



URBAN EDGE
ENVIRONMENTAL
CONSULTING

NATURAL PROGRESSION

Land North West of Goring Station, Goring-by-Sea, West Sussex

Biodiversity Net Gain Assessment

December 2023

Land North West of Goring Station, Goring-by-Sea, West Sussex

Biodiversity Net Gain Assessment

| | | |
|---|--|---|
| Client: | Persimmon Homes Thames Valley | |
| Report No.: | UE0634_GoringSta_BNG_2_231205 | |
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0 Executive Summary

- 0.1.1 Biodiversity Net Gain is an approach to development which leaves the natural environment in a better state than beforehand. Defra has published a Metric by which the biodiversity losses and gains associated with a particular development can be calculated. Urban Edge Environmental Consulting was commissioned by Persimmon Homes Thames Valley ('the Applicant') to undertake a Biodiversity Net Gain (BNG) assessment for the site of a proposed residential development at Land North West of Goring Station, Goring-by-Sea, West Sussex.
- 0.1.2 The 2023 National Planning Policy Framework advocates that planning policies and decisions should take opportunities to achieve net environmental and biodiversity gains, such as developments that would enable habitat creation. It also advocates that, when making planning decisions, local planning authorities should encourage biodiversity enhancements, especially where this can secure measurable gains for biodiversity. In 2018 the Government published its '25 Year Environment Plan' which set out an ambition to embed mandatory biodiversity net gain into all development projects. The Environment Act 2021 mandates a minimum of 10% BNG for all development following a two-year transition period. Defra announced in September 2023 that implementation of the mandatory requirement for 10% BNG will be slightly delayed and will now apply to planning applications submitted after December 2023.
- 0.1.3 Policy DM18 (Biodiversity) of the adopted Worthing Local Plan states that: "...*New developments ... should provide a minimum of 10% net gain for biodiversity...*". Policy SS5 (Local Green Gaps) identifies the Site, which is also known as Chatsmore Farm, as a Local Green Gap.
- 0.1.4 The Biodiversity Net Gain assessment has been carried out using the 2023 Defra Statutory Biodiversity Metric which uses habitats as a proxy for wider biodiversity. Pre-intervention Biodiversity Units (BU) calculations were informed by walkover site surveys on 18 October and 6 November 2023 to establish the habitat parcels present within the development site, their size and condition. Post-intervention BU were calculated based upon the Proposed Landscape Plan, professional judgement and liaison with the client team.
- 0.1.5 There is a calculated **net gain +7.10 BU for area habitats, equivalent to +14.50%**; associated with the current development proposals.
- 0.1.6 There is a calculated **net gain of +8.82 BU for hedgerow habitats, equivalent to +810.95%**, associated with the current development proposals.
- 0.1.7 There is a calculated **net gain of +0.83 BU for watercourse habitats, equivalent to +11.95%**, associated with the current development proposals.
- 0.1.8 The Proposed Development therefore complies with the current requirements for the achievement of net gain, including compliance with the trading rules.

1 Introduction

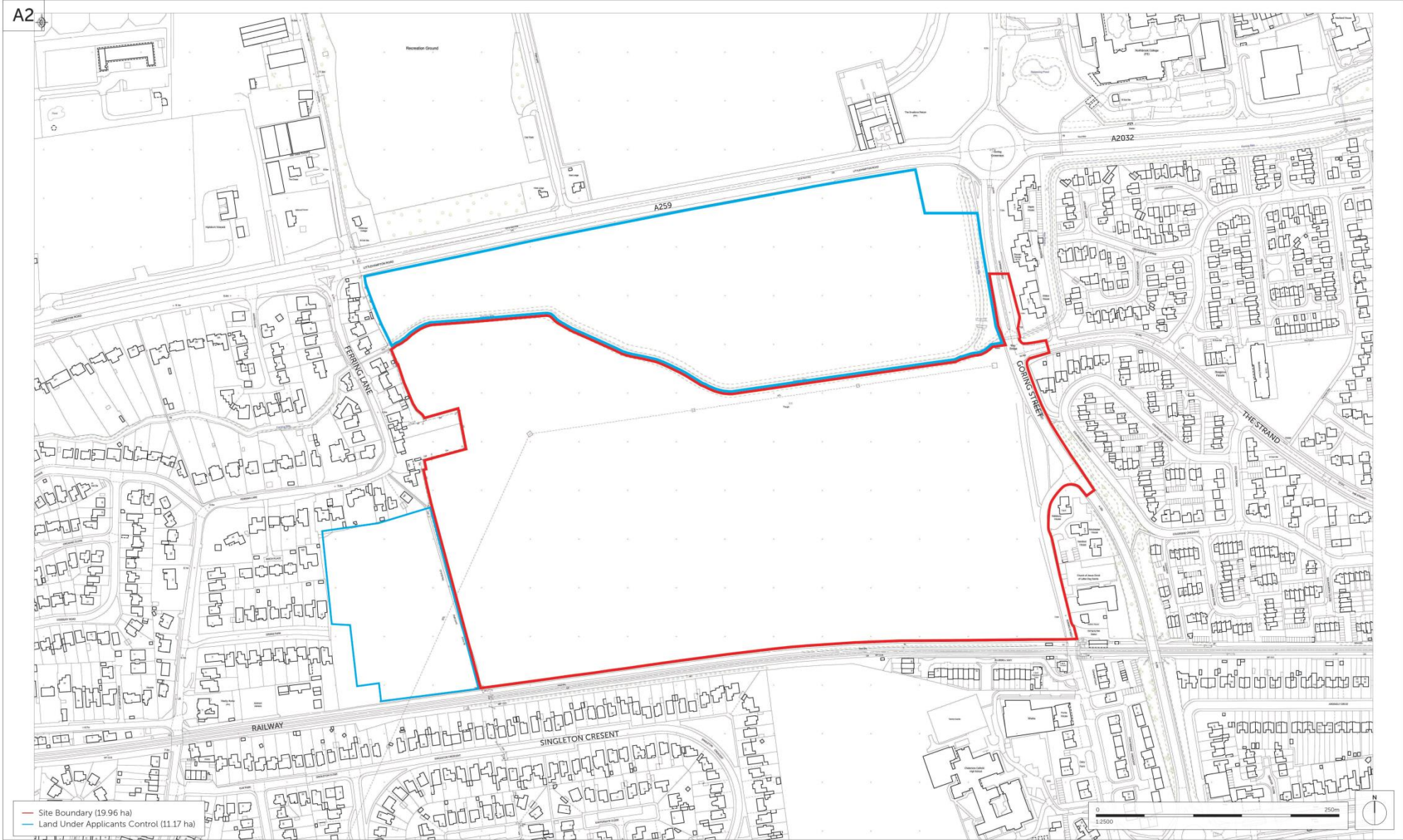
1.1 Purpose of the Report

- 1.1.1 Urban Edge Environmental Consulting (UEEC) has been commissioned by Persimmon Homes Thames Valley ('the Applicant') to undertake a Biodiversity Net Gain (BNG) assessment for the site of a proposed residential development at Land North West of Goring Station, Goring-by-Sea, West Sussex (Grid Reference: 510120, 103330).
- 1.1.2 The Site lies to the west of Goring-by-Sea and comprises c.19.96ha of land currently dominated by arable bordered with grassland and tall ruderal headlands. The Ferring Rife with banks of tall ruderal and bramble scrub runs along the northern boundary and there are hedgerows and scattered trees. The Site is bounded to the north by the Ferring Rife, to the west by a residential area, to the south by the south coast railway line and to the east by the A259/Goring Street and residential development. The extent of the application site is shown at Figure 1.1.
- 1.1.3 Outline planning permission is being sought for a mixed use development comprising up to 475 dwellings along with associated access, internal roads and footpaths, car parking, public open space, landscaping, local centre (uses including A1, A2, A3, A4, A5, D1, D2, as proposed to be amended to use classes E, F and Sui Generis) with associated car parking, car parking for the adjacent railway station, undergrounding of overhead HV cables and other supporting infrastructure and utilities (planning reference AWDM/1264/20). The Concept Masterplan is shown at Figure 1.2.

1.2 Biodiversity Net Gain and the Defra Metric

- 1.2.1 Biodiversity is the variety of life on earth; it includes all living things and the places in which they live. It is essential to sustain our society, well-being and economy. Biodiversity in the UK and internationally is declining as it comes under increasing pressure from development and land management practices. Enhancing biodiversity is integral to sustainable development, and BNG is an approach to development which leaves the natural environment in a measurably better state than beforehand.
- 1.2.2 In 2023 Defra published the Statutory Biodiversity Metric ('the Metric') (Natural England, 2023a). The Metric provides a means of evaluating biodiversity losses and gains through development in a robust and consistent manner. The Metric enforces the mitigation hierarchy whereby impacts to biodiversity should first be avoided, then minimised and mitigated, before being compensated where losses cannot be avoided. The Metric calculates the biodiversity value of a site before and after development to establish the change in biodiversity attributable to a particular development project.

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Figure 1.1: Site location plan

Project **Goring Station**
 Drawing **Site Location Plan - 02**

| | | | |
|-------------|---------------------------|---------|-----------|
| Client | PERSIMMON (THAMES VALLEY) | | |
| Job no. | PERS190227PJ | Date | 03.02.20 |
| Dwg no. | SLP-02 | Rev. | P5 |
| Author | PM/dr | Checked | -/- |
| Status | PRELIMINARY | Scale | 1:2500@A2 |
| Client ref. | | Office | Romsey |





Figure 1.2: Concept Masterplan

2 Policy Background

2.1 National Planning Policy

2.1.1 The revised National Planning Policy Framework (NPPF; MHCLG, 2023) advocates biodiversity and environmental gains¹ in the following paragraphs:

- ▶ Paragraph 120: *“Planning policies and decisions should a) encourage multiple benefits from both urban and rural land...and taking opportunities to achieve net environmental gains - such as developments that would enable new habitat creation...”*
- ▶ Paragraph 174: *“Planning policies and decisions should contribute to and enhance the natural and local environment by d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.”*
- ▶ Paragraph 175: *“Plans should...plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries”*
- ▶ Paragraph 179: *“To protect and enhance biodiversity and geodiversity, plans should b)...pursue opportunities for securing measurable net gains for biodiversity.”*
- ▶ Paragraph 180: *“When determining planning applications, local planning authorities should apply the following principles d)...opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity.”*

2.1.2 The Government’s ‘25 Year Environment Plan’ (HMG, 2018) set out a policy ambition to consult on mandatory BNG for development and to embed environmental net gain principle into the planning system. A Defra consultation on mandatory BNG, advocating a minimum of 10% BNG for all development, took place in December 2018² with the responses published in July 2019³. The Environment Act 2021 mandates a minimum of 10% BNG for all development following a two-year transition period.

2.1.3 Defra announced on 27 September 2023⁴ that implementation of the mandatory requirement for 10% BNG will be slightly delayed and will now apply to planning applications submitted after December 2023.

¹ Environmental gains extend beyond biodiversity gains to also include social, economic, amenity and natural capital gains.

² Defra (2018): *Net Gain – Consultation proposals*. Available online: <https://consult.defra.gov.uk/land-use/net-gain/>.

³ Defra (2019): *Net Gain – Summary of responses and government response*. Available online: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819823/net-gain-consult-sum-resp.pdf.

⁴ Defra (2023): *Biodiversity Net Gain moves step closer with timetable set out*. Available online: <https://www.gov.uk/government/news/biodiversity-net-gain-moves-step-closer-with-timetable-set-out>

2.2 Local Planning Policy

2.2.1 Policy DM18 (Biodiversity) of the adopted Worthing Local Plan (Worthing Borough Council, 2023) states that:

"...

h) New developments (excluding change of use and householder) should provide a minimum of 10% net gain for biodiversity - where possible this should be onsite. Where it is required/necessary to deliver biodiversity net gain offsite this should be part of a strategic ecological network having regard to Green Infrastructure and Local Nature Recovery strategies. Where it is achievable, a 20%+ onsite net gain is encouraged and is required for development on previously developed sites. Major developments will be expected to demonstrate this at the planning application stage using biodiversity metrics. This should be accompanied by a long term management plan.

..."

2.2.2 Policy SS5 (Local Green Gaps) identifies the Site, which is also known as Chatsmore Farm, as a Local Green Gap.

3 Methodology

3.1 Overview

3.1.1 The BNG assessment has been carried out using the 2023 Defra Statutory Biodiversity Metric and accompanying User Guide (Natural England, 2023b). The Metric uses habitats as a proxy for wider biodiversity with different habitat types scored according to their relative biodiversity value. This value is then adjusted depending on the condition and location of the habitat, to calculate 'Biodiversity Units' (BU) for the specific development site. Pre-intervention BU are subtracted from the post-intervention BU to determine the change in biodiversity value attributable to the development.

3.1.2 There are four key steps to using the Metric which are illustrated in Figure 3.1 and described further in the following sections.

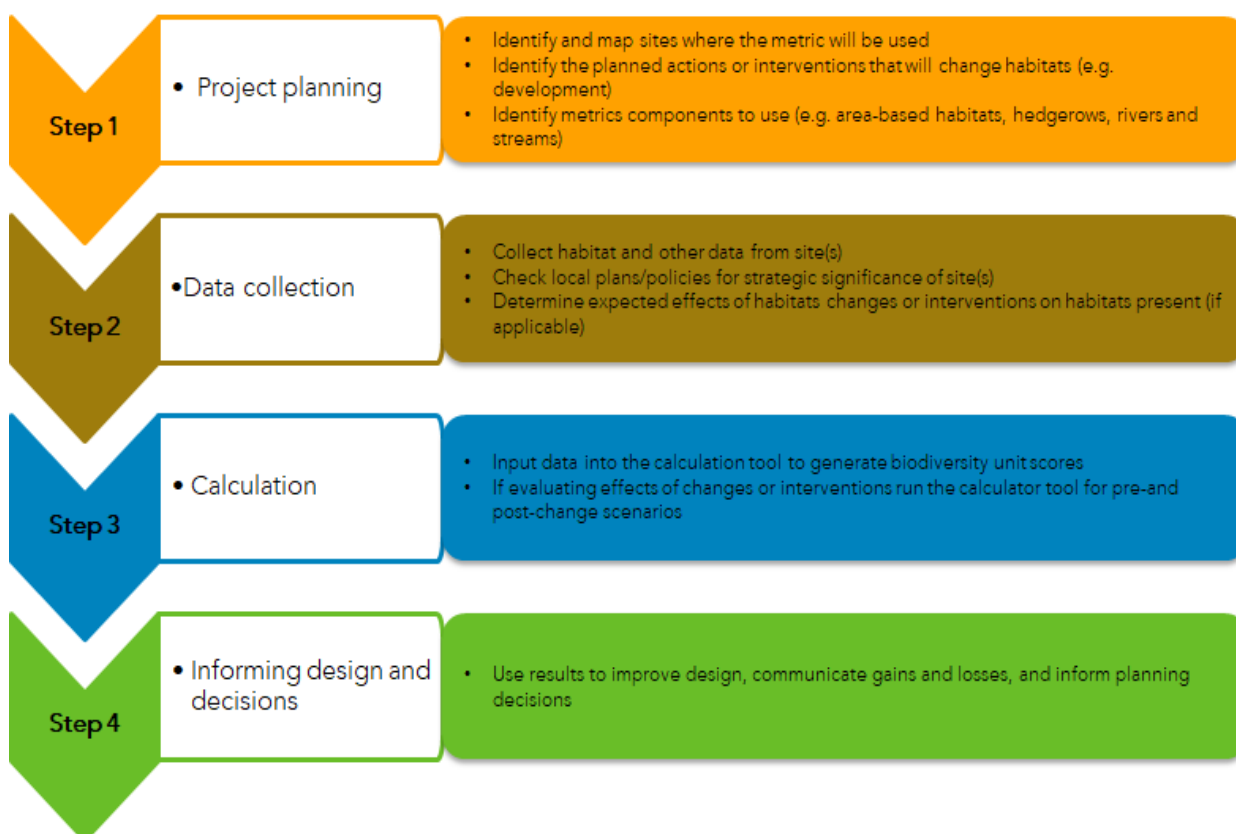


Figure 3.1: Key Steps to Apply the Defra Metric

3.2 Project Planning (Step 1)

3.2.1 The development site for which the BNG assessment has been undertaken is identified by the red line boundary shown on Figure 1.1. The Concept Masterplan is shown at Figure 1.2 and the

Landscape Strategy Plan is shown at Appendix III. The existing habitats within the development site include area, hedgerow and watercourse habitats, and therefore all three components of the Metric have been applied, as discussed further in section 3.4.

3.3 Data Collection (Step 2)

Area and Hedgerow Habitats

Pre-development habitats

- 3.3.1 UEEC deployed experienced ecologists on 18 October 2023 (area and hedgerow habitats) and 6 November 2023 (watercourse habitats) to undertake site walkover surveys to establish the extent, type and condition of habitats on site. During the surveys, each habitat within the site boundary was identified according to the UK Habitat Classification System⁵. The site was divided into land parcels, based on the different habitats present. For each habitat, lists of plant species (where applicable) were recorded, as well as an indication of their relative frequency and abundance (using the DAFOR⁶ scale). The surveys confirmed the extent and classification of habitats on site, in addition to collecting data relevant to the relevant Statutory Biodiversity Metric Condition Assessments (Natural England, 2023c).
- 3.3.2 Annotated field maps were then digitised in ArcGIS 10.7 to produce the UKHab Pre-development plan shown at Appendix I. Each habitat polygon was clipped to the red line planning application boundary, and its area/length then calculated in GIS and exported to MS Excel for use in BNG baseline calculations. The size of each habitat parcel was recorded in hectares (ha) or kilometres (km). Each habitat parcel was assigned a condition score of Low, Medium or High, informed by the site survey and Condition Assessment Sheets.

Post-development habitats

- 3.3.3 The expected effects of habitat changes and interventions on existing habitats were established based upon the Landscape Strategy Plan (Appendix III), professional judgement and liaison with the client team. The Landscape Strategy Plan was imported into ArcGIS and mapped to produce the UKHab Post-development plan shown at Appendix II. Each proposed habitat area / length was calculated and exported to MS Excel for use in BNG post-development calculations. Each habitat parcel / length was assigned a target condition score of Low, Medium or High, informed by conversations with the landscape architect, professional judgement, and the relevant Statutory Biodiversity Metric Condition Assessments (Natural England, 2023c).

⁵ UK Hab Ltd (2023). UK Habitat Classification Version 2.0 at (<https://www.ukhab.org>)

⁶ D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare.

Watercourse Habitats

Modular River Physical Habitat (MoRPh)

- 3.3.4 UEEC deployed a trained and accredited ecologist on 6 November 2023 to carry out a MoRPh field survey and identify the watercourse habitats according to the UK Habitat Classification System⁷.
- 3.3.5 The MoRPh survey is used to characterise one or more short river sub-reaches within the project area (i.e. the red line boundary of the development) to capture the morphology, sediments, physical features and vegetation structure of the river channel and margins within 10m of the bank tops. This involves the collection of field data relating to 37 separate condition indicators for each module. These data are entered into the MoRPh Pro information system hosted by Cartographer⁸ to produce a Provisional Condition Score.
- 3.3.6 As the average MoRPh width of the watercourse was between 5 and <10m, the module length sampled was set at 20m, in line with *The MoRPh Survey Technical Reference Manual* (Gurnell, A.M. and Shuker, L.J., 2022). Accordingly, two sub-reach surveys were required to capture 20% of the total length of the watercourse.
- 3.3.7 The desk study determines the (indicative hydromorphological) River Type for an extended reach containing the study area using:
- ▶ Measurements of planform, confinement and valley gradient of an extended reach enclosing the project area
 - ▶ Information on the bed material of the river - generated from the MoRPh field survey(s)
- 3.3.8 These data are entered into the MoRPh Pro information system, which generates an indicative River Type for the reach.
- 3.3.9 The Provisional Condition Score and River Type are combined within the MoRPh Pro information system to generate a Final Condition Score for each surveyed sub-reach. This condition is then used within the Defra Statutory Biodiversity Metric to calculate the biodiversity units pre-development in relation to rivers and streams.

Post-development habitats

- 3.3.10 The expected effects of habitat changes and interventions on existing watercourse habitats was based upon the Landscape Strategy Plan and professional judgement.
- 3.3.11 Where data relating to 37 separate condition indicators alters as a result of interventions, these data are entered into the assessment for each module. The altered Provisional Condition Score and River Type are combined within the MoRPh Pro information system to generate a Final Condition Score for each surveyed sub-reach post-intervention. This condition is then used within

⁷ UK Habitat Classification: <https://ukhab.org/> (Accessed 29/11/2023).

⁸ <https://cartographer.io/>

the Defra Statutory Biodiversity Metric to calculate the biodiversity units post-development in relation to watercourses.

3.4 Calculation (Step 3)

Calculation Tool

3.4.1 The Metric is accompanied by a calculation tool which uses a number of input fields in order to calculate pre- and post-intervention biodiversity units, including:

- ▶ **Habitat types:** As described in the UK Habitat Classification System.
- ▶ **Area of habitats and length of Hedgerow and Watercourse habitats:** In hectares and kilometres.
- ▶ **Habitat condition:** Parcels of habitat will be in different ecological conditions. In addition, interventions to improve habitats will not always involve taking a habitat in poor condition and improving it to good condition. The Metric therefore takes account of variants in habitat condition.
- ▶ **Strategic significance:** The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives as set out in published local plans.
- ▶ **Watercourse / Riparian encroachment (Watercourses only):** The extent of any interventions, encroachment into the watercourse channel and riparian zone (10m from the bank top).

3.4.2 Habitat type, area / length and condition were established via the site survey and condition assessment described in section 3.3.

3.4.3 The Calculation Tool also includes a number of pre-assigned fields which are automatically populated based on habitat type inputs:

- ▶ **Habitat distinctiveness:** Based on an assessment of the distinguishing features of a habitat, including the consideration of species richness, rarity (at local, regional, national and international scales), and the degree to which a habitat supports species rarely found in other habitats.
- ▶ **Risk multipliers (Post-intervention only):** Three different risks are recognised in the Metric: difficulty of habitat creation and restoration; temporal risk i.e. the time it takes for a newly created habitat to reach target condition; and off-site risk which accounts for decreasing ecosystem services provided to the local community with compensation provided further from the development site.

Calculation of Biodiversity Units

3.4.4 Using the factors described above, equivalent BU were calculated for the development site pre- and post-intervention. No offsite habitat creation or enhancement has currently been included in the post-intervention calculations.

- 3.4.5 The following formula was used to calculate the change in BU as a consequence of the Proposed Development:

$$\text{POST-INTERVENTION BIODIVERSITY UNITS} - \text{PRE-INTERVENTION BIODIVERSITY UNITS} = \text{CHANGE IN BIODIVERSITY UNITS}$$

- 3.4.6 Where the resulting score is negative there is a net loss in biodiversity. If the score is zero, there is no net loss in biodiversity. Where the resulting score is positive, there is a net gain in biodiversity.

3.5 Informing Design and Decisions (Step 4)

- 3.5.1 Advice in incorporating biodiversity enhancements in order to assist delivery of BNG was provided during the design process and incorporated into the final design. The BNG assessment is based on the Concept Masterplan and provides an overview of net gains or losses resulting from the scheme.

3.6 Assumptions & Limitations

- 3.6.1 The net gain assessment has been calculated based upon assumptions regarding the condition of each post-development habitat to give an indication of the likely biodiversity gain/loss.
- 3.6.2 Since the site is listed in the Worthing Local Plan as a Local Green Gap, the *Strategic significance* of baseline and post-development habitats was noted where appropriate as *Formally identified in local strategy* for all three components.
- 3.6.3 Due to the outline status of the application and indicative/concept nature of the proposed site plans, habitats within areas of dwellings (and commercial buildings) and gardens were split in line with the 2023 Defra Statutory Biodiversity Metric User Guide (Natural England, 2023b, pp 48-49), i.e.:
- ▶ 70% 'Urban – developed land; sealed surface; and
 - ▶ 30% 'Urban – vegetated garden.
- 3.6.4 Avenue, street/ornamental and multi-stemmed trees were assumed to be largely non-native species and cultivars. All trees (571) were assumed to be small.
- 3.6.5 MoRPh field surveys can be undertaken at any time of year, but the ideal timing is either May, June or October when all vegetation is visible, but not so well developed that it makes accessing or observing physical features difficult. The MoRPh survey was carried out in early November, but results were cross-referenced with observations of the riparian habitat carried out during the site visit on 18 October. As such, the timing of the MoRPh survey was not considered to have been a significant limitation to the assessment.
- 3.6.6 See Appendix XII for general Legal and Technical Limitations which apply to this document.

4 Results

- 4.1.1 The pre-development habitats were digitised in accordance with UKHab for use in the DEFRA Statutory Biodiversity Metric, as shown in Appendix I. Appendix II shows the post-development habitats using UKHab classifications, based on the Landscape Strategy Plan shown at Appendix III. The data used to inform the condition assessments for the habitats pre- and post-development are provided in Appendix IV to Appendix XIV, together with calculations extracted from the Statutory Biodiversity Metric.
- 4.1.2 The extract overleaf from the Statutory Biodiversity Metric – Calculation Tool illustrates the headline results for the Proposed Development. This shows that with the implementation of the Landscape Strategy Plan (Appendix III) and achievement of the condition of the proposed habitats (Appendices IX, XI and XIV), the development proposals will achieve:
- ▶ A **net gain of +7.10 BU for area habitats, equivalent to +14.50%**;
 - ▶ A **net gain of +8.82 BU for hedgerow habitats, equivalent to +810.95%**; and
 - ▶ A **net gain of +0.83 BU for watercourse habitats, equivalent to +11.95%**.
- 4.1.3 The Proposed Development therefore complies with the current requirements for the achievement of net gain, including compliance with the trading rules.

| | | |
|--|--------------------------|---------|
| On-site baseline | <i>Habitat units</i> | 48.99 |
| | <i>Hedgerow units</i> | 1.09 |
| | <i>Watercourse units</i> | 6.96 |
| On-site post-intervention (Including habitat retention, creation & enhancement) | <i>Habitat units</i> | 56.09 |
| | <i>Hedgerow units</i> | 9.91 |
| | <i>Watercourse units</i> | 7.79 |
| On-site net change (units & percentage) | <i>Habitat units</i> | 7.10 |
| | <i>Hedgerow units</i> | 8.82 |
| | <i>Watercourse units</i> | 0.83 |
| | | |
| Off-site baseline | <i>Habitat units</i> | 0.00 |
| | <i>Hedgerow units</i> | 0.00 |
| | <i>Watercourse units</i> | 0.00 |
| Off-site post-intervention (Including habitat retention, creation & enhancement) | <i>Habitat units</i> | 0.00 |
| | <i>Hedgerow units</i> | 0.00 |
| | <i>Watercourse units</i> | 0.00 |
| Off-site net change (units & percentage) | <i>Habitat units</i> | 0.00 |
| | <i>Hedgerow units</i> | 0.00 |
| | <i>Watercourse units</i> | 0.00 |
| | | |
| Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement) | <i>Habitat units</i> | 7.10 |
| | <i>Hedgerow units</i> | 8.82 |
| | <i>Watercourse units</i> | 0.83 |
| Spatial risk multiplier (SRM) deductions | <i>Habitat units</i> | 0.00 |
| | <i>Hedgerow units</i> | 0.00 |
| | <i>Watercourse units</i> | 0.00 |
| | | |
| FINAL RESULTS | | |
| Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement) | <i>Habitat units</i> | 7.10 |
| | <i>Hedgerow units</i> | 8.82 |
| | <i>Watercourse units</i> | 0.83 |
| Total net % change (Including all on-site & off-site habitat retention, creation & enhancement) | <i>Habitat units</i> | 14.50% |
| | <i>Hedgerow units</i> | 810.95% |
| | <i>Watercourse units</i> | 11.95% |
| Trading rules satisfied? | Yes ✓ | |

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Appendix I: UKHab Pre-development Plan

Land North West of Goring Station, Goring-by-Sea, West Sussex

-  Survey area
-  Cropland - Winter stubble
-  Grassland - Modified grassland
-  Heathland and shrub - Bramble scrub
-  Sparsely vegetated land - Tall forbs
-  Urban - Developed land, sealed surface
-  Woodland and forest - Lowland mixed deciduous woodland
-  Hedgerow - Native hedgerow
-  Line of trees - Ecologically valuable line of trees
-  Watercourse - Other rivers and streams
-  Individual tree (small)
-  Individual tree (medium)
-  10m buffer from River Condition Assessment Modules
-  Culvert
-  River Condition Assessment Module



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Ordnance Survey 0100031673

Scale (at A4): 1:5,000 Created by: MT

Date: Dec 2023 Reviewed by: NP

Drawing number:
UE0634ECO_ChatsmoreFarmManorFarm_231201:
Habitats Land NW Goring Station



Appendix II: UKHab Post-development Plan

Land North West of Goring Station, Goring-by-Sea, West Sussex

-  Survey area
-  Grassland - Modified grassland
-  Grassland - Other neutral grassland
-  Heathland and shrub - Bramble scrub
-  Heathland and shrub - Mixed scrub
-  Buildings and gardens
-  Sparsely vegetated land - Tall forbs
-  Urban - Developed land, sealed surface
-  Woodland and forest - Lowland mixed deciduous woodland
-  Woodland and forest - Other woodland; broadleaved
-  Hedgerow - Native hedgerow
-  Hedgerow - Species-rich native hedgerow
-  Line of trees - Ecologically valuable line of trees
-  Watercourse - Other rivers and streams
-  Individual tree (small)
-  10m buffer from River Condition Assessment Modules
-  Culvert
-  River Condition Assessment Module



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Ordnance Survey 0100031673

Scale (at A4): 1:5,000 Created by: MT
Date: Dec 2023 Reviewed by: NP
Drawing number:
UE0634ECO_ChatsmoreFarmManorFarm_231204:
Habitats Land NW Goring Station



Appendix III: Landscape Strategy Plan

1. Landscape Setting and Character

The Site is not covered by any statutory, or non-statutory designations for landscape character or quality. The Site's character is influenced by its proximity to the surrounding urban areas, which border the site on three sides, to the coastal railway line, and by Littlehampton Road which lies a short distance to the north. It forms part of the extensive urban area which extends along the low lying coastal plain, between the English Channel and the South Downs National Park.

The site layout and landscape strategy has been designed to respond to the Site's location at the edge of the settlement. The following key layout and landscape principles have informed the proposed development:

- Proposed development to be set back to the south of Ferring Rife, and the agricultural field to the north to remain in productive arable use;
- HV pylons and cables to be undergrounded;
- New wildlife and bio-diversity, and recreational enhancements to be undertaken within the open space alongside Ferring Rife;
- Landscaping within the open space to the north of the Site to provide an attractive setting for the new homes and soften views of built development from the north;
- Green Corridors to break-up development parcels, and provide wildlife and recreational linkages across the Site;
- New play areas to be located within the open spaces;
- New sustainable drainage features to be landscaped to form an integral part of the open space network; and
- Lower density development located at the northern edge of the site, with higher density development alongside the railway line and adjacent to the station;



7. Wildlife and Biodiversity

The proposals include significant opportunities to enhance existing habitats, and to create areas of new habitat for the benefit of local wildlife. A minimum 10m buffer zone will be provided along the Ferring Rife corridor, which provides habitat for water voles and is an important corridor for foraging and commuting bats. The vast majority of existing trees will be retained, particularly where these offer opportunities for roosting bats. In addition, a number of bat and bird boxes will be included within the fabric of new homes, to provide additional roosting / nesting opportunities for these species.

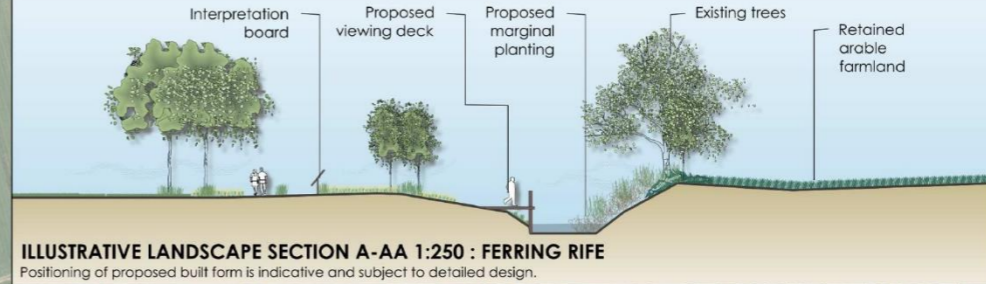
Existing hedgerows will be retained and enhanced with new native fruit / seed / nut / nectar bearing species of local provenance. Buffers of longer, tussocky grassland will be maintained alongside these features. Former field hedgerows will also be recreated, providing new wildlife corridors which connect habitats across the Site. Hibernacula for reptiles and amphibians will be provided within these margins.

Significant areas of species rich grassland will be created within the open spaces alongside Ferring Rife, which will add to species diversity and provide a rich source of habitat for invertebrates. New marginal and wetland habitat will be created within the sustainable drainage basins.



2. Ferring Rife and Public Open Space

The wide drainage ditch, Ferring Rife, provides the focus for the proposed public park which extends alongside the watercourse. The rife forms a logical extent to the proposed development area, with the new homes set back some distance to the south. The existing overhead pylons will be undergrounded within the open space. The proposed open space will have a semi-natural character, with extensive areas of species rich grassland creation, new tree and shrub planting, and landscape and bio-diversity enhancements along the route of the water course. There is also an opportunity to restore / recreate sections of field boundary hedgerows. The proposals will allow public access to the water course, and there will be opportunities for passive and active recreation within the new open spaces.



3. Green Corridors

The proposed development parcels will be broken up by a series of Green Corridors. These will provide recreational links across the Site, linking the new open spaces to the existing public rights of way network and surrounding facilities. New tree planting and soft landscaping will soften views of the built development, and will provide an attractive outlook for the new homes.



4. Play Strategy

New play areas will be provided within the new open spaces, catering for both informal and formal play. A new play area will be provided within the open space alongside Ferring Rife. This will be designed to have a more 'natural' character, with timber and natural play elements. It will be designed to serve a range of age groups. A more formal play area will be provided within the green corridor between the development parcels. This will be designed primarily for younger children (up to 8 years).



5. Green Streets, Public Realm and Access

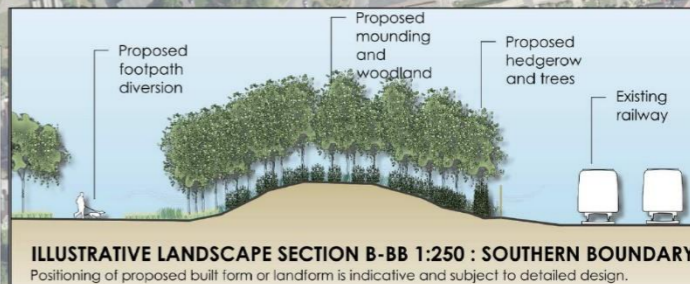
The proposed development will be set back from the new access off Goring Street, with space to provide a landscaped gateway at the entrance to the site. The new buildings will frame the open space and access road, with new avenue tree planting and hard and soft landscaping providing an attractive frontage to the adjacent highway.

The principal distributor road forms a loop within the development. This street will be characterised by a largely continuous built frontage, set back with roadside verges providing opportunities for regular tree planting. Planting will have a more formal character, with avenue and street trees and clipped hedgerows. At the edges of the development, housing will be lower density and the proposed landscaping will have a more informal character. Native hedging will be used to define private driveways adjacent to open spaces, particularly at the periphery of the development. Tree planting will incorporate native species and native cultivars, and shrub species will be selected which have known wildlife benefits.



6. Sustainable Drainage Features

Surface runoff water will be captured in drainage basins which will be located within the open space across the Site. These basins will be designed to form an integral part of the open space, and will include areas of species rich grassland, trees and shrub planting tolerant of periodic wet conditions, and areas of aquatic and marginal planting.



LEGEND

- Application Boundary
- Land in applicant's control

Existing

- Existing trees / vegetation
- Trees / vegetation removed
- Existing public footpath
- Existing pylons (overhead cables to be grounded through the Site)

Proposed

- Structural Tree Planting Mix
- Thicket Mix
- Proposed Avenue Trees
- Proposed Street / Ornamental Trees
- Proposed Native Trees
- Mull-stem tree
- Native hedge planting
- Amenity grass
- Wildflower meadow
- Bulb Planting
- SuDS features
- Recreational footways
- Mown paths
- Section of public footpath to be diverted
- Natural Play Area
- Formal Play Area
- Informal seating (benches, picnic tables etc.)

Scale: 0 20 40 60 80 100 metres

North Arrow

| | | | |
|-----|----------|----|-------------------------------|
| Rev | Date | By | Description |
| C | 20/07/20 | PH | Updated to new red line |
| B | 16/07/20 | PH | Updated to include extra text |
| A | 15/07/20 | PH | Updated to match layout |

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Project: Land North West of Goring Station

Title: Landscape Strategy Plan

Client: Persimmon Homes Thames Valley

Scale: 1:2000 @ A1 | Drawn: PH
Date: July 2020 | Checked: CA
Drawing No: CSA/2304/118 | Rev: C

Appendix IV: Pre-development Habitat Condition Sheets (Habitat Baseline)

| Condition Sheet: GRASSLAND Habitat Type (low distinctiveness) | | |
|--|---|------------------------------|
| UK Habitat Classification (UKHab) Habitat Type(s) | | |
| Grassland - Modified grassland | | |
| Condition Assessment Criteria | | Criterion passed (Yes or No) |
| A | There are 6-8 vascular plant species per m ² present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m ² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet. | N |
| B | Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed. | N |
| C | Some scattered scrub (including bramble <i>Rubus fruticosus</i> agg.) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type. | Y |
| D | Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities. | Y |
| E | Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² . | Y |
| F | Cover of bracken <i>Pteridium aquilinum</i> is less than 20%. | Y |
| G | There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴). | Y |
| Essential criterion achieved (Yes or No) | | N |
| Number of criteria passed | | 5 |
| Condition Assessment Result | Condition Assessment Score | Score Achieved x/√ |
| Passes 6 or 7 criteria including passing essential criterion A | Good (3) | |

| | | |
|--|--------------|---|
| Passes 4 or 5 criteria including passing essential criterion A | Moderate (2) | |
| Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A) | Poor (1) | ✓ |
| Notes | | |
| <p>Footnote 1 – Creeping thistle <i>Cirsium arvense</i>, spear thistle <i>Cirsium vulgare</i>, curled dock <i>Rumex crispus</i>, broad-leaved dock <i>Rumex obtusifolius</i>, common nettle <i>Urtica dioica</i>, creeping buttercup <i>Ranunculus repens</i>, greater plantain <i>Plantago major</i>, white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i>.</p> <p>Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.</p> <p>Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.</p> <p>Footnote 4 – Wildlife and Countryside Act 1981 (as amended).</p> | | |

| | | |
|---|--|-------------------------------------|
| Condition Sheet: URBAN Habitat Type | | |
| Habitat Type | | |
| Sparsely vegetated land – Tall forbs | | |
| Condition Assessment Criteria | | Criterion passed (Yes or No) |
| A | Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area. | N |
| B | The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year. | Y |
| C | Invasive non-native plant species (listed on Schedule 9 of WCA ¹) and others which are to the detriment of native wildlife (using professional judgement) ² cover less than 5% of the total vegetated area ³ . Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover). | Y |
| Essential criteria relevant for habitat type achieved (Yes or No) | | Y |
| Number of criteria passed | | 2 |
| Condition Assessment Result | Condition Assessment Score | Score Achieved x/✓ |
| <ul style="list-style-type: none"> • Passes all 3 core criteria; AND <ul style="list-style-type: none"> • Meets the requirements for Good condition within criterion C. | Good (3) | |
| <ul style="list-style-type: none"> • Passes 2 of 3 core criteria; OR | Moderate (2) | ✓ |

| | | |
|--|----------|--|
| <ul style="list-style-type: none"> • Passes 3 of 3 core criteria but does not meet the requirements for Good condition within criterion C. | | |
| <ul style="list-style-type: none"> • Passes 0 or 1 of 3 core criteria. | Poor (1) | |
| Notes | | |
| <p>Footnote 1 – Wildlife and Countryside Act 1981 (as amended).</p> <p>Footnote 2 – Sources of information about detrimental non-native species can be found on the GB Non-native Species Secretariat (GBNNS) website: Home » NNSS (nonnativespecies.org) and Natural England Access to Evidence page should also be checked for up-to-date information: Horizon-scanning for invasive non-native plants in Great Britain - NECR053 (naturalengland.org.uk) For criterion C – For green roof habitat types only – buddleia <i>Buddleja davidii</i> should be assessed alongside Schedule 9 species. This species impairs the health of the local ecosystem and reduces the biodiversity potential of the roof. It is also a sign that a roof has not been planted and seeded correctly in subsequent years.</p> <p>Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.</p> <p>Footnote 4 – Use professional judgement. Sources of information about non-native species that are not detrimental to native wildlife can be found on the GBNNS website: Alternative plants » NNSS (nonnativespecies.org)</p> | | |

| Condition Sheet: WOODLAND Habitat Type | | | | | |
|--|---|---|--|--|---------------------|
| UKHab Habitat Type(s) | | | | | |
| Woodland and forest – Lowland Mixed Deciduous Woodland | | | | | |
| Condition Assessment Criteria | | | | | |
| Indicator | | Good (3 points) | Moderate (2 points) | Poor (1 point) | Score per indicator |
| 1 | Age distribution of trees ¹ | Three age-classes ¹ present. | Two age-classes ¹ present. | One age-class ¹ present. | 2 |
| 2 | Wild, domestic and feral herbivore damage | No significant browsing damage evident in woodland ² . | Evidence of significant browsing pressure is present in less than 40% of whole woodland ² . | Evidence of significant browsing pressure is present in 40% or more of whole woodland ² . | 3 |
| 3 | Invasive plant species ³ | No invasive species ³ present in woodland. | Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, and other invasive species ³ <10% cover. | Rhododendron or cherry laurel present, or other invasive species ³ ≥10% cover. | 3 |
| 4 | Number of native tree species | Five or more native tree or shrub species ⁴ found | Three to four native tree or shrub species ⁴ found | Two or less native tree or shrub species ⁴ across woodland parcel. | 2 |

| | | | | | |
|----|--|--|---|---|---|
| | | across woodland parcel. | across woodland parcel. | | |
| 5 | 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 . | 3 |
| 6 | Open space within woodland ⁴ | 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 . | 3 |
| 7 | Woodland regeneration ⁵ | 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 . | 1 |
| 8 | Tree health | Tree mortality 10% or less, no pests or diseases and no crown dieback ⁹ . | 11% to 25% tree 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 . | 3 |
| 9 | 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. | 1 |
| 10 | Woodland vertical structure ⁶ | 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 . | 2 |
| 11 | Veteran trees ⁷ | Two or more veteran trees ¹² per hectare. | One veteran tree ¹² per hectare. | No veteran trees ¹² present in woodland. | 1 |
| 12 | Amount of deadwood | 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen 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 and fallen 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 and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ . | 1 |

| | | | | | |
|--|-----------------------------------|--|--|--|------------------------|
| 13 | Woodland disturbance ⁸ | 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 . | 1 hectare or more of nutrient enrichment, and or 20% or more of woodland area has damaged ground ¹⁴ . | 1 |
| Total Score | | | | | 26 |
| Condition Assessment Result | | | Condition Assessment Score | | Result Achieved |
| Total score >32 (33 to 39) | | | Good (3) | | |
| Total score 26 to 32 | | | Moderate (2) | | ✓ |
| Total score <26 (13 to 25) | | | Poor (1) | | |
| Notes | | | | | |
| <p>Footnotes below refer to the EWBG woodland condition assessment details: EWBG (No date). Assessing your Woodland's Condition [online]. Available from: Woodland Wildlife Toolkit (sylva.org.uk)</p> <p>The woodland condition assessment survey methodology is outlined in the EWBG toolkit. However, the criteria on this sheet are those specific to the Statutory Biodiversity Metric and must be used when assessing woodland condition.</p> <p>Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch <i>Betula</i> sp., cherry <i>Prunus</i> sp. or <i>Sorbus</i> sp.: 0 – 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). For birch, cherry or <i>Sorbus</i> species; 0 - 20 years = Young; 21 - 60 years = Intermediate; >60 years = Old. A recognisable age-class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age-class' of young trees.</p> <p>Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.</p> <p>Footnote 3 - See EWBG method INDICATOR 3 for more information. Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly.</p> <p>Check for the presence of all plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), particularly the following invasive non-native species: American skunk cabbage <i>Lysichiton americanus</i>; Himalayan balsam <i>Impatiens glandulifera</i>; Japanese knotweed <i>Reynoutria japonica</i>; cherry laurel <i>Prunus laurocerasus</i>; shallon <i>Gaultheria shallon</i>; snowberry <i>Symphoricarpos albus</i>; variegated yellow archangel <i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i>; rhododendron <i>Rhododendron ponticum</i>; and tree-of-heaven <i>Alianthus altissima</i>.</p> <p>Footnote 4 - See EWBG method INDICATOR 4 and Table 2 for more information. The number of different native tree or shrub species including young trees and shrubs. A list of commonly found native tree and shrub species is provided in Table 2. Not all species listed are native to all parts of the UK. Note a list of commonly found non-native tree species are also included and should be recorded if present.</p> <p>Footnote 5 - See EWBG method INDICATOR 5 and for more information. The abundance of native tree species in upper (>5 m) and understorey (up to 5 m) layers including young trees and shrubs.</p> | | | | | |

Footnote 6 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (for example, glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (for example, tarmac, buildings, rivers). Area is at least 10 m wide with less than 20% covered by shrubs or trees.

Footnote 7 – Given the increased ratio of edge habitat to woodland where the woodland is <10ha.

Footnote 8 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, but the regeneration indicator gathers additional information by considering regeneration potential - if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

Footnote 9 - See EWBG method INDICATOR 9 for more information and Table 3 for a list of diseases and pests and their risk level.

Footnote 10 - See EWBG method INDICATOR 10 directing to NVC key for more information. The 'UKHab to NVC translation table' in the UK Habitat Classification resources may also be useful to assess this."

Footnote 11 – This criterion looks at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer. There might be no storeys where the woodland has been felled. See EWBG INDICATOR 11 for more information.

Footnote 12 - See EWBG method INDICATOR 12 for more information. See gov.uk standing advice on ancient and veteran trees. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/101222/ancient-woodland-and-trees-policy-in-england.pdf)

and:

[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/101222/ancient-woodland-and-trees-policy-in-england.pdf)

EWBG INDICATOR 12 is the relevant indicator.

Footnote 13 – See EWBG method INDICATOR 13 for more information. This includes logs, large dead branches on the forest floor and stumps (<1 m tall) >20 cm diameter at narrowest point and >50 cm long. Also includes standing dead trees (>1 m tall) and also deadwood on standing live trees. Diameter is measured at the narrowest point on the stem. Minimum diameter of 20 cm.

Footnote 14 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery, animal poaching or litter."

| Condition Sheet: URBAN TREES Habitat Type | | |
|---|---|--------------------------|
| UKHab Habitat Type(s) | | |
| Urban - Urban tree | | |
| Condition Assessment Criteria | | Condition Achieved (Y/N) |
| 1 | The tree is a native species (or more than 70% within the block are native species). | N |
| 2 | The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion). | Y |
| 3 | The tree is mature ² or veteran ³ (or more than 50% within the block are mature ² or veteran ³). | N |
| 4 | There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height. | Y |



| 5 | Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark | N |
|---|--|-----------------------------------|
| 6 | More than 20% of the tree canopy area is oversailing vegetation beneath. | Y |
| Number of criteria passed | | 4 |
| Condition Assessment Result | | Condition Assessment Score |
| Passes 5 or 6 of 6 criteria | | Good (3) |
| Passes 3 or 4 of 6 criteria | | Moderate (2) ✓ |
| Passes 0, 1 or 2 of 6 criteria | | Poor (1) |
| Notes | | |
| <p>Footnote 1 - This covers all trees in artificial urban habitats such as private gardens, private land, institutional land and land used for transport functions; roads, streets, canals, rail, footpaths etc. Trees in urban areas can under the right conditions provide a large range of habitat opportunities, supporting lichens, invertebrates and birds. Tree planting in urban areas has for over two hundred years also introduced non-native species into towns and cities. In the context of biodiversity native species are the preferred option. However, non-native tree species can contribute positively to biodiversity richness particularly in relation to providing a seasonal food source for nectar feeders and other invertebrates as well as supporting vertebrates that feed on species that are hosted by non-native trees. Examples are early and late flowering species of <i>Prunus</i> and aphids on varieties of <i>Acer</i> providing food for species higher up the food chain. The species of trees (native or non-native) together with the intensity and type of management they are subject to will determine the biodiversity value of the trees in question. Trees in urban areas provide opportunistic sites for biodiversity to colonise and re-colonise, increasing connectivity and contributing to biodiversity critical mass between already established patches or sites. This is especially so where transport corridors are populated with mixed native species</p> <p>Footnote 2 - A mature tree in this context is one that is at least 2/3 expected fully mature height for the species.</p> <p>Footnote 3 - All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:</p> <ol style="list-style-type: none"> 1. Rot sites associated with wounds which are decaying >400cm²; 2. Holes and water pockets in the trunk and mature crown >5 cm diameter; 3. Dead branches or stems >15 cm diameter; 4. Any hollowing in the trunk or major limbs; 5. Fruit bodies of fungi known to cause wood decay. | | |

Appendix V: Site Habitat Baseline

| Existing area habitats | | | | Distinctiveness | | Condition | | Strategic significance | | | Required Action to Meet Trading Rules | Ecological baseline |
|--|----------------------------------|-----------------------|-----------------|-----------------|-------|--------------------------|-------|---------------------------------------|-----------------------------|-----------------------------------|---|---------------------|
| Broad Habitat | Habitat Type | Irreplaceable habitat | Area (hectares) | Distinctiveness | Score | Condition | Score | Strategic significance | Strategic significance | Strategic significance multiplier | | Total habitat units |
| Cropland | Winter stubble | No | 17.97106273 | Low | 2 | Condition Assessment N/A | 1 | Formally identified in local strategy | High Strategic Significance | 1.15 | Same distinctiveness or better habitat required ≥ | 41.33 |
| Grassland | Modified grassland | No | 1.059432798 | Low | 2 | Poor | 1 | Formally identified in local strategy | High Strategic Significance | 1.15 | Same distinctiveness or better habitat required ≥ | 2.44 |
| Heathland and shrub | Bramble scrub | No | 0.256570514 | Medium | 4 | Condition Assessment N/A | 1 | Formally identified in local strategy | High Strategic Significance | 1.15 | Same broad habitat or a higher distinctiveness habitat required (≥) | 1.18 |
| Sparsely vegetated land | Tall forbs | No | 0.423826955 | Low | 2 | Moderate | 2 | Formally identified in local strategy | High Strategic Significance | 1.15 | Same distinctiveness or better habitat required ≥ | 1.95 |
| Woodland and forest | Lowland mixed deciduous woodland | No | 0.069780466 | High | 6 | Moderate | 2 | Formally identified in local strategy | High Strategic Significance | 1.15 | Same habitat required = | 0.96 |
| Urban | Developed land; sealed surface | No | 0.614457051 | V.Low | 0 | N/A - Other | 0 | Formally identified in local strategy | High Strategic Significance | 1.15 | Compensation Not Required | 0.00 |
| Individual trees | Rural tree | No | 0.122145122 | Medium | 4 | Moderate | 2 | Formally identified in local strategy | High Strategic Significance | 1.15 | Same broad habitat or a higher distinctiveness habitat required (≥) | 1.12 |
| Total habitat area | | | 20.52 | | | | | | | | | 48.99 |
| Site Area (Excluding area of individual trees, green walls, intertidal hard structures) | | | 20.40 | | | | | | | | | |

| Area retained | Area enhanced | Baseline units retained | Baseline units enhanced | Area habitat lost | Units lost |
|---------------|---------------|-------------------------|-------------------------|-------------------|--------------|
| | | 0.00 | 0.00 | 17.97 | 41.33 |
| | | 0.00 | 0.00 | 1.06 | 2.44 |
| 0.118641 | | 0.55 | 0.00 | 0.14 | 0.63 |
| 0.258782 | | 1.19 | 0.00 | 0.17 | 0.76 |
| 0.06978 | | 0.96 | 0.00 | 0.00 | 0.00 |
| | | 0.00 | 0.00 | 0.61 | 0.00 |
| 0.040715 | | 0.37 | 0.00 | 0.08 | 0.75 |
| 0.49 | 0.00 | 3.07 | 0.00 | 20.03 | 45.91 |

| | |
|---|--------------|
| Total area lost (excluding area of individual trees, green walls and intertidal hard structures) | 19.95 |
|---|--------------|

Appendix VI: Pre-development Habitat Condition Sheets (Hedgerow Baseline)

| Condition sheet: HEDGEROW Habitat Types | | | |
|--|---|--|------------------------------|
| Habitat Type | | | |
| Native hedgerow | | | |
| Condition Assessment Criteria | | | |
| <p>A series of ten attributes, representing key physical characteristics are used for this assessment. This assessment is based on the Hedgerow Survey Handbook¹ and Favourable Conservation Status document². For further clarification please refer to the Hedgerow Survey Handbook.</p> <p>Each attribute is assigned to one of five functional groups (A – E) and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria.</p> | | | |
| Hedgerow favourable condition attributes | | | |
| Attributes and functional groupings (A, B, C, D & E) | Criteria (the minimum requirements for 'favourable condition' | Description | Criterion passed (Yes or No) |
| Core groups - applicable to all hedgerow types | | | |
| A1. | Height | <p>>1.5 m average along length</p> <p>The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.</p> <p>Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).</p> <p>A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).</p> | Y |
| A2. | Width | <p>>1.5 m average along length</p> <p>The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.</p> <p>Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height.</p> | Y |

| | | | | |
|-----|---|--|---|---|
| | | | Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). | |
| B1. | Gap - hedge base | Gap between ground and base of canopy <0.5 m for >90% of length | This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook). | N |
| B2. | Gap - hedge canopy continuity | Gaps make up <10% of total length; and No canopy gaps >5 m | This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate). | Y |
| C1. | Undisturbed ground and perennial vegetation | >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: - measured from outer edge of hedgerow, and - is present on one side of the hedge (at least) | This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches. | Y |
| C2. | Nutrient-enriched perennial vegetation | Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground | The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold. | N |
| D1. | Invasive and neophyte species | >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species | Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information | Y |

| | | | | |
|---|--|--|--|---------------------|
| | | (including those listed on Schedule 9 of WCA ³) and recently introduced species. | on archaeophytes and neophytes see the JNCC website ⁴ , as well as the BSBI website ⁵ where the 'Online Atlas of the British and Irish Flora' ⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website ⁷ . | |
| D2. | Current damage | >90% of the hedgerow or undisturbed ground is free of damage caused by human activities. | This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g., excessive hedgerow cutting). | Y |
| Additional group - applicable to hedgerows with trees only | | | | |
| E1. | Age class | There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient ⁸), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow. | This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species. | n/a |
| E2. | Tree health | At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). 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. | This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens. | n/a |
| The hedgerow condition assessment generates a weighting (score) ranging from 1 – 3, which is used within the metric. The scores for each are set out in the tables below. | | | | |
| Condition categories for hedgerows without trees | | | | |
| Category | Category Requirements | | | Metric Score |
| Good | No more than 2 failures in total; AND No more than 1 failure in any functional group. | | | 3 |

| | | |
|---|--|----------|
| Moderate | No more than 4 failures in total; AND <u>Does not fail both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 and C2= Moderate condition). | 2 |
| Poor | Fails a total of more than 4 attributes; OR <u>Fails both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 and B2 = Poor condition). | 1 |
| Score achieved: | | 3 |
| Notes | | |
| <p>Footnote 1 – DEFRA (2007) Hedgerow Survey Handbook. A standard procedure for local surveys in the UK. [online] Available on: layout (hedgelinek.org.uk)</p> <p>Footnote 2 – STALEY, J.T. ET AL. (2020) Definition of Favourable Conservation Status for Hedgerows. [online] Available on: Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org.uk)</p> <p>Footnote 3 – Wildlife and Countryside Act 1981 (as amended).</p> <p>Footnote 4 – CHEFFINGS, C. M. et al. (2005) The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. [online] Available on: The Vascular Plant Red Data List for Great Britain (Species Status No. 7) JNCC Resource Hub</p> <p>Footnote 5 – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). Definitions: wild, native or alien? [online] Available on: Definitions: wild, native or alien? – Botanical Society of Britain & Ireland (bsbi.org)</p> <p>Footnote 6 – BSBI and Biological Records Centre (BRC) (2022) Online Atlas of the British and Irish Flora. [online] Available on: Acknowledgements Online Atlas of the British and Irish Flora (brc.ac.uk)</p> <p>Footnote 7 – GB NON-NATIVE SPECIES SECRETARIAT (GBNNS) (2022) Available on: Home » NNS (nonnativespecies.org)</p> <p>Footnote 8 – See gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)</p> | | |

| Condition Sheet: LINE OF TREES Habitat Type | | |
|---|---|---------------------------------|
| UKHab Habitat Type(s) | | |
| Ecologically valuable line of trees | | |
| <p>See the Statutory Biodiversity Metric User Guide. This assessment is based on the Hedgerow Survey Handbook¹. For further clarifications please refer to the Handbook. Where ancient and veteran trees are present within the line of trees, see Footnote 2 for standing advice.</p> | | |
| Condition Assessment Criteria | | Condition Achieved (Y/N) |
| A | At least 70% of trees are native species. | N |
| B | Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide. | Y |
| C | One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark. | Y |
| D | 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 | N |

| | (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice ² . | |
|---|--|-----------------------|
| E | 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. | Y |
| Number of criteria passed | | 3 |
| Condition Assessment Result | Condition Assessment Score | Score Achieved x/✓ |
| Passes 5 of 5 criteria | Good (3) | |
| Passes 3 or 4 of 5 criteria | Moderate (2) | ✓ |
| Passes 0, 1 or 2 of 5 criteria | Poor (1) | |
| Notes | | |
| <p>Footnote 1 – DEFRA (2007) Hedgerow Survey Handbook: A standard procedure for local surveys in the UK. 2nd ed [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).</p> <p>Footnote 2 – Where ancient and veteran trees are present, see gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and: Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)</p> | | |

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Appendix VII: Site Hedge Baseline

| Existing hedgerow habitats | | Distinctiveness | | Condition | | Strategic significance | | | Required Action to Meet Trading Rules | Ecological baseline |
|-------------------------------------|-------------|-----------------|-------|-----------|-------|---------------------------------------|-----------------------------|-----------------------------------|---------------------------------------|----------------------|
| Habitat type | Length (km) | Distinctiveness | Score | Condition | Score | Strategic significance | Strategic significance | Strategic significance multiplier | | Total hedgerow units |
| Native hedgerow | 0.0744063 | Low | 2 | Good | 3 | Formally identified in local strategy | High Strategic Significance | 1.15 | Same distinctiveness band or better | 0.51 |
| Ecologically valuable line of trees | 0.0623968 | Medium | 4 | Moderate | 2 | Formally identified in local strategy | High Strategic Significance | 1.15 | Same distinctiveness band or better | 0.57 |
| | 0.14 | | | | | | | | | 1.09 |

| Length retained | Length enhanced | Units retained | Units enhanced | Length lost | Units lost |
|-----------------|-----------------|----------------|----------------|-------------|-------------|
| 0.07440627 | | 0.51 | 0.00 | 0.00 | 0.00 |
| 0.06239677 | | 0.57 | 0.00 | 0.00 | 0.00 |
| 0.14 | 0.00 | 1.09 | 0.00 | 0.00 | 0.00 |

Appendix VIII: Post-development Habitat Condition Sheets (Habitat Creation)

| Condition Sheet: GRASSLAND Habitat Type (low distinctiveness) | | |
|--|--|------------------------------|
| UK Habitat Classification (UKHab) Habitat Type(s) | | |
| Grassland - Modified grassland (amenity grassland) | | |
| Condition Assessment Criteria | | Criterion passed (Yes or No) |
| A | <p>There are 6-8 vascular plant species per m² present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition.</p> <p>Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.</p> | N |
| B | Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed. | N |
| C | <p>Some scattered scrub (including bramble <i>Rubus fruticosus</i> agg.) may be present, but scrub accounts for less than 20% of total grassland area.</p> <p>Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.</p> | Y |
| D | Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities. | N |
| E | Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² . | Y |
| F | Cover of bracken <i>Pteridium aquilinum</i> is less than 20%. | Y |
| G | There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴). | Y |
| Essential criterion achieved (Yes or No) | | N |
| Number of criteria passed | | 4 |
| Condition Assessment Result | Condition Assessment Score | Score Achieved x/√ |
| Passes 6 or 7 criteria including passing essential criterion A | Good (3) | |

| | | |
|--|--------------|---|
| Passes 4 or 5 criteria including passing essential criterion A | Moderate (2) | |
| Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A) | Poor (1) | ✓ |
| Notes | | |
| <p>Footnote 1 – Creeping thistle <i>Cirsium arvense</i>, spear thistle <i>Cirsium vulgare</i>, curled dock <i>Rumex crispus</i>, broad-leaved dock <i>Rumex obtusifolius</i>, common nettle <i>Urtica dioica</i>, creeping buttercup <i>Ranunculus repens</i>, greater plantain <i>Plantago major</i>, white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i>.</p> <p>Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.</p> <p>Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.</p> <p>Footnote 4 – Wildlife and Countryside Act 1981 (as amended).</p> | | |

| Condition Sheet: GRASSLAND Habitat Type (medium, high & very high distinctiveness) | | |
|---|--|------------------------------|
| UK Habitat Classification (UKHab) Habitat Type(s) | | |
| Grassland - Other neutral grassland (wildflower meadow) | | |
| Condition Assessment Criteria | | Criterion passed (Yes or No) |
| A | The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description). ¹ Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only. | Y |
| B | Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed. | N |
| C | Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ² . | Y |
| D | Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%. | Y |
| E | Combined cover of species indicative of suboptimal condition ³ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ⁴ (as listed on Schedule 9 of WCA ⁵) are present, this criterion is automatically failed. | Y |
| Additional Criterion - must be assessed for all non-acid grassland types | | |
| F | There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species | N |

| referenced in Footnote 3 and 5 cannot contribute towards this count). | | |
|--|----------------------------|--------------------|
| Note - this criterion is essential for achieving Good condition for non-acid grassland types only. | | |
| Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No) | | N |
| Number of criteria passed | | 4 |
| Condition Assessment Result | Condition Assessment Score | Score Achieved x/✓ |
| Passes 5 or 6 criteria, including essential criterion A and additional criterion F. | Good (3) | |
| Passes 3 - 5 criteria, including essential criterion A. | Moderate (2) | ✓ |
| Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F. | Poor (1) | |
| Notes | | |
| <p>Footnote 1 - Professional judgement should be used alongside the UKHab description.</p> <p>Footnote 2 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.</p> <p>Footnote 3 - Species indicative of suboptimal condition for this habitat type include: creeping thistle <i>Cirsium arvense</i>, spear thistle <i>Cirsium vulgare</i>, curled dock <i>Rumex crispus</i>, broad-leaved dock <i>Rumex obtusifolius</i>, common nettle <i>Urtica dioica</i>, creeping buttercup <i>Ranunculus repens</i>, greater plantain <i>Plantago major</i>, white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i>. There may be additional relevant species local to the region and or site.</p> <p>Footnote 4 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.</p> <p>Footnote 5 – Wildlife and Countryside Act 1981 (as amended).</p> | | |

| Condition Sheet: SCRUB Habitat Type | | |
|-------------------------------------|--|------------------------------|
| UKHab Habitat Type | | |
| Heathland and shrub - Mixed scrub | | |
| Condition Assessment Criteria | | Criterion passed (Yes or No) |
| A | The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). ¹ – At least 80% of scrub is native, – There are at least three native woody species ² , – No single species comprises more than 75% of the cover (except hazel <i>Corylus avellana</i> , common juniper <i>Juniperus communis</i> , sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i> , which can be up to 100% cover). | Y |
| B | Seedlings, saplings, young shrubs and mature (or ancient or veteran) ³ shrubs are all present. | N |

| C | There is an absence of invasive non-native plant species ⁴ (as listed on Schedule 9 of WCA ⁵) and species indicative of suboptimal condition ⁶ make up less than 5% of ground cover. | Y |
|---|--|--------------------|
| D | The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat. | N |
| E | There are clearings, glades or rides present within the scrub, providing sheltered edges. | Y |
| Number of criteria passed | | 3 |
| Condition Assessment Result (out of 5 criteria) | | Score Achieved x/√ |
| Passes 5 criteria | | Good (3) |
| Passes 3 or 4 criteria | | Moderate (2) ✓ |
| Passes 2 or fewer criteria | | Poor (1) |
| Notes | | |
| <p>Footnote 1 – Professional judgement should be used alongside the UKHab description.</p> <p>Footnote 2 – Native woody species as defined and listed in the Hedgerow Survey Handbook: DEFRA (2007) Hedgerow Survey Handbook: A standard procedure for local surveys in the UK. 2nd ed. [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).</p> <p>Footnote 3 – See gov.uk standing advice on ancient and veteran species. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)</p> <p>Footnote 4 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.</p> <p>Footnote 5 – Wildlife and Countryside Act 1981 (as amended).</p> <p>Footnote 6 – Species indicative of sub-optimal condition for this habitat type may include: non-native conifers, tree-of-heaven <i>Alianthus altissima</i>, holm oak <i>Quercus ilex</i>, European turkey oak <i>Quercus cerris</i>, cherry laurel <i>Prunus laurocerasus</i>, snowberry <i>Symphoricarpos</i> spp., shallon <i>Gaultheria shallon</i>, American skunk cabbage <i>Lysichiton americanus</i>, buddleia <i>Buddleja</i> spp., cotoneaster <i>Cotoneaster</i> spp., Spanish bluebell <i>Hyacinthoides hispanica</i> and hybrid bluebells <i>Hyacinthoides x massartiana</i>. There may be additional relevant species local to the region and or site.</p> | | |

| Condition Sheet: WOODLAND Habitat Type | | | | | |
|---|--|---|---------------------------------------|-------------------------------------|---|
| UKHab Habitat Type(s) | | | | | |
| Woodland and forest – Other woodland; Broadleaved | | | | | |
| Condition Assessment Criteria | | | | | |
| Indicator | Good (3 points) | Moderate (2 points) | Poor (1 point) | Score per indicator | |
| 1 | Age distribution of trees ¹ | Three age-classes ¹ present. | Two age-classes ¹ present. | One age-class ¹ present. | 1 |

| | | | | | |
|----|---|--|---|--|---|
| 2 | Wild, domestic and feral herbivore damage | No significant browsing damage evident in woodland ² . | Evidence of significant browsing pressure is present in less than 40% of whole woodland ² . | Evidence of significant browsing pressure is present in 40% or more of whole woodland ² . | 3 |
| 3 | Invasive plant species ³ | No invasive species ³ present in woodland. | <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, and other invasive species ³ <10% cover. | <i>Rhododendron</i> or cherry laurel present, or other invasive species ³ ≥10% cover. | 3 |
| 4 | 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. | 3 |
| 5 | 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 . | 3 |
| 6 | Open space within woodland ⁴ | 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 . | 3 |
| 7 | Woodland regeneration ⁵ | 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 . | 1 |
| 8 | Tree health | Tree mortality 10% or less, no pests or diseases and no crown dieback ⁹ . | 11% to 25% tree 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 . | 3 |
| 9 | 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. | 1 |
| 10 | Woodland vertical structure ⁶ | Three or more storeys across all survey plots, or a | Two storeys across all survey plots ¹¹ . | One or less storey across all survey plots ¹¹ . | 2 |

| | | | | | |
|--|-----------------------------------|--|---|---|-----------|
| | | complex woodland ¹¹ . | | | |
| 11 | Veteran trees ⁷ | Two or more veteran trees ¹² per hectare. | One veteran tree ¹² per hectare. | No veteran trees ¹² present in woodland. | 1 |
| 12 | Amount of deadwood | 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen 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 and fallen 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 and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ . | 1 |
| 13 | Woodland disturbance ⁸ | 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 . | 1 hectare or more of nutrient enrichment, and or 20% or more of woodland area has damaged ground ¹⁴ . | 2 |
| Total Score | | | | | 27 |
| Condition Assessment Result | | | Condition Assessment Score | Result Achieved | |
| Total score >32 (33 to 39) | | | Good (3) | | |
| Total score 26 to 32 | | | Moderate (2) | ✓ | |
| Total score <26 (13 to 25) | | | Poor (1) | | |
| Notes | | | | | |
| <p>Footnotes below refer to the EWBG woodland condition assessment details: EWBG (No date). Assessing your Woodland's Condition [online]. Available from: Woodland Wildlife Toolkit (sylva.org.uk)</p> <p>The woodland condition assessment survey methodology is outlined in the EWBG toolkit. However, the criteria on this sheet are those specific to the Statutory Biodiversity Metric and must be used when assessing woodland condition.</p> <p>Footnote 1 - See EWBG method INDICATOR 1 for more information. If tree species is not a birch <i>Betula</i> sp., cherry <i>Prunus</i> sp. or <i>Sorbus</i> sp.: 0 – 20 years (Young); 21 - 150 years (Intermediate); and >150 years (Old). For birch, cherry or <i>Sorbus</i> species; 0 - 20 years = Young; 21 - 60 years = Intermediate; >60 years = Old. A recognisable age-class should be a consistent recognisable layer across the woodland or stand being assessed. Presence of a few saplings would not indicate that the woodland has an 'age-class' of young trees.</p> <p>Footnote 2 - See EWBG method INDICATOR 2 for more information. Browsing pressure is considered to be significant where >20% of vegetation visible within each survey plot shows damage from any type of browsing pressure listed.</p> <p>Footnote 3 - See EWBG method INDICATOR 3 for more information. Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly.</p> | | | | | |

Check for the presence of all plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), particularly the following invasive non-native species: American skunk cabbage *Lysichiton americanus*; Himalayan balsam *Impatiens glandulifera*; Japanese knotweed *Reynoutria japonica*; cherry laurel *Prunus laurocerasus*; shallon *Gaultheria shallon*; snowberry *Symphoricarpos albus*; variegated yellow archangel *Lamiaeum galeobdolon* subsp. *argentatum*; rhododendron *Rhododendron ponticum*; and tree-of-heaven *Ailanthus altissima*.

Footnote 4 - See EWBG method INDICATOR 4 and Table 2 for more information. The number of different native tree or shrub species including young trees and shrubs. A list of commonly found native tree and shrub species is provided in Table 2. Not all species listed are native to all parts of the UK. Note a list of commonly found non-native tree species are also included and should be recorded if present.

Footnote 5 - See EWBG method INDICATOR 5 and for more information. The abundance of native tree species in upper (>5 m) and understorey (up to 5 m) layers including young trees and shrubs.

Footnote 6 - See EWBG method INDICATOR 6 for more information. Open space within woodland in this context is temporary open space in which trees can be expected to regenerate (for example, glades, rides, footpaths, areas of clear-fell). This differs from permanent open space where tree regeneration is not possible or desirable (for example, tarmac, buildings, rivers). Area is at least 10 m wide with less than 20% covered by shrubs or trees.

Footnote 7 – Given the increased ratio of edge habitat to woodland where the woodland is <10ha.

Footnote 8 - See EWBG method INDICATOR 8 for more information. This indicator measures regeneration potential of the woodland by considering three classes: seedlings; saplings; and young trees of 4-7 cm DBH. All three classes would fall in the 'young' category of the 'age distribution of trees' indicator, but the regeneration indicator gathers additional information by considering regeneration potential - if seedlings, saplings and young trees are all present that means natural regeneration processes are happening.

Footnote 9 - See EWBG method INDICATOR 9 for more information and Table 3 for a list of diseases and pests and their risk level.

Footnote 10 - See EWBG method INDICATOR 10 directing to NVC key for more information. The 'UKHab to NVC translation table' in the UK Habitat Classification resources may also be useful to assess this."

Footnote 11 – This criterion looks at structural diversity and is useful to understand in conjunction with the age of trees in a woodland. Vertical structure is defined as the number of canopy storeys present. Possible storey values are: 1) Upper; 2) Complex: recorded when the stand is composed of multiple tree heights that cannot easily be stratified into broad height bands (such as upper, middle or lower); 3) Middle; 4) Lower; and 5) Shrub layer. There might be no storeys where the woodland has been felled. See EWBG INDICATOR 11 for more information.

Footnote 12 - See EWBG method INDICATOR 12 for more information. See gov.uk standing advice on ancient and veteran trees. Available from:

[Keepers of time: ancient and native woodland and trees policy in England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/101421/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england.pdf)
and:

[Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/101421/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england.pdf)

EWBG INDICATOR 12 is the relevant indicator.

Footnote 13 – See EWBG method INDICATOR 13 for more information. This includes logs, large dead branches on the forest floor and stumps (<1 m tall) >20 cm diameter at narrowest point and >50 cm long. Also includes standing dead trees (>1 m tall) and also deadwood on standing live trees. Diameter is measured at the narrowest point on the stem. Minimum diameter of 20 cm.

Footnote 14 - See EWBG method INDICATOR 15 for more information. Examples of disturbance are: significant nutrient enrichment; soil compaction from trampling, machinery, animal poaching or litter. "

| Condition Sheet: URBAN TREES Habitat Type | | | |
|--|---|----------------------------|------------|
| UKHab Habitat Type(s) | | | |
| Urban - Urban tree | | | |
| Condition Assessment Criteria | | Condition Achieved (Y/N) | |
| | | Native | Non-native |
| 1 | The tree is a native species (or more than 70% within the block are native species). | Y | N |
| 2 | The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion). | Y | Y |
| 3 | The tree is mature ² or veteran ³ (or more than 50% within the block are mature ² or veteran ³). | N | N |
| 4 | There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height. | Y | Y |
| 5 | Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark | N | N |
| 6 | More than 20% of the tree canopy area is oversailing vegetation beneath. | Y | Y |
| Number of criteria passed | | 4 | 3 |
| Condition Assessment Result | | Condition Assessment Score | |
| Passes 5 or 6 of 6 criteria | | Good (3) | |
| Passes 3 or 4 of 6 criteria | | Moderate (2) | |
| Passes 0, 1 or 2 of 6 criteria | | Poor (1) | |
| Notes | | | |
| <p>Footnote 1 - This covers all trees in artificial urban habitats such as private gardens, private land, institutional land and land used for transport functions; roads, streets, canals, rail, footpaths etc. Trees in urban areas can under the right conditions provide a large range of habitat opportunities, supporting lichens, invertebrates and birds. Tree planting in urban areas has for over two hundred years also introduced non-native species into towns and cities. In the context of biodiversity native species are the preferred option. However, non-native tree species can contribute positively to biodiversity richness particularly in relation to providing a seasonal food source for nectar feeders and other invertebrates as well as supporting vertebrates that feed on species that are hosted by non-native trees. Examples are early and late flowering species of <i>Prunus</i> and aphids on varieties of <i>Acer</i> providing food for species higher up the food chain. The species of trees (native or non-native) together with the intensity and type of management they are subject to will determine the biodiversity value of the trees in question. Trees in urban areas provide opportunistic sites for biodiversity to colonise and re-colonise, increasing connectivity and contributing to biodiversity critical mass between already established patches or sites. This is especially so where transport corridors are populated with mixed native species</p> | | | |

Footnote 2 - A mature tree in this context is one that is at least 2/3 expected fully mature height for the species.

Footnote 3 - All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:

1. Rot sites associated with wounds which are decaying >400cm²;
2. Holes and water pockets in the trunk and mature crown >5 cm diameter;
3. Dead branches or stems >15 cm diameter;
4. Any hollowing in the trunk or major limbs;
5. Fruit bodies of fungi known to cause wood decay.

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Appendix IX: Site Habitat Creation

| Post intervention habitats | | | | | | | | | | | | | | | | | | | |
|--|--------------------------------|-----------------|-----------------|-------|--------------------------|-------|---------------------------------------|-----------------------------|-----------------------------------|---|---|--|---------------------------------|---------------------------------|-------------------------------|------------------------------|-------------------------------|-------------------------|--------------|
| Broad Habitat | Proposed habitat | Area (hectares) | Distinctiveness | | Condition | | Strategic significance | | | Temporal multiplier | | | | Difficulty multipliers | | | | Habitat units delivered | |
| | | | Distinctiveness | Score | Condition | Score | Strategic significance | Strategic significance | Strategic significance multiplier | Standard time to target condition (years) | Standard or adjusted time to target condition | Final time to target condition (years) | Final time to target multiplier | Standard difficulty of creation | Applied difficulty multiplier | Final difficulty of creation | Difficulty multiplier applied | | |
| Urban | Developed land; sealed surface | 8.249277813 | V.Low | 0 | N/A - Other | 0 | Formally identified in local strategy | High strategic significance | 1.15 | 0 | Standard time to target condition applied | 0 | 1.000 | Low | Standard difficulty applied | Low | 1 | 0.00 | |
| Urban | Vegetated garden | 1.893209832 | Low | 2 | Condition Assessment N/A | 1 | Formally identified in local strategy | High strategic significance | 1.15 | 1 | Standard time to target condition applied | 1 | 0.965 | Low | Standard difficulty applied | Low | 1 | 4.20 | |
| Grassland | Modified grassland | 5.858123569 | Low | 2 | Poor | 1 | Formally identified in local strategy | High strategic significance | 1.15 | 1 | Standard time to target condition applied | 1 | 0.965 | Low | Standard difficulty applied | Low | 1 | 13.00 | |
| Grassland | Other neutral grassland | 2.614271235 | Medium | 4 | Moderate | 2 | Formally identified in local strategy | High strategic significance | 1.15 | 5 | Standard time to target condition applied | 5 | 0.837 | Low | Standard difficulty applied | Low | 1 | 20.13 | |
| Heathland and shrub | Mixed scrub | 0.140189556 | Medium | 4 | Moderate | 2 | Formally identified in local strategy | High strategic significance | 1.15 | 5 | Standard time to target condition applied | 5 | 0.837 | Low | Standard difficulty applied | Low | 1 | 1.08 | |
| Woodland and forest | Other woodland; broadleaved | 1.19285349 | Medium | 4 | Moderate | 2 | Formally identified in local strategy | High strategic significance | 1.15 | 15 | Standard time to target condition applied | 15 | 0.586 | Low | Standard difficulty applied | Low | 1 | 6.43 | |
| Individual trees | Urban tree | 2.324828829 | Medium | 4 | Moderate | 2 | Formally identified in local strategy | High strategic significance | 1.15 | 27 | Standard time to target condition applied | 27 | 0.382 | Low | Standard difficulty applied | Low | 1 | 8.17 | |
| Total habitat area | | 22.27 | | | | | | | | | | | | | | | | Total Units | 53.01 |
| Site Area (Excluding area of individual trees, green walls, intertidal hard structures) | | 19.95 | | | | | | | | | | | | | | | | | |

Appendix X: Post-development Habitat Condition Sheets (Hedgerow Creation)

| Condition sheet: HEDGEROW Habitat Types | | | | |
|--|---|-----------------------------|--|---|
| Habitat Type | | | | |
| Species-rich native hedgerow Native hedgerow | | | | |
| Condition Assessment Criteria | | | | |
| <p>A series of ten attributes, representing key physical characteristics are used for this assessment. This assessment is based on the Hedgerow Survey Handbook¹ and Favourable Conservation Status document². For further clarification please refer to the Hedgerow Survey Handbook.</p> <p>Each attribute is assigned to one of five functional groups (A – E) and the condition of a hedgerow is assessed according to the number of attributes from these functional groups which pass or fail the 'favourable condition' criteria.</p> | | | | |
| Hedgerow favourable condition attributes | | | | |
| Attributes and functional groupings (A, B, C, D & E) | Criteria (the minimum requirements for 'favourable condition' | Description | Criterion passed (yes or No) | |
| Core groups - applicable to all hedgerow types | | | | |
| A1. | Height | >1.5 m average along length | <p>The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.</p> <p>Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).</p> <p>A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).</p> | Y |
| A2. | Width | >1.5 m average along length | <p>The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.</p> <p>Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height.</p> | Y |

| | | | | |
|-----|---|--|---|---|
| | | | Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). | |
| B1. | Gap - hedge base | Gap between ground and base of canopy <0.5 m for >90% of length | This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook). | Y |
| B2. | Gap - hedge canopy continuity | Gaps make up <10% of total length; and No canopy gaps >5 m | This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate). | Y |
| C1. | Undisturbed ground and perennial vegetation | >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: - measured from outer edge of hedgerow, and - is present on one side of the hedge (at least) | This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches. | Y |
| C2. | Nutrient-enriched perennial vegetation | Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground | The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold. | Y |
| D1. | Invasive and neophyte species | >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species | Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information | Y |

| | | | | |
|---|--|--|--|---------------------|
| | | (including those listed on Schedule 9 of WCA ³) and recently introduced species. | on archaeophytes and neophytes see the JNCC website ⁴ , as well as the BSBI website ⁵ where the 'Online Atlas of the British and Irish Flora' ⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website ⁷ . | |
| D2. | Current damage | >90% of the hedgerow or undisturbed ground is free of damage caused by human activities. | This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g., excessive hedgerow cutting). | Y |
| Additional group - applicable to hedgerows with trees only | | | | |
| E1. | Age class | There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient ⁸), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow. | This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species. | n/a |
| E2. | Tree health | At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). 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. | This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens. | n/a |
| The hedgerow condition assessment generates a weighting (score) ranging from 1 – 3, which is used within the metric. The scores for each are set out in the tables below. | | | | |
| Condition categories for hedgerows without trees | | | | |
| Category | Category Requirements | | | Metric Score |
| Good | No more than 2 failures in total; AND No more than 1 failure in any functional group. | | | 3 |

| | | |
|--|--|----------|
| Moderate | No more than 4 failures in total; AND <u>Does not fail both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 and C2= Moderate condition). | 2 |
| Poor | Fails a total of more than 4 attributes; OR <u>Fails both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 and B2 = Poor condition). | 1 |
| Score achieved: | | 3 |
| Notes | | |
| <p>Footnote 1 – DEFRA (2007) Hedgerow Survey Handbook. A standard procedure for local surveys in the UK. [online] Available on: layout (hedgelinek.org.uk)</p> <p>Footnote 2 – STALEY, J.T. ET AL. (2020) Definition of Favourable Conservation Status for Hedgerows. [online] Available on: Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org.uk)</p> <p>Footnote 3 – Wildlife and Countryside Act 1981 (as amended).</p> <p>Footnote 4 – CHEFFINGS, C. M. et al. (2005) The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. [online] Available on: The Vascular Plant Red Data List for Great Britain (Species Status No. 7) JNCC Resource Hub</p> <p>Footnote 5 – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). Definitions: wild, native or alien? [online] Available on: Definitions: wild, native or alien? – Botanical Society of Britain & Ireland (bsbi.org)</p> <p>Footnote 6 – BSBI and Biological Records Centre (BRC) (2022) Online Atlas of the British and Irish Flora. [online] Available on: Acknowledgements Online Atlas of the British and Irish Flora (brc.ac.uk)</p> <p>Footnote 7 – GB NON-NATIVE SPECIES SECRETARIAT (GBNNS) (2022) Available on: Home » NNSS (nonnativespecies.org)</p> <p>Footnote 8 – See gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)</p> | | |

Appendix XI: Site Hedgerow Creation

| Proposed habitats | | Distinctiveness | | Condition | | Strategic significance | | | Temporal multiplier | | | | Difficulty risk multipliers | | | | Hedge units delivered |
|------------------------------|-------------|-----------------|-------|-----------|-------|---------------------------------------|-----------------------------|-----------------------------------|---|---|--|---------------------------------|---------------------------------|-------------------------------|------------------------------|-------------------------------|-----------------------|
| Habitat type | Length (km) | Distinctiveness | Score | Condition | Score | Strategic significance | Strategic significance | Strategic significance multiplier | Standard Time to target condition (years) | Standard or adjusted time to target condition | Final time to target condition (years) | Final time to target multiplier | Standard difficulty of creation | Applied difficulty multiplier | Final difficulty of creation | Difficulty multiplier applied | |
| Native hedgerow | 1.520988 | Low | 2 | Good | 3 | Formally identified in local strategy | High Strategic Significance | 1.15 | 12 | Standard time to target condition applied | 12 | 0.652 | Low | Standard difficulty applied | Low | 1 | 6.84 |
| Species-rich native hedgerow | 0.219438 | Medium | 4 | Good | 3 | Formally identified in local strategy | High Strategic Significance | 1.15 | 12 | Standard time to target condition applied | 12 | 0.652 | Low | Standard difficulty applied | Low | 1 | 1.97 |
| | 1.74 | | | | | | | | | | | | | | | | 8.82 |

Appendix XII: Pre-development & Post-development MoRPh Pro / River Type

| Project Code | National Grid Reference | Module Numbers | Shape | Average Width | Positive Average | Index | Negative Average | Index | Category | River Type | Preliminary Score | Condition | Final Class |
|---------------|-------------------------|----------------|-----------|---------------|------------------|-------|------------------|-------|----------|------------|-------------------|-----------|-------------|
| RifeHE | TQ 10221 03482 | 1 to 5 | 1.588785 | 5.1 | 1.2631578 | | -0.23076923 | | Other | K | 1.0323887 | | Moderate |
| RifeHW | TQ 09931 03533 | 1 to 5 | 1.5615616 | 5.2 | 1.1052631 | | -0.30769232 | | Other | K | 0.7975708 | | Moderate |
| RifeHE - Post | TQ 10220 03481 | 1 to 5 | 1.588785 | 5.1 | 1.2631578 | | -0.23076923 | | Other | K | 1.0323887 | | Moderate |
| RifeHW - Post | TQ 09930 03532 | 1 to 5 | 1.5615616 | 5.2 | 1.1052631 | | -0.30769232 | | Other | K | 0.7975708 | | Moderate |

| Project Code | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | B1 | B2 | B3 | B4 | B5 | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | D1 | D2 | D3 | D4 | D5 | E1 | E2 | E3 | E4 | E5 | E6 | E7 | E8 | E9 | E10 | E11 | E12 | | |
|---------------|----|-----------|----|------------|----|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|---|---|
| RifeHE | 0 | 1.0733334 | 0 | Unconfined | 0 | FALSE | SI | SI | 1 | 0 | 0 | 0 | -3 | 2 | 2 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 2 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| RifeHW | 0 | 1.0733334 | 0 | Unconfined | 0 | FALSE | SI | SI | 1 | 0 | 0 | 0 | -3 | 2 | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | -1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| RifeHE - Post | 0 | 1.0733334 | 0 | Unconfined | 0 | FALSE | SI | SI | 1 | 0 | 0 | 0 | -3 | 2 | 2 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 2 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RifeHW - Post | 0 | 1.0733334 | 0 | Unconfined | 0 | FALSE | SI | SI | 1 | 0 | 0 | 0 | -3 | 2 | 1 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 1 | -1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Appendix XIII: Site Watercourse Baseline

| Existing watercourse type | | Distinctiveness | | Condition | | Strategic significance | | | Watercourse encroachment | | Riparian encroachment | | Required Action to Meet Trading Rules | Ecological baseline |
|---------------------------|-------------|-----------------|-------|-----------|-------|--|-----------------------------|-----------------------------------|--------------------------|------------|---------------------------------------|------------|---|-------------------------|
| Watercourse type | Length (km) | Distinctiveness | Score | Condition | Score | Strategic significance | Strategic significance | Strategic significance multiplier | Extent of encroachment | Multiplier | Extent of encroachment for both banks | Multiplier | | Total watercourse units |
| Other rivers and streams | 0.67 | High | 6 | Moderate | 2 | Formally identified in local strategy | High strategic significance | 1.15 | No Encroachment | 1 | Major/Major | 0.75 | Same habitat required = | 6.93 |
| Culvert | 0.02 | Low | 2 | Poor | 1 | Area/compensation not in local strategy/ no local strategy | Low Strategic Significance | 1 | N/A - Culvert | 0.68 | N/A - Culvert | 1 | Better distinctiveness habitat required | 0.03 |
| | | | | | | | | | | | | | | 6.96 |

| Length retained | Length enhanced | Units retained | Units enhanced | Length Lost | Units Lost |
|-----------------|-----------------|----------------|----------------|-------------|-------------|
| | 0.67 | 0.00 | 6.93 | 0.00 | 0.00 |
| 0.02 | | 0.03 | 0.00 | 0.00 | 0.00 |
| 0.02 | 0.67 | 0.03 | 6.93 | 0.00 | 0.00 |

Appendix XIV: Site Watercourse Enhancement

| Baseline habitats | | | | | | | | | | |
|--------------------------|-------------|-------------------------------|--------------------------------|-----------------------------|--------------------------|--|-----------------------------|---------------------------------------|---------------------------------------|------------------------|
| Baseline habitat | Length (km) | Baseline distinctiveness band | Baseline distinctiveness score | Baseline condition category | Baseline condition score | Baseline strategic significance category | Strategic significance | Baseline strategic significance Score | Required Action to Meet Trading Rules | Baseline habitat units |
| Other rivers and streams | 0.67 | High | 6 | Moderate | 2 | Formally identified in local strategy | High strategic significance | 1.15 | Same habitat required = | 6.9345 |

| Post intervention habitats | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---------------------|-------------|-------------------------|-------|-------------------|-------|---------------------------------------|-----------------------------|-----------------------------------|---|---|--|---------------------------------|------------------------------------|-------------------------------|---------------------------------|-------------------------------|------------------------|-----------------------|---------------------------------------|-----------------------------|------------|
| Proposed habitat | Change in distinctiveness and condition | | Length (km) | Habitat distinctiveness | | Habitat condition | | Strategic significance | | | Temporal multiplier | | | | Difficulty multipliers | | | Watercourse encroachment | | Riparian encroachment | | Watercourse units delivered | |
| | Distinctiveness movement | Condition movement | | Distinctiveness | Score | Condition | Score | Strategic significance | Strategic significance | Strategic significance multiplier | Standard Time to target condition (years) | Standard or adjusted time to target condition | Final time to target condition (years) | Final Time to target multiplier | Standard difficulty of enhancement | Applied difficulty multiplier | Final difficulty of enhancement | Difficulty multiplier applied | Extent of encroachment | Multiplier | Extent of encroachment for both banks | | Multiplier |
| Other rivers and streams | High - High | Moderate - Moderate | 0.67 | High | 6 | Moderate | 2 | Formally identified in local strategy | High strategic significance | 1.15 | 1 | Standard time to target condition applied | 1 | 0.965 | Medium | Standard difficulty applied | Medium | 0.67 | No Encroachment | 1 | Major/Minor | 0.84 | 7.77 |

Appendix XII: Legal and Technical Limitations

- This report has been prepared by Urban Edge Environmental Consulting Ltd (UEEC Ltd) with all reasonable skill, care and diligence within the terms of the contract made with the Client to undertake this work, and taking into account the information made available by the Client. No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us.
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- Unless otherwise stated in this report, the assessments made assume that the sites and facilities that have been considered in this report will continue to be used for their current planned purpose without significant change.
- All work carried out in preparing this report has utilised and is based upon UEEC Ltd's current professional knowledge and understanding of current relevant UK standards and codes, technology and legislation. Changes in this legislation and guidance may occur at any time in the future and may cause any conclusions to become inappropriate or incorrect. UEEC Ltd does not accept responsibility for advising the Client or other interested parties of the facts or implications of any such changes;
- Where this report presents or relies upon the findings of ecological field surveys (including habitat, botanical or protected/notable species surveys), its conclusions should not be relied upon for longer than a maximum period of two years from the date of the original field surveys. Ecological change (e.g. colonisation of a site by a protected species) can occur rapidly and this limitation is not intended to imply that a likely absence of, for instance, a protected species will persist for any period of time;
- This report has been prepared using factual information contained in maps and documents prepared by others. No responsibility can be accepted by UEEC Ltd for the accuracy of such information;
- Every effort has been made to accurately represent the location of mapped features, however, the precise locations of features should not be relied upon;
- Populations of animals and plants are often transient in nature and a single survey visit can only provide a general indication of species present on site. Time of year when the survey was carried out, weather conditions and other variables will influence the results of an ecological survey (e.g. it is possible that some flowering plant species which flower at other times of the year were not observed). Every effort has been made to accurately note indicators of presence of protected, rare and notable species within and adjacent to the site but the possibility nonetheless exists for other species to be present which were not recorded or otherwise indicated by the survey;
- Any works undertaken as a consequence of the recommendations provided within this report should be subjected to the necessary health & safety checks and full risk assessments.

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