsequent length of the hedgerow, the width was 2.5 m. A deep ditch ran along the eastern side of the hedge, which was not continuous. A ditch was also associated with the hedgerow from the junction on the western side, this was also not continuous. Mature trees consisted of oak and ash. Shrub species included hawthorn, holly, blackthorn, hazel, English elm, field maple, apple <i>Malus sp.</i> and elder. The ground flora supported bluebell <i>Hyacinthoides non-scripta</i> , ivy <i>Hedera helix</i> and bracken.
H18A	Line of trees	An outgrown hedgerow with many standard mature oak, ash and aspen <i>Populus tremula</i> trees. Other woody species within the hedge included silver birch, hawthorn, bramble, rose, field maple, English elm, goat willow, hazel, holly, and wild cherry. The line of trees was currently unmanaged and reached a height of approximately 10 m and a width of 5 m. Ground flora was dominated by nettle and bracken.
H18B	Line of trees	
H22	Species-rich native hedgerow - associated with bank or ditch	The hedgerow supported locally abundant grey willow, with frequent hawthorn, blackthorn, bramble, ash, rose, hazel. A species-poor ground flora was present, with frequent nettle and hedge bindweed <i>Calystegia sepium</i> . A recent lack of management had resulted in an outgrown hedge with a gappy base, reaching a height of 3 m and a width of 2 m. The hedgerow had a shallow integral ditch.

Tables 2 and 3 below detail the specific area-based and linear habitat types respectively (Figure 2), with their relative conditions and baseline area unit values.

Table 2: Summary of baseline assessment for area-based habitats

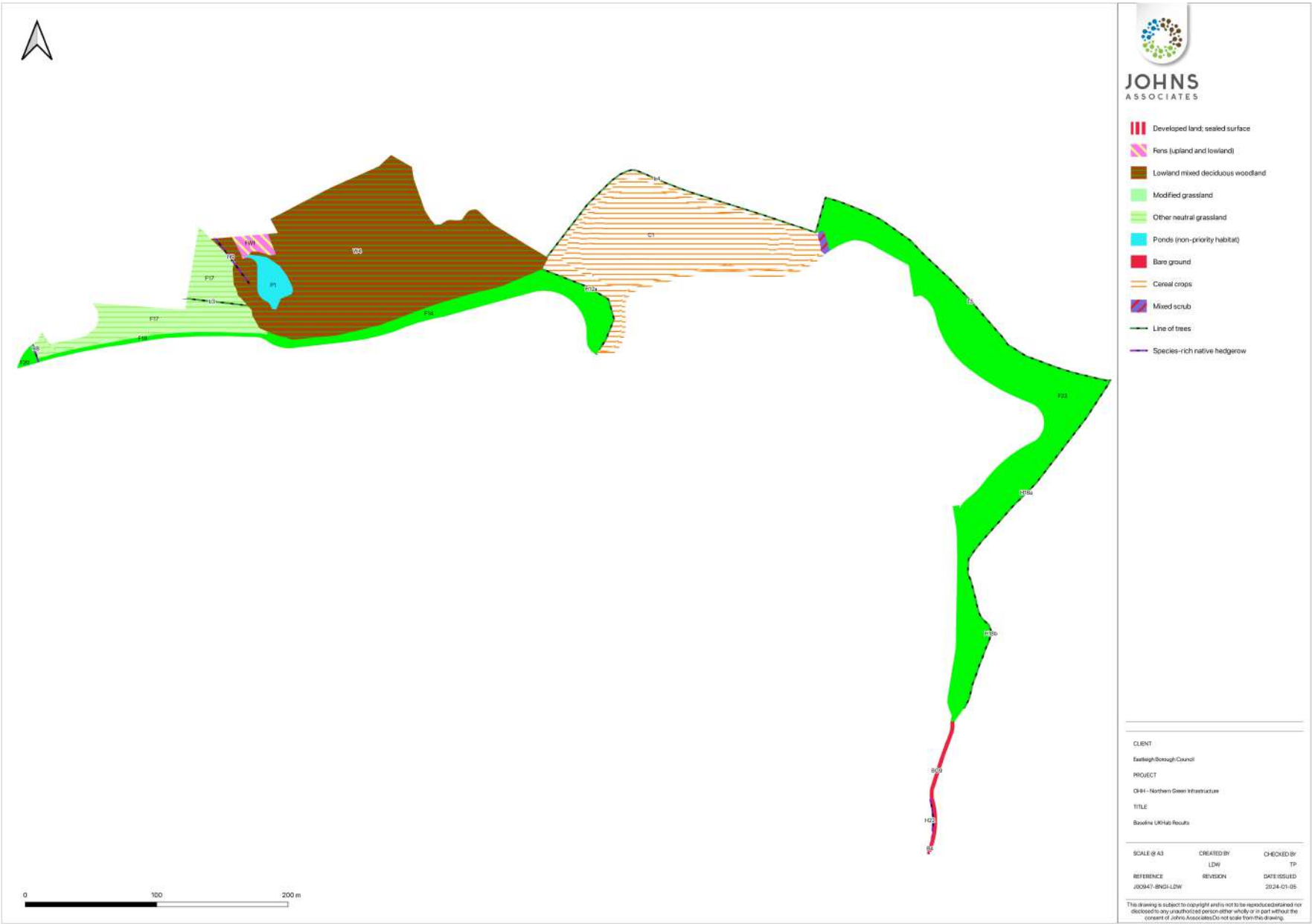
Broad Habitat	Habitat	Distinctiveness	Area (Ha)	Condition	Units
Urban	Sealed surface/ hardstanding	V. low	0.0006	N/A	0.00
	Bare ground	Low	0.0308	Poor	0.06
Cropland	Cereal crops	Low	1.2664	N/A	2.52
Grassland	Modified grassland	Low	0.3414	Poor	0.75
			1.2991	Moderate	5.19
			0.0564	Good	0.37
	Other neutral grassland	Medium	0.2274	Good	3.14
Lakes	Ponds (non-priority habitat)	Medium	0.0747	Moderate	0.69
Heathland and Scrub	Mixed scrub	Medium	0.0096	Poor	0.02
Woodland and Forest	Lowland mixed deciduous woodland	High	1.7895	Moderate	24.70
Wetland	Fens (upland and lowland)	V. high	0.0392	Good	0.00*
Totals			5.14		37.47

* This habitat type does not generate habitat units as it is considered to be 'irreplaceable habitat'. This does not impact the assessment as it is to be retained and protected during construction and operation.

Table 3: Summary of baseline assessment for linear habitats

Linear Habitat	Distinctiveness	Length (km)	Condition	Units
Line of trees	Low	0.538	Moderate	2.15
		0.293	Good	1.76
Line of trees – associated with bank or ditch		0.143	Moderate	0.64
Species-rich native hedgerow - associated with bank or ditch	High	0.068	Moderate	0.89
Species-rich native hedgerow with trees - associated with bank or ditch	V. high	0.014	Moderate	0.26
Totals		1.056		5.70

Figure 2: Baseline UKHab Results



3.3 POST-DEVELOPMENT

The post-development proposals for the Site comprise grassland, mixed scrub, SuDS and retained woodland and fens. The following calculations are based on the following drawings: Northern Green Infrastructure Sheets 1-3 of 3 (dwg. DD579L16-R6, DD579L17-R6 and DD579L18-R6 by Deacon Design). The landscape and ecological plan comprises the retainment of existing area-based habitats, enhancement of existing habitats and also newly created habitats.

3.3.1 Area-based Habitats

Table 4 below details the specific habitat types, their proposed conditions and unit values.

Table 4: Summary of post-development assessment for area-based habitats

Broad Habitat Type	Habitat	Distinctiveness	Area (Ha)	Condition	Units
Urban	Sealed surface/ hardstanding	V. low	0.4401	N/A	0.00
Grassland	Modified grassland	Low	0.3574	Moderate	1.27
	Other neutral grassland	Medium	0.0168	Moderate	0.11
			1.4742	Good	13.95
Heathland and shrub	Mixed scrub	Medium	0.0223	Moderate	0.15
			0.1052	Good	0.97
Lakes	SuDS	Medium	0.1422	Moderate	1.23
Individual trees	Rural trees (71 small trees)	Medium	0.2891	Moderate	0.97
Woodland and forest	Lowland mixed deciduous woodland	High	1.7895	Moderate	24.70
Wetland	Fens (upland and lowland)	V. high	0.7874	Good	2.34
Totals			5.14*		45.68

* Total shown excludes additional area of individual trees and is taken directly from the Metric Calculation Tool.

3.3.2 Hedgerow Habitats

Table 5 below details the specific hedgerow types, their proposed conditions and unit values.

Table 5: Summary of post-development assessment for linear habitats

Linear Habitat Type	Retained/ Enhanced/ Created? (ID Code)	Distinctiveness	Length (km)	Condition	Units
Line of trees	Retained (L4, L5)	Low	0.242	Moderate	0.97
			0.293	Good	1.76
	Enhanced (H18a, H18b)		0.296	Good	1.60
Line of trees – associated with bank or ditch	Retained (L3)		0.046	Moderate	0.21
	Enhanced (H12a)		0.097	Good	0.58
Species-rich native hedgerow	Created (H107)	Medium	0.022	Good	0.20
Species-rich native hedgerow – associated with bank or ditch	Enhanced (H9)	High	0.042	Good	0.85
Species-rich native hedgerow with trees – associated with bank or ditch	Created (H106)	V. high	0.041	Good	0.55
Totals			1.079		6.72

3.3.3 Headline Results

As demonstrated in Table 6 below, the biodiversity net gain results show an overall net gain in both habitats and hedgerows. The trading rules have been satisfied for both.

Table 6: Summary of biodiversity net gain assessment before offsetting

Unit Type	Baseline Units	Post-development Units	Net Unit Change	% Change	Trading Rules Satisfied?
Habitat	37.47	45.68	8.21	21.90	Yes
Hedgerow	5.70	6.71	1.02	17.85	Yes

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3.3.4 Application of the Mitigation Hierarchy

Because some area-based habitats and hedgerows are being lost in order to facilitate the proposed development, compensation and enhancement has been incorporated into the design in order to ensure compliance with Rule 1 and Principle 8 of the Metric User Guide. Table 7 demonstrates how the mitigation hierarchy has been applied to all habitats on Site in accordance with Principle 3 of the Metric User Guide. A map showing habitats to be retained (and protected during construction), enhanced, and lost can be found in Appendix B.

Biodiversity units are more easily achievable when habitats are retained and protected during construction and thereafter enhanced through improved management practices or additional planting (Principle 6 of the Metric User Guide). Therefore, as per the mitigation hierarchy, the improvement of the distinctiveness or condition (or both) of the retained habitats should always be a high priority. In this case, the enhancement of retained tree lines is not practicable, therefore new habitat creation is proposed in order to compensate for losses and provide sufficient enhancement to the Site overall.

Table 7: Application of the mitigation hierarchy

Broad Habitat Type		Impacts Avoided?	Habitat Lost	Compensation to Meet Trading Rules	Details/ Recommendations to Compensate for Losses and Meet Trading Rules	Additional Measures to Achieve >10% Net Gain
Urban		No	0.0308 ha of bare ground (0.06 units)	Same distinctiveness or better habitat required	- Creation of 0.3574 ha of modified grassland in moderate condition (1.27 units) - Creation of 0.0675 ha of ponds/SuDS (0.54 units); - Creation of 0.2693 ha of other neutral grassland (2.46 units)	N/A
Cropland		No	1.2664 ha of cropland (2.53 units)			
Grassland		No	0.672 ha of modified grassland (2.60 units)			
			0.0306 ha of other neutral grassland (0.42 units)	Same broad habitat or a higher distinctiveness habitat required	- Enhancement of 1.0249 of modified grassland to other neutral grassland (8.88 units) 0.1968 ha of other neutral grassland (F17) retained (2.72 units) - Planting of 71 small trees (0.97 units)	
Heathland and Scrub		No	0.0096 ha of mixed scrub (0.04 units)		Creation of 0.1275 ha of mixed scrub in moderate condition (1.12 units)	
Lakes		Yes	N/A		0.0747 ha of pond (P1) retained (0.69 units)	
Woodland and Forest		Yes	N/A	Same habitat required	1.7895 ha of woodland (W3) retained (24.7 units)	
Wetland		Yes	N/A	Bespoke compensation likely to be required	0.0392 ha of fens (FW1 – irreplaceable habitat) retained - Creation of 0.7482 ha fens (2.34 units)	
Hedgerows	Lines of Trees	Yes	N/A	Same distinctiveness band or better	0.581 km of lines of trees retained (L3, L4, L5) (2.94 units)	0.393 km of line of trees to be enhanced (2.18 units) - Creation of 0.022 km of species-rich hedgerow (H107) (0.20 units)
	Species-rich Hedgerows (high distinctiveness)	No	0.026 km lost (H22) (0.31 units)	Like for like or better	Enhancement of 0.042 km of species-rich hedgerow (H9) to good condition (0.85 units)	
	Species-rich Hedgerows (v. high distinctiveness)	No	0.014 km lost (H8) (0.26 units)	Like for like	Creation of 0.041 km of species-rich hedgerow with trees and bank (H106) (0.55 units)	

3.3.5 Compensation and Enhancement Measures

Table 8 below details the requirements of the compensation and enhancement measures which will be implemented in order to achieve the net gain in area and linear units stated in Table 7 above. These should be read in conjunction with the Landscape Management Plan (LMP), Habitat Monitoring and Management Plan (HMMP) or similar.

Table 8: Summary of proposed compensation and enhancement measures

Habitat Type	Proposed Compensation or Enhancement Measure	Target Condition	Delivery Details
Grassland	Creation of 0.3574 ha of modified grassland	Moderate	In order to satisfy the criteria for moderate condition as per the Statutory Biodiversity Metric, the following must apply: - There must be 6-8 vascular plant species per m² - The sward height must be varied with at least 20% of the sward >7cm in height, and 20% <7cm - No bracken or scrub encroachment should be allowed to establish - No invasive non-native species should be present.
	Creation, retention and enhancement of 1.491 ha of other neutral grassland	Moderate	In order to satisfy the criteria for moderate condition, the following must apply: - The appearance and composition must fit the UKHab definition of other neutral grassland - The sward height must be varied with at least 20% of the sward >7cm in height, and 20% <7cm - No bracken or scrub encroachment should be allowed to establish - No invasive non-native species should be present.
		Good	In order to achieve good condition, the following must apply: - The appearance and composition must fit the UKHab definition of other neutral grassland - At least 10 vascular plant species per m² should be present, including forbs that are characteristic of the habitat type - The sward height must be varied with at least 20% of the sward >7cm in height, and 20% <7cm - No bracken or scrub encroachment should be allowed to establish - No invasive non-native species should be present.
Woodland	Retention of 1.7895 ha of lowland mixed deciduous woodland (W3)	Moderate	Please see appended Condition Assessment Sheet for Woodlands (Appendix C).
Heathland and Scrub	Creation of 0.1275 ha of mixed scrub	Moderate	In order to achieve moderate condition, <u>at least three</u> of the following must apply: - The appearance and composition must fit the UKHab definition of mixed scrub - No invasive non-native species should be present - The scrub should have a well-developed edge with scattered scrub and tall grassland and/or forbs present between the scrub and adjacent habitat - Clearings, glades or rides should be present within the scrub - Saplings, seedlings, young shrubs and mature, ancient or veteran shrubs are all present.
		Good	In order to achieve good condition, all of the above criteria must be met.
Wetland	Creation and retention of 0.7874 ha of fens	Good	In order to achieve good condition, the following must apply: - The water table is at, or near the surface throughout the year - No more than 25% of the habitat area should have continuous litter cover preventing regeneration. In addition, <u>at least four</u> of the following criteria should be met: - The appearance and composition must fit the UKHab definition of fen - Water should be clear with no obvious signs of pollution - No scrub or scattered trees should be allowed to establish - Less than 5% of ground should be bare - No invasive non-native species should be present.

Lakes	Creation and retention of 0.0675 ha of permanently wet SuDS	Moderate	In order to achieve moderate condition for ponds (non-priority habitats), <u>at least six</u> of the following must apply: - Good water quality with low turbidity - Habitat of at least moderate distinctiveness surrounds the pond for at least 10m from its perimeter - Less than 10% of the surface is covered with duckweed or filamentous algae - No invasive non-native animals or plants must be present - The pond should not be artificially stocked with fish - Emergent, submerged or floating plants (excluding duckweed) cover at least 50% of the pond area which is less than 3m deep - The pond surface is no more than 50% shaded by trees and shrubs.
	Retention of 0.0747 pond (P1)	Moderate	In order to achieve good condition for ponds (non-priority habitats), <u>at least six</u> of the following must apply: - Good water quality with low turbidity - Habitat of at least moderate distinctiveness surrounds the pond for at least 10m from its perimeter - Less than 10% of the surface is covered with duckweed or filamentous algae - The pond is not artificially connected to other waterbodies - Water levels can fluctuate naturally throughout the year - No invasive non-native animals or plants must be present - The pond should not be artificially stocked with fish - Emergent, submerged or floating plants (excluding duckweed) cover at least 50% of the pond area which is less than 3m deep - The pond surface is no more than 50% shaded by trees and shrubs.
Trees	Planting of 71 small trees	Moderate	In order to achieve moderate condition, <u>at least two</u> of following must apply: - Tree species should be native - Trees should not be unnecessarily pruned or subjected to detrimental activities - Deadwood, cavities, ivy and loose bark should be preserved - At least 20% of the tree canopy should oversail vegetation beneath.
Hedgerows	Enhancement and retention of 0.974 km of line of trees	Moderate	In order to achieve at least moderate condition, <u>at least three</u> of the following must apply: - At least 70% of trees are native - The canopy is predominantly continuous with gaps <10% and no gap >5m wide - One or more trees has veteran features and/or natural niches for vertebrates and invertebrates such as deadwood, cavities, ivy or loose bark - There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing) At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.
		Good	In order to achieve good condition, <u>all</u> of the following must apply: - At least 70% of trees are native - The canopy is predominantly continuous with gaps <10% and no gap >5m wide - One or more trees has veteran features and/or natural niches for vertebrates and invertebrates such as deadwood, cavities, ivy or loose bark - There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing)

			- At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.
	Enhancement and creation of 0.064 km of species-rich native hedgerow	Good	In order to achieve good condition, the following must apply: - The hedgerow should be >1.5m in height on average - The hedgerows should be >1.5m in width on average - Gap between ground and base of canopy should be <0.5m for at least 90% of the length - Canopy gaps make up <10% of total length and no gaps are >5m wide - Plant species indicative of nutrient enrichment should account for <20% of ground flora at the hedge base OR >1m of undisturbed ground with herbaceous perennial vegetation is present on at least one side of the hedgerow (this should be left largely unmanaged, especially over winter, to maximise the value for wildlife) - >90% of the hedgerow is free of undesirable species OR >90% of the hedgerow is free of damage from human activities
	Creation of 0.041 km of species-rich native hedgerow with trees	Good	In order to achieve good condition, the following must apply: - The hedgerow should be >1.5m in height on average - The hedgerows should be >1.5m in width on average - Gap between ground and base of canopy should be <0.5m for at least 90% of the length - Canopy gaps make up <10% of total length and no gaps are >5m wide - Plant species indicative of nutrient enrichment should account for <20% of ground flora at the hedge base OR >1m of undisturbed ground with herbaceous perennial vegetation is present on at least one side of the hedgerow (this should be left largely unmanaged, especially over winter, to maximise the value for wildlife) - >90% of the hedgerow is free of undesirable species OR >90% of the hedgerow is free of damage from human activities At least two age-classes of tree are present, including at least one mature tree per 20 – 50m of hedgerow OR at least 95% of trees are healthy and undamaged, excluding veteran features.

4 CONCLUSIONS

Provided that the recommendations for creation and management of habitats can be adhered to, it is predicted that the Northern GI will achieve a net gain of **21.90%** in area-based habitats and **17.85%** in hedgerows, with the trading rules met for both.

It is recommended that a CEMP be produced in order to set out avoidance and mitigation measures during construction, particularly in relation to **retained and enhanced** habitats, and root protection zones. A LMP and HMMP will need to also be provided to ensure that the required habitats and habitat conditions are created, maintained, and monitored appropriately to ensure that the BNG conditions stated within this assessment are achieved. Monitoring Site visits will be required to be conducted on Years 1, 2, 3, 5, 7, 10, 15, 20, 25 and 30 and follow up Site visits will also be required following any remediation measures being implemented to ensure success.

If any significant changes to the proposals shown in Figure 3 occur, a reassessment of the potential impacts may be required.

APPENDIX A – LEGISLATION AND PLANNING POLICY

LEGISLATION

Many species of animal and plant receive some degree of legal protection. For the purposes of this report, legal protection refers to: species included on Annex II of the Habitats Directive 1992 (Council of European Communities, 22/07/1992) , Schedules 2 and 5 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended) , excluding species that are only protected in relation to their sale (see Section 9[5] and 13[2]) reflecting the fact that the proposed development does not include any proposals relating to the sale of species.

Legal offences associated with species listed on Schedule 2 of the Conservation of Habitats and Species Regulations and Schedule 5 of the Wildlife and Countryside Act in England and Wales include inter alia:

- Deliberate capture, injury or killing of animals or taking or destroying their eggs;
- Deliberately disturb animals in a way that would significantly affect their local distribution or abundance, or affect their ability to survive, breed or rear young;
- Intentional or reckless disturbance of an animal in its place of shelter or protection;
- Damaging or destroying a resting place or breeding site;
- Intentionally or recklessly obstructing access to a place of shelter or protection; and
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead animal or any part of an animal.

Relevant species listed on these Schedules that are potentially associated with this Site include bats and reptile species (e.g. slow worm). All species of bat receive full protection from all legal offences listed above. Common reptile species receive partial protection under the Wildlife and Countryside Act in that they are protected from killing and injury only.

All species of wild bird are protected under the Wildlife and Countryside Act (1981) (as amended) from killing or injury. In addition, it is an offence to take or damage/ destroy their eggs and to damage or destroy a nest whilst it is in use. Species listed on Schedule 1 (such as barn owl) receive additional protection in that it is illegal to disturb birds or their young whilst occupying, or near to, an active nest.

A number of wild plants, habitats and animals (including reptiles, hedgehog and most species of bat) are also included within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 which lists flora, fauna and habitats considered by the Secretary of State to be of principal importance for conserving biodiversity. The publication of the "England Biodiversity List" satisfies the requirements of Section 41 of the NERC Act 2006 for the conservation of biodiversity. Section 40 of the NERC Act 2006 requires public bodies, including local planning authorities, to have regard for the conservation of biodiversity in England, when carrying out their normal functions.

Badgers are protected under the Protection of Badgers Act 1992 (UK Government, 1992) which makes it an offence to willfully kill, injure or take (or attempt to kill, injure or take) a badger; or to disturb badgers whilst occupying their setts.

NATIONAL PLANNING POLICY

There are numerous national and local planning policies associated with flora and fauna (also referred to as biodiversity) that need to be addressed as part of the planning process. The Government has issued its National Planning Policy Framework (NPPF) 2021, which requires impacts to biodiversity to be minimised. Paragraph 181 of the NPPF applies the same protection to Ramsar sites as that conferred by the Habitats Regulations to SACs and SPAs. The NPPF requires development to apply the following principles (Paragraphs 179-180):

- Minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressure;
- Identify and pursue opportunities for securing measurable net gains for biodiversity;
- Ensure that there will be no adverse impacts to SSSIs (such development would not normally be permitted);
- Ensure that there will be no loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees), unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- Where significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts) adequate mitigation, or as a last resort compensation, must be provided.
- The NPPF and associated Planning Practice Guidance also emphasise the requirement for ecological networks and wildlife corridors to be created throughout the wider landscape (paragraph 179).

Planning authorities should follow key principles to ensure that the potential impacts of planning decisions on biodiversity conservation are considered. Circular 06/05: Biodiversity and Geological Conservation provides guidance on the application of the law relating to planning and nature conservation and complements the NPPF.

The Natural Environment Paper

“The Natural Choice: Securing the Value of Nature” outlines the Government’s approach and vision for nature in the UK including protecting and improving our natural environment, growing a green economy and reconnecting people and nature.

Biodiversity 2020

A strategy for England’s wildlife and ecosystem services, are the country level strategies for England and builds on the natural Environment White Paper. It sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea. The priorities for action include a more integrated large-scale approach to conservation, putting people at the heart of biodiversity policy, reducing environmental pressure and improving knowledge.

LOCAL PLANNING POLICY

Eastleigh Borough Council’s Local Plan 2016 to 2032 (dated April 2022) contains Policies relating to the natural environment which are reproduced below:

Policy DM11, Nature Conservation

1. The Council will work with statutory and voluntary agencies and developers, and will determine planning applications, to:
 - a. protect, conserve, enhance and facilitate adaption to climate change:
 - i. international, national and local nature conservation designations; and
 - ii. networks of natural habitats and features, including the Local Ecological Network, Priority Biodiversity Areas and Priority Biodiversity Links, watercourses, wetland complexes, woodland trees, and trees and hedgerows important to biodiversity and local character.
 - b. assist in achieving national, county and local biodiversity targets as set out in Biodiversity Action Plans (BAPs);

- c. seek a net gain of biodiversity on all development sites (including sites for redevelopment) through the protection, enhancement and connection of existing and provision of new habitats and features of nature conservation interest compatible with the native biodiversity characteristics of the Borough, having regard to local geodiversity and soils; and
 - d. contribute to major elements of the PfSH Green Infrastructure Strategy and other strategies for the provision and enhancement of multifunctional green infrastructure including green routes, ecological networks and biodiversity enhancements (see strategic policy S9).
2. Development which is likely (either individually or in combination with other developments) to adversely affect the integrity of an international or European nature conservation site will not be permitted subject only to imperative reasons of overriding public interest and securing any necessary compensatory measures in the absence of alternative solutions. A 'project level' Habitat Regulations Assessment will be required where there are likely significant effects or uncertainty. Any mitigation measures required to ensure no adverse impact must be implemented at the appropriate time.
3. The Council will work with PfSH, Natural England, the Environment Agency and other wildlife organisations to develop and implement with developers a strategic approach to the protection and enhancement of international and European sites from the direct and indirect effects of development. Within Eastleigh Borough this will include:
- a. implementing:
 - i. the Solent Recreation Mitigation Strategy (requiring contributions from residential developments within 5.6 kilometres of the Solent Special Protection Area to the Strategy); and
 - ii. the interim and any future New Forest Recreation Mitigation Strategy if required;or alternative agreed site specific measures to address recreational disturbance;
 - b. preserving the water quality and flows within the Itchen and Hamble, Southampton Water and Solent;
 - c. protecting the River Itchen SAC, in particular the maintenance and where appropriate restoration of habitats and qualifying species to favourable conservation status (as defined by article 1 of the Habitats Directive); and
 - d. seek contributions towards measures set out in the Southern Damselfly Conservation Strategy (or other strategy) specifically to deliver biodiversity net gain.
4. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on a Site of Special Scientific Interest (SSSI), Site of Importance for Nature Conservation (SINC) or Local Nature Reserve (LNR) as shown on the policies map (or on a more recent plan provided by the Hampshire Biodiversity Information Centre) unless it can be demonstrated that:
- a. there are no alternative solutions;
 - b. the adverse effects are unavoidable;
 - c. measures are taken to mitigate or, as a last resort, compensate for the adverse effects;
 - d. there is an overall biodiversity net gain; and
 - e. if there are any residual adverse effects which cannot be avoided, mitigated or compensated, the benefits of the development must clearly outweigh the adverse effects on the nature conservation value of the site and any broader impacts on national and local designations.

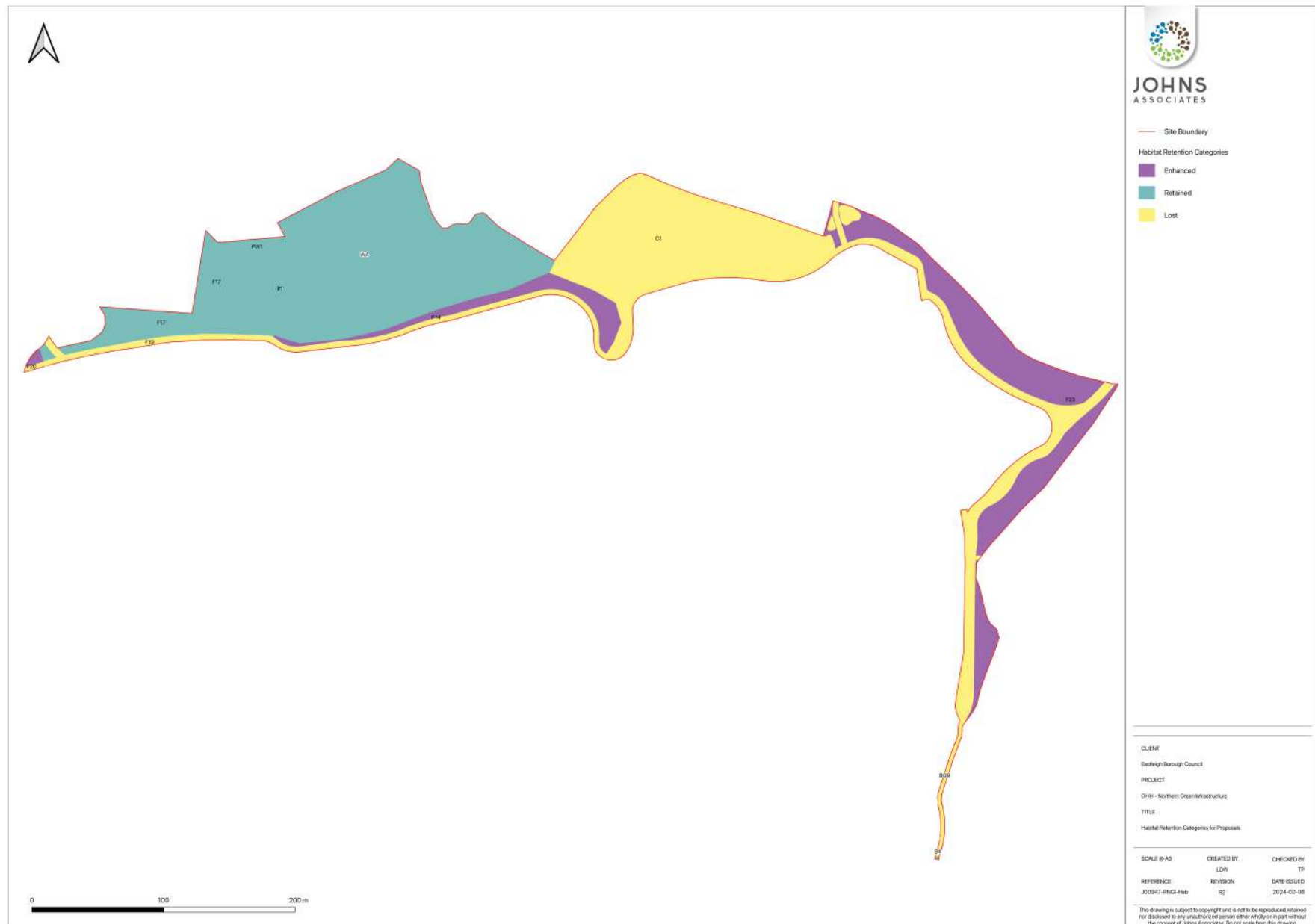
5. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on **priority habitats, protected priority species, or on the local ecological network** unless it can be demonstrated that:
 - a. there are no alternative solutions;
 - b. the adverse effects are unavoidable;
 - c. measures are taken to mitigate or, as a last resort, compensate for the adverse effects;
 - d. there is an overall biodiversity net gain; and
 - e. if there are any residual adverse effects, the benefits of the development clearly outweigh the adverse effects on priority habitats, priority and protected species, and the local ecological network.
6. Development will not be permitted if it results in the loss or deterioration of **irreplaceable habitats** (such as ancient woodland and ancient or veteran trees), unless there are wholly exceptional reasons and a suitable compensation strategy exists.
7. **Buffers** free from development will be provided to designated sites to avoid/mitigate impacts, including recreational impact and impacts on edge habitats, and to maintain dark skies.
8. Development will not be permitted unless it can be demonstrated that:
 - a. there have been thorough habitat and species **surveys**;
 - b. the great crested newt strategic survey and strategy have been considered in all developments within 500m of a great crested newt pond; and
 - c. the strategic bat trapping survey has been considered in all developments within the locality of a woodland or connected habitat networks.

Strategic Policy S9, Green Infrastructure

1. Through new development and other initiatives and the Borough Council will seek to achieve the provision, retention and/or enhancement of the following forms of multi-functional green infrastructure, including provision of:
 - a. landscape scale strategic links across the Borough boundary, to and between the Borough's settlements, the countryside, the coast, and the major areas of open space including the country parks (see strategic policy S12);
 - b. interlinked publicly accessible open space through new and existing development including for example formal sports facilities and informal amenity spaces and cemeteries (see policies DM32-DM34, Chapter 5 and detailed proposals in Chapter 6);
 - c. green infrastructure incorporated into all new development with multifunctional spaces connected by primary, secondary and tertiary green links;
 - d. interconnected urban green infrastructure within the fine grain of existing and new development including green, cycle ways, paths and linkages between community facilities and open spaces to link community facilities;
 - e. green stepping stones such as street trees, green roofs and walls, pocket parks and urban copses (see policy DM1, Chapter 5);
 - f. connected habitats linking the network of designated sites and existing priority habitats, taking account of the Hampshire ecological network map (see policy DM11, Chapter 5);

- g. incorporation of historic buildings and landscapes, including historic parks and gardens within the wider Green Infrastructure to protect their setting (see policy DM12, Chapter 5); and
- h. opportunities for local food growing including allotments, community orchards and farms (see policies DM32 to DM34, Chapter 5 and detailed proposals in Chapter 6).

APPENDIX B – AREAS TO BE LOST, RETAINED AND ENHANCED



APPENDIX C – WOODLAND CONDITION ASSESSMENT CRITERIA

Condition Assessment Criteria					
Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator
A	Age distribution of trees	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in 40% or less of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	
C	Invasive plant species	No invasive species ³ present in woodland.	<i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species ³ <10% cover.	<i>Rhododendron</i> or cherry laurel present, or other invasive species ³ >10% cover.	
D	Number of native tree species	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	
F	Open space within woodland	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	
G	Woodland regeneration	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	
H	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback ⁹ .	11% to 25% mortality and/or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .	
I	Vegetation and ground flora	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.	
J	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .	
K	Veteran trees	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² per hectare.	No veteran trees ¹² present in woodland.	

L	Amount of deadwood	50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities ¹³ .	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	
M	Woodland disturbance	No nutrient enrichment or damaged ground evident ¹⁴ .	Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground ¹⁴ .	More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground ¹⁴ .	
Total Score (out of a possible 39)					
Condition Assessment Result			Condition Assessment Score		
Total score >32 (33 to 39)			Good (3)		
Total score 26 to 32			Moderate (2)		
Total score <26 (13 to 25)			Poor (1)		

APPENDIX D – BASELINE CONDITION ASSESSMENTS

Modified Grassland

Habitat parcel	F14	F19	F20	F23
Average sward height (cm)	10	20	15	10
Percentage cover				
Rye grass (%)	40-50	80	40	99
Wild flowers and sedges (%)		20	2	1
Undesirable species (%)		0		0
Management		Cut	Cut	Cut/grazed
Condition assessment criteria				
1. 6 - 8 species per m2	No (3)	No (4)	No (4)	No (2)
2. Varied sward height	No	Yes	Yes	No
3. Scattered scrub <20%	Yes	Yes	Yes	Yes
4. Physical damage <5%	Yes	Yes	Yes	Yes
5. Bare ground 1 - 10 %	Yes	Yes	No	Yes
6. Bracken <20%	Yes	Yes	Yes	Yes
7. No invasives	Yes	Yes	Yes	Yes
Condition	Poor	Poor	Poor	Poor

Other Neutral Grassland

Habitat parcel	F17	F18
Average sward height (cm)	30	20
Management	None	None
Condition assessment criteria		
A. Good representation of habitat	Yes	Yes
B. Varied sward height	Yes	Yes
C. Bare ground 1 - 5 %	Yes	Yes
D. Bracken <20% and scrub <5%	Yes	Yes
E. Undesirable species and physical damage < 5%	No	Yes
F. 10 or more species per m2	Yes	Yes
Condition	Good	Good

Fens

Habitat parcel	FW1
Condition assessment criteria	
A. Water table at/near surface throughout the year	Yes
B. Good example of habitat type	Yes
C. Water supplies are good quality	Yes
D. Scrub and scattered trees <10%	No
E. Bare ground <5%	Yes
F. No invasives and sub-optimal species <5%	No
G. <25% habitat has continuous cover of litter	Yes
Condition	Good

Lowland Mixed Deciduous Woodland

Habitat parcel	W4
Condition assessment criteria	
A. Age distribution of trees	2
B. Wild, domestic and feral herbivore damage	3
C. Invasive plant species	1
D. Number of native tree species	2
E. Cover of native tree and shrub species	3
F. Open space within woodland	3
G. Woodland regeneration	2
H. Tree health	3
I. Vegetation and ground flora	1
J. Woodland vertical structure	2
K. Veteran trees	1
L. Amount of deadwood	2
M. Woodland disturbance	3
Score	28
Condition	Moderate

Pond

Habitat parcel	P1
Condition assessment criteria	
A. Good water quality	No
B. Semi-natural habitat for 10 m from pond edge	Yes
C. <10% Lemna spp. Or filamentous algae	Yes
D. Not artificially connected to other waterbodies	Yes
E. Water levels can fluctuate	Yes
F. No invasive species	No
G. Not artificially stocked with fish	Yes
Non-woodland pond criteria	
H. plants cover >50% of areas <3 m deep	N/A
I. Surface in <50% shaded by trees/scrub	N/A
Condition	Moderate

Lines of Trees

Tree Line No.	L3	L4	L5	H12a	H18a	H18b
Tree Line Type	Line of trees with ditch	Line of trees	Line of trees	Line of trees with ditch	Line of trees	Line of trees
CONDITION ASSESSMENT CRITERIA (tick or cross)						
1. >70% of trees are native	Yes	Yes	Yes	Yes	Yes	Yes
2. Gaps in canopy <10% AND all gaps <5m	No	Yes	Yes	Yes	Yes	Yes
3. 1 or more mature or veteran tree present	Yes	Yes	Yes	Yes	Yes	Yes
4. Undisturbed vegetated strip at least 6m wide on both sides	Yes	No	Yes	No	No	No
5. 95% of the trees are in healthy condition (excluding veteran features)	No	Yes	Yes	Yes	Yes	Yes
Condition	Moderate	Moderate	Good	Moderate	Moderate	Moderate

Hedgerows

Hedgerow No.	H8	H9	H22
Hedgerow type	Species-rich native hedgerow with ditch and trees	Species-rich native hedgerow with ditch	Species-rich native hedgerow with bank and ditch
ASSOCIATED FEATURES (yes or no)			
Bank or wall (at least half of length)	No	No	Yes
Gaps <10%	Yes	Yes	Yes
1 or more standard tree per 50m	Yes	No	No
Ditch (at least half of length)	Yes	Yes	Yes
CONDITION ASSESSMENT (yes or no)			
A1 - Height >1.5m on average	Yes	Yes	Yes
A2 - Width >1.5m on average	Yes	Yes	Yes
B1 - Base gap <0.5m for >90% length	Yes	Yes	No
B2 - Gaps <10% AND all gaps <5m	Yes	Yes	Yes
C1 - >1m undisturbed ground for 90%	No	No	No
C2 - Nettles/cleavers/docks <20%	No	No	No
D1 - >90% free of invasives/neophytes	Yes	Yes	Yes
D2 - >90% free of human damage	No	Yes	Yes
ADDITIONAL CRITERIA FOR HEDGEROWS WITH TREES			
E1 - At least 1 mature tree per 30m	Yes		
E2 - 95% of trees are in healthy condition	Yes		
Condition	Moderate	Moderate	Moderate