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STRATA STERLING BARNSLEY WEST

BARNSLEY WEST

APPENDIX 1 – UPDATE BIODIVERSITY OFFSETTING ASSESSMENT

MARCH 2024

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MARCH 2024

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CONTENTS

EXECUTIVE SUMMARY 1
1 INTRODUCTION 3
1.1 Scope of Report 3
1.2 Site Description and Context 3
2 BIODIVERSITY NET GAIN PRINCIPLES 5
2.2 The Environment Act 5
2.3 The Ten Principles of Biodiversity Net Gain 5
3 METHODS 8
3.1 Overview 8
3.2 Habitat Assessment and Mapped Output 8
3.3 Area and Length 9
3.4 Distinctiveness 9
3.5 Condition Assessment 10
3.6 Strategic Significance 10
3.7 Rivers and Streams 11
3.8 Quality Assurance & Environmental Management 11
3.9 Limitations 11
4 RESULTS 13
4.1 Habitats Baseline and Condition Assessment 13
4.2 Post Development Habitats 17
4.3 Development Phasing 21
4.4 Quantitative Assessment Results – Combined Employment and Residential Area 22
4.5 Quantitative Assessment Results – Employment Area 26
5 Conclusion 32
5.1 Loss of watercourses 32
5.2 Legislative Compliance 32
5.3 Monitoring 32

APPENDICES

Appendix 1 Assessment of Ten Principles of BNG
Appendix 2 Condition Assessment Matrix
Appendix 3 River Condition Assessment
Appendix 4 Metric 4.0 Calculation Worksheets

DRAWINGS	TITLE	SCALE
LD10361.003	Biodiversity Net Gain – Baseline Habitats	1:7,500@A3
LD10361.024	Biodiversity Net Gain – Habitat Creation	1:7,500@A3
LD10361.025	Biodiversity Net Gain – Habitat Retention	1:7,500@A3
LD10361.032	MoRPh Survey Results	1:7,500@A3

EXECUTIVE SUMMARY

This report provides the updated results of a Biodiversity Net Gain assessment via the completion of a Biodiversity Metric (DEFRA Metric 4.0[1]) for a mixed-use development scheme on land west of Barnsley, South Yorkshire, following post-application consultation with the LPA and consultees. This report addresses the comments received by the LPA ecologist with areas of the report amended highlighted in yellow for ease of review.

The assessment seeks to quantify the anticipated gains/losses in biodiversity though development and to consider Biodiversity Net Gain requirements as set out in the National Planning Policy Framework (NPPF 2023).

The calculation is informed by the Landscape Masterplan provided by Gillespies (2023), the Indicative Site plan provided by Bond Bryan (2023) and habitat data from the results of a Preliminary Ecological Appraisal Report and River Condition Assessment undertaken by Wardell Armstrong (2023).

Assuming there are no changes to the landscape design proposals and site layout, the mixed-use employment and residential scheme (the whole scheme) will deliver a +26.86% net gain in habitats, +31.17% net gain in hedgerows and -28.61% net loss in watercourses. This is equivalent to +117.60, +14.54 and -31.17 units for habitats, hedgerows and watercourses respectively.

The employment scheme alone will deliver a +19.73% net gain in habitats, +47.40% net gain in hedgerows and -71.46% net loss in watercourses. This is equivalent to +21.39, +9.77 and -3.56 units for habitats, hedgerows and watercourses respectively.

Small changes in these calculations have been derived from the figures pre-application due to amendments in mapping, including retention of woodland parcel W4 and revision of developments in W2 and W3 (no loss of ancient woodland will occur). Minor errors within the table descriptions and habitat coding have also been amended.

Given that the Biodiversity Net Gain policy requirements have been exceeded by on-site measures in habitats and hedgerows, there are no external offsetting or financial contributions to external schemes required. A loss in watercourse units has been identified, however this is an artefact of the Metric Calculation Tool. Any ditches lost will be fully compensated by 'Bioswales', which are coded in the area-based calculations in the Metric

[1] http://publications.naturalengland.org.uk/publication/6049804846366720

rather than in the linear waterbodies calculation. It is therefore considered that there will be no net loss of linear waterbody habitat albeit this will change in form from ecologically poor dry and seasonally wet ditches, to 'Bioswales' designed to provide as much ecological enhancement as possible. 66m of ecologically poor ditch habitat will be lost, to be replaced by 61m of bioswale.

A detailed Landscape and Ecological Management Plan (LEMP) will be required in order to confirm the habitat creation, management and monitoring requirements, over the 30-year management period.

1 INTRODUCTION

1.1 Scope of Report

1.1.1 Wardell Armstrong LLP was commissioned by Strata Sterling Barnsley West Ltd to update the Biodiversity Offsetting Assessment in relation to a proposed mixed used residential and employment development project following post-application consultation with the LPA and consultees. This report has been amended to address the comments from the LPA Ecologist (date) and clarify information accordingly. Where text has been amended it has been highlighted in yellow for ease of review.

1.1.2 The centre of the site has an approximate Ordnance Survey Grid Reference of SE 31778 07075. The purpose of the assessment is to quantify the biodiversity losses and gains arising from the proposed development and the requirement under the NPPF 2021 for development proposals to achieve a net gain in biodiversity.

1.1.3 This report is informed by a quantitative assessment using DEFRA's Biodiversity Offsetting Metric v.4.0 developed by Natural England and informed by biodiversity net gain guidance developed by CIRIA, CIEEM and IEMA. The baseline habitat information taken from the Preliminary Ecological Appraisal Report (PEAR) (Wardell Armstrong 2023) and a separate River Condition Assessment (Appendix 4). The future condition of the site was informed by referring to plans provided by Gillespies and Bond Bryran as follows:

- Drawing P11754-00-001-GIL-0100 Landscape Masterplan
- Drawing P11754-00-001-GL-0101 Phase 1 Landscape Design Sheet 1/2
- Drawing P11754-00-001-GL-0102 Phase 1 Landscape Design Sheet 2/2
- Drawing P11754-00-001-GL-0103 Employment Strategic Landscape Masterplan
- BWM-BBA-ZZ-XX-DR-A-1004 Proposed Indicative Site Plan

1.1.4 This assessment focusses on a quantitative assessment derived from the Biodiversity Offsetting Metric. The report does not consider wider qualitative assessments which are required as part of the overall BNG assessment process; such assessments are considered as part of the associated Environmental Statement.

1.2 Site Description and Context

1.2.1 The area of detailed ecological study referred to as the 'Site' is a large formerly open cast mine and surrounding land covering approximately 114 hectares. The site

generally comprises open pastoral and arable fields, with associated boundary hedgerows, trees and ditches, and areas of semi-natural and ancient woodland. The pasture fields are heavily grazed by horses/ponies and sheep.

1.2.2 The site lies 2km west of Barnsley town centre on farmland between the communities of Gawber, Higham, Pogmoor, Redbrook and Barugh Green, immediately north-east of Junction 37 of the M1 motorway.

1.2.3 There are multiple statutory and non-statutory site within 2km of the development, most notably the Redbook Pastures LWS which lies 30m to the west. Craven Wood has been characterized as ancient (WA, 2023), and further parcels of ancient woodland are present nearby, the nearest of which are Langford Wood which lies 0.26km west and Hugset Wood which lies 0.74 km west.

2 BIODIVERSITY NET GAIN PRINCIPLES

2.1.1 Biodiversity net gain (BNG) is the overarching result of an assessment involving a quantitative assessment typically using a metric spreadsheet calculator and a qualitative assessment involving an overall assessment of the value of the habitat.

2.1.2 The overall requirement of the NPPF with regards to BNG is leaving a development with a greater ecological value than its previous condition. This has been interpreted in recent caselaw as being >1%. The assessment must show that the development design has followed the mitigation hierarchy, a clear order set to retain habitats and avoid biodiversity losses in situ. Only as a last resort, should damage or lost habitat be compensated for using biodiversity offsets.

2.2 The Environment Act

2.2.1 The Environment Act establishes a comprehensive legal framework for environmental improvement within the UK, forming one of the key measures to deliver the vision set out under the 25 Year Environment Plan. The preceding Environment bill has recently received Royal assent and hence its status is now an act of Parliament.

2.2.2 The Environment Act is intended to establish the structure for long-term environmental governance and accountability and includes key measures to drive improvements for nature. In particular, it introduces a mandatory requirement for biodiversity net gain in the planning system, to ensure that new developments enhance biodiversity and create new green spaces for local communities to enjoy. This will require developments to deliver a 10% improvement in biodiversity value, albeit this will not be a legal requirement until the legislation amends the current Town and Country Planning act, currently anticipated to occur during January 2024.

2.3 The Ten Principles of Biodiversity Net Gain

2.3.1 In achieving BNG any development is required to follow the ten good practice principles (CIEEM, 2021), each of which is summarised in Table 1, below. The assessment of whether the development can meet each of the ten principles, is provided in Appendix 1. This report principally considers Principle 5.

Table 1: *The Ten Principles*

Principle	Summary Description

Principle 1. Apply the Mitigation Hierarchy	This principle involves avoiding harm to biodiversity wherever possible, by carefully considering site location and layout relative to the presence of valuable ecological features. If harm cannot be avoided this should be reduced (mitigated) by design considerations and/or timing the works to avoid sensitive periods etc. Finally, if harm cannot be mitigated, it may be appropriate to compensate for losses that cannot be avoided. If compensating for losses within the site is not possible or does not generate the most benefits for nature conservation, then consideration should be given to 'offset' biodiversity losses by ensuring gains elsewhere. Offsetting is therefore synonymous with compensation in this context.
Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere	Avoid impacts on irreplaceable biodiversity - these impacts cannot be offset to achieve overall biodiversity gain. The NPPF (2023) definition of irreplaceable habitat is as follows: Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, considering their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen.
Principle 3. Be inclusive and equitable	It is essential that stakeholders are engaged early in the process. Wherever possible stakeholders should be involved in designing, implementing, monitoring and evaluating the approach to net gain.
Principle 4. Address risks	It is necessary to mitigate difficulty, uncertainty and other risks to achieving BNG. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.
Principle 5. Make a measurable Net Gain contribution	Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.
Principle 6. Achieve the best outcomes for biodiversity	Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when: • Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses

	• Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation • Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels • Enhancing existing or creating new habitat • Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity
Principle 7. Be additional	Nature conservation outcomes should be sought that demonstrably exceed existing obligations i.e. do not seek to deliver something that would occur anyway.
Principle 8. Create a Net Gain legacy	Ensure Net Gain generates long-term benefits by: • Planning for adaptive management and securing dedicated funding for long-term management • Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity • Designing Net Gain for biodiversity to be resilient to external factors, especially climate change • Mitigating risks from other land uses • Avoiding displacing harmful activities from one location to another • Supporting local-level management of Net Gain activities
Principle 9. Optimise sustainability	Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.
Principle 10. Be transparent	Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

3 METHODS

3.1 Overview

3.1.1 The DEFRA Biodiversity Metric 4.0 (Natural England, 2023) is a spreadsheet tool which enables losses and potential gains in biodiversity to be calculated. The calculation defines biodiversity units to illustrate the change in value arising from a development. Biodiversity units are calculated using the size of a parcel of habitat and its quality. The metric uses habitat area as its core measurement, except for linear habitats where habitat length is used.

3.1.2 To assess the quality of a habitat the metric scores habitats of different types, such as woodland or grassland, according to their relative biodiversity value. Habitats that are scarce or declining typically score highly relative to habitats that are more common and widespread. The metric also takes account of the condition of a habitat. The metric accounts for the location of the habitat relative to other similar habitats to measure its connectedness in the landscape. Being 'better' and 'more joined-up' are important facets of habitats that can contribute to halting and reversing biodiversity declines. The metric also accounts for whether or not the habitat is sited in an area identified locally, typically in a relevant policy or plan, as being of significance for nature'.

3.2 Habitat Assessment and Mapped Output

3.2.1 The system of habitat classification used is based upon the UK Habitat Classification or UKHab (UKHab, 2023), rather than Phase I (JNCC 2016). In this case habitats were mapped in the field according to UKHab, with minimum mapping unit (MMU) resolution set at 25m^2. The map legend displayed on Drawing LD10361.003 Biodiversity Net Gain Baseline Habitat presents the relevant UKHab communities recorded on site.

3.2.2 To calculate the total 'tree' area for parkland/scattered trees, the root protection area (RPA) is required in the baseline information. Where this is not available a default RPA of 15m diameter is used.

3.2.3 Three drawings are presented as follows:

- LD10361.003 Biodiversity Net Gain – Baseline Habitat
- LD10361.024 Biodiversity Net Gain – Habitat Creation
- LD10361.025 Biodiversity Net Gain – Habitat Retention

3.2.4 Each drawing shows current or post development polygons and linear features labelled with an alpha numeric code e.g. MG1 (Modified Grassland 1), SRH2 (Species Rich Hedge 2) which is replicated in the 'assessor comments' column in the Metric 4 spreadsheet. This enables rapid cross referencing between the drawings and the spreadsheet.

3.3 Area and Length

3.3.1 The area of identified habitats is calculated in hectares (ha), ignoring linear features such as hedgerows or ditches (the area is measured to the centre line of such features). The length of linear features is measured separately in kilometres (km). The area of habitats beneath 'street trees' is also mapped contiguously with surrounding habitats with the canopy area presented separately in the Metric. Where hedgerows lie adjacent to a ditch, the ditch is incorporated into the linear hedgerow habitat and disregarded in the watercourse habitats calculation, in accordance with the User Guide and Technical Supplement Guidelines.

3.4 Distinctiveness

3.4.1 Existing information on habitat types within the Application Site is taken from the UKHab Habitat and Vegetation Habitat Survey Results of the Preliminary Ecological Appraisal. The area and habitats data are then imputed into the Metric 4.0 calculation tool and habitats are pre-assigned to one of four habitat bands, based on their distinctiveness:

- V. High 8
- High: 6
- Medium: 4
- Low: 2
- None 0

3.4.2 Distinctiveness is defined as a collective measure of biodiversity based on parameters including species richness, diversity and rarity.

3.4.3 Removal of habitats of V. high distinctiveness should be avoided at all costs and if considered necessary then bespoke compensation is likely to be required. Removal of habitats of high distinctiveness should also be avoided and if considered necessary then the same habitat is required. Regarding medium distinctiveness habitats these

are required to be compensated for with the same broad habitat or a higher distinctness habitat.

3.5 Condition Assessment

3.5.1 Each habitat type identified is then given a condition weighting. The methodology used to assign a condition weighting to each habitat type is based on the DEFRA Metric Technical Supplement, User Guide[2] and professional judgement. Condition weightings provide a multiplier based on the following outputs:

- Good condition: All criteria met, with minor variation
- Moderate Condition: All but one/two criterion met
- Poor Condition: Five or more criteria failed, unless specified alternatively

3.5.2 A summary of the condition assessment for each habitat is presented in Section 4 Results (below).

3.6 Strategic Significance

3.6.1 Strategic significance gives additional unit value to habitats that are located within preferred locations for biodiversity and environmental objectives. The habitats will usually have been summarised in a local strategy planning document which articulates where biodiversity is of high priority and the places where it is less so. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such Nature Recovery Areas, local biodiversity plans, National Character Area objectives and green infrastructure strategies.

3.6.2 A score based on whether the location of the Site has been identified locally as significant for nature conservation of either Low, Medium or High Significance, as follows:

High Strategic Significance (High potential & within area formally identified in local policy)

Medium Strategic Significance (Good potential but not in area defined in local policy)

Low Strategic Significance (Low potential and not in area defined in local policy)

[2] http://publications.naturalengland.org.uk/publication/6049804846366720

3.7 Rivers and Streams

3.7.1 The rivers section of Metric 4.0 is assessed separately to the habitats and hedgerows, habitats including rivers and streams is assessed using the modular river physical habitat field survey (MoRPh) methodology. Ditches and canals are assessed using condition assessments in DEFRA Metric Technical Supplement and User Guide.

3.7.2 The River Condition Assessment (RCA) method combines the MoRPh field surveys with a desk study (River Type) to generate a final condition score based on the evaluation of 32 Condition Indicators (CIs) which represent positive and negative attributes of the fluvial river reach under investigation.

3.7.3 Two waterbodies were assessed during the MoRPh field surveys and the Desk study. The locations and extent of the watercourses surveyed, and their baseline condition scores are displayed on Drawing LD10361.032 MoRPh River Survey Results. The MoRPh field survey was undertaken on 19th July 2023 and the desk study (river type) was undertaken on 17th August 2023.

3.7.4 The assessor, Tosha Allen, is appropriately qualified and has accreditation from Modular River Survey 'River Condition Assessment' training dated 16th September 2022.

3.8 Quality Assurance & Environmental Management

3.8.1 The calculation and the report have been overseen, checked and verified by a member of CIEEM, whom is bound by its code of professional conduct. All surveys and assessments have been undertaken with reference to the recommendations given in British Standard BS 8683:2021 (2021) *Process for Designing and Implementing Biodiversity Net Gain* and as stated within specialist guidance, as appropriate and referenced separately.

3.8.2 ArcGIS software was used to obtain all baseline and predicted final development and offsetting areas. Any alterations to the final area results must be completed using the same software.

3.9 Limitations

3.9.1 Drawings P11754-00-001-GIL-0100 Landscape Masterplan and BWM-BBA-ZZ-XX-DR-A-1004 Proposed Indicative Site Plan provided by Gillespies and Bond Bryran respectively have been used to inform details of proposed habitats following

completion of the development. Any subsequent revisions will require an update to the assessment presented in this report.

3.9.2 Any habitat that remains unaltered in the Landscape Masterplan has been assumed to be retained by the assessor.

3.9.3 The BIA (quantitative) calculations should not be considered in isolation or be taken to be the only biodiversity requirements relevant to the proposed development. It will be necessary to consider other qualitative assessment of ecological/biodiversity value including protected species assessments. In this case, the qualitative assessment elements will be included within the environmental statement (WA, 2023).

3.9.4 The condition assessments of individual habitats are seasonal and although a habitat survey can be completed throughout the year, the optimal period for botanical surveys when most species are showing is between April and September.

4 RESULTS

4.1 Habitats Baseline and Condition Assessment

4.1.1 Table 2 (below) provides a summary of baseline habitat conditions. Habitat descriptions are split where necessary to allow heterogeneous stands/polygons to be described. Alpha numeric codes are provided in parentheses to allow cross referencing with Drawing LD10374.001 Habitat Baseline.

4.1.2 The table also provides a summary and rationale for the condition assessment with justification for any deviation from the guideline recommendations.

Table 2: *Habitat Description and Condition Assessment Summary*

Baseline Habitat	Habitat Description	Strategic Significance	Condition Assessment
Area Features			
Woodland – Lowland mixed deciduous woodland (W1 – W4)	Three parcels of woodland are present to the east of the site. The Craven Wood has been continually wooded since at least 1821 and is therefore considered likely to be ancient (Ancient Woodland Assessment, ES Appendix 7.8). Parcel W4 was not assessed to be ancient, but remains a priority woodland habitat.	Formally identified, s.41 and LBAP 'Mixed deciduous woodland'.	Good – 32 points Moderate – 30 out of 39 points. W1 – 32 points. Loses points due to open space, ash dieback, no veteran trees present and nutrient enrichment evident. W2-W3 – 30 points. Loses points due to browsing pressure, open space, ash dieback, no veteran trees and nutrient enrichment evident. W4 – 23 points. Loses points due to age class of parcel, lack of diversity, browsing pressure, open space, ash dieback, no veteran trees and nutrient enrichment evident.
Grassland – Other neutral grassland (G1, G2, G7)	Located to the north and east of the site, isolated grassland fields which are infrequently grazed are present. This habitat type also includes a small marshy grassland area, previously recorded as a pond (G7) (WGY, 2021)	Formally identified, LBAP 'Amenity grassland'.	Moderate – 4 out of 6 criteria met. Fails B – sward closely grazed, and E – cover of species indicative of sub-optimal condition over 5%.
Grassland – Modified grassland (G3-G6, G8-G31)	The predominate habitat type across the site, with the majority of fields being species poor and heavily grazed/ cut for silage. Residential gardens are also present within the Hermit House Farm.	Formally identified, LBAP 'Amenity grassland'.	Good – G4, G5, G6 - 6 out of 7 criteria met. Fails B – sward height short. Moderate – G3, G8, G9

Baseline Habitat	Habitat Description	Strategic Significance	Condition Assessment
			- 4 out of 7 criteria met. Fails B – sward heavily grazed, D – physical damage over 5% and E - bare ground over 10%. Poor – G10 – G31 - 4 out of 7 criteria met. Fails A – fewer than 6 species per m^2, C – scrub over 20% and E - bare ground over 10%.
Cropland – Cereal crops (A1- A5)	Cereal fields are present to the south and southeast of the site.	None.	N/A
Heathland and shrub – Mixed scrub (SC5 – SC8)	Mixed scrub is scattered throughout the site, with species dominated by hawthorn *Crataegus monogyna*, bramble *Rubus* fruticosus with occasional rose sp, snowberry *Symphoricarpos albu* and *gorse Ulex europea*.	Formally identified, LBAP 'Scrub'.	Moderate – 3 or 4 out of 5 criteria. Fails C – species indicative of suboptimal condition >5% and/or D – no well-developed edge.
Heathland and shrub – Bramble scrub (SC1 – SC3)	Dense bramble scrub is present adjacent to the woodland north of Hermit Lane.	Formally identified, LBAP 'Scrub'.	N/A
Heathland and shrub – Gorse scrub (SC4)	Dense scrub in which gorse becomes dominant.	Formally identified, LBAP 'Scrub'.	Moderate –4 out of 5 criteria. Fails C – species indicative of suboptimal condition >5%.
Lakes – non-priority Pond (P1-P3)	Three waterbodies are present on Site; within Craven Wood, to the southwest of Hermit Lane and to the southeast of the Site (i.e marshy grassland area). The ponds do not meet any of the relevant criteria for 'priority ponds'[3] and so are assessed as non-priority.	Ecologically desirable.	Moderate – 7 or 8 out of 9 criteria met. Fails B – non-natural habitat present within 10m, and/or C – more than 10% duckweed cover, and/ or H – plants cover level than 50%.
Sparsely vegetated land – Tall forb (S1- S3)	Tall ruderal species with areas of bare ground present. Species include broad-leaved dock *Rumex Obtusifolius* and nettle *Urtica dioica*. Heavily grazed.	Ecologically desirable.	Good – 3 out of 3 criteria met. Moderate – 2 out of 3 criteria met. Fails A – Vegetation structure not varied.

[3] https://data.jncc.gov.uk/data/dec49c52-a86c-4483-90f2-f43957e560bb/UKBAP-BAPHabitats-42-Ponds.pdf

Baseline Habitat	Habitat Description	Strategic Significance	Condition Assessment
Urban – Developed land; sealed surface (U1-U6)	Hermit Lane and Hermit House Farm comprise concrete/asphalt hardstanding. Multiple buildings are present within the centre of the site, forming Hermit House Farm.	None.	N/A
Urban – Bare ground (BG1, BG2)	Small parcels of bare ground are present to the west and centre of the site, whereby high levels of horse trampling have removed the vegetation.	None.	Poor – 1 out of 3 criteria met. Fails A – Vegetation structure not varied and B – no plant species present.
Linear Features			
Native hedgerow (H1, H2, H2a, H5-H9, H14-H19, H20, H21, H23, H30-H34)	Hawthorn dominant hedgerows border many of the fields throughout the site. The condition of hedgerows varies across the site, with both defunct and stockproof hedges.	Formally identified, s.41 and LBAP 'Hedgerow'.	Good – H5, H12, H14, H15, H20, H23 - 2 failures. Fails C1 due to disturbed ground and D2 due to damage. Moderate – H1, H2, H2a, H7, H16, H17, H19, H21, H34 - 4 failures. Fails A2 as width >1.5m, B1 as ground gap >0.5m, B2 as gaps >10%, C2 as nutrient enrichment indicators >20%. Poor – H6, H8, H9, H30 - H32 - 5 failures. Fails A2 as width >1.5m, B1 as ground gap >0.5m, B2 as gaps >10%, C1 as disturbed ground present and C2 as nutrient enrichment indicators >20%.
Native hedgerow with trees (H10, H13, H22, H35)	Four hawthorn dominant hedgerows contain mature trees.	Formally identified, s.41 and LBAP 'Hedgerow'.	Moderate – H10, H13, H22 - 3 failures. Fails C1 as disturbed ground present, C2 as nutrient enrichment indicators >20% and D2 as >90% is damages by human activity. Poor – H35 - 5 failures. Fails B1 as ground gap >0.5m, B2 as

Baseline Habitat	Habitat Description	Strategic Significance	Condition Assessment
			gaps >10%, C1 as disturbed ground present, C2 as nutrient enrichment indicators >20% and D2 as >90% is damages by human activity.
Native hedgerow – Associated with a bank or ditch (H11, H29)	Hawthorn dominant hedgerows to the north and south contained, or were directly adjacent to, ditches.	Formally identified, s.41 and LBAP 'Hedgerow'.	Poor – 5 failures. Fails B1 as ground gap >0.5m, B2 as gaps >10%, C1 as disturbed ground present, C2 as nutrient enrichment indicators >20% and D2 as >90% is damages by human activity.
Species rich native hedgerow (H3, H24-H28)	A number of hedgerows throughout the site become more species rich with native species including gorse *Ulex europaeus* and elm *Ulmus spp*.	Formally identified, s.41 and LBAP 'Hedgerow'.	Good – H3. - 2 failures. Fails B1 as ground gap >0.5m and C2 as nutrient enrichment indicators >20%. Moderate – H24-H28. - 4 failures. Fails A2 as width >1.5m, B1 as ground gap >0.5m, B2 as gaps >10%, C1 as disturbed ground present.
Species rich native hedgerow with trees (H4)	Hedgerow 4 was species rich with the addition of mature trees.	Formally identified, s.41 and LBAP 'Hedgerow'.	Moderate - 3 failures. Fails B1 as ground gap >0.5m, B2 and hedge gaps >10%, C2 as nutrient enrichment indicators >20% and D2 as >90% is damages by human activity.
Ecologically valuable line of trees (H20a)	A line of trees is present to the east of the site, which contains mature specimens.	Ecologically desirable.	Moderate – 3 out of 5 criteria met. Fails B as canopy gaps >10% and D and disturbed ground present.
Watercourse Features			
Other rivers and streams (D1, D6)	A tributary of the River Dearne flows through the Craven Wood.	Formally identified, LBAP 'Running water'.	Fairly Good/Moderate – See Appendix 4 for full river assessment details.
Ditches (D2-D5)	Ditches that support surface water runoff following heavy rain, present within the north and south of the site.	Ecologically desirable.	Poor – 4 out of 8 criteria met. Fails A – pollution evident, B – range of plant absent, D – marginal

Baseline Habitat	Habitat Description	Strategic Significance	Condition Assessment
			vegetation absent and F – sufficient water levels not maintained.
Point Features			
Individual tree – Rural tree	19 large individual trees are scattered throughout the site, typically mature ash and pedunculate oak.	Ecologically desirable.	Good – 6 out of 6 criteria met.

N.b. H33 (as recorded in 2021 by WYG) was recorded within H34 during the 2022/2023 assessment.

4.2 Post Development Habitats

4.2.1 Table 3 (below) provides a summary of the proposed habitats following completion of development. This includes all habitats to be created as well as those which will be Enhanced and Retained. Alpha numeric codes are provided in parentheses to allow cross referencing with Drawing LD10361 024 Biodiversity Net Gain Habitat Creation and LD10361 025 Biodiversity Net Gain Habitat Retention.

Table 3 *Post Development Habitat Summary*

Proposed Habitat	Habitat Description	Strategic Significance	Condition Assessment
Area Features			
Woodland – Lowland mixed deciduous woodland (W1 – W4)	The existing woodland will be retained with a 15m buffer to any works or plant access. Buffer scrub plantings will be placed to protect roots, and a bark mulch route will be added to formalise existing pathways and prevent desire lines.	Formally identified, s.41 and LBAP 'Mixed deciduous woodland'.	Good – 32 points. W1 – Loses points due to open space, ash dieback, no veteran trees present and nutrient enrichment evident. Moderate – 30 out of 39 points. W2-W3. Loses points due to browsing pressure, open space, ash dieback, no veteran trees and nutrient enrichment evident.
Woodland – Other woodland; mixed (W5 – W6)	Boundary woodland will be created around the site, as well as a screening woodland between the employment area and residential area. There will be a mix of deciduous and evergreen species planted, all of which will be native.	Ecologically desirable.	Moderate – 26 points. Loses points due to limited age class of woodland, no recognisable NVC understorey, and age of trees.

Proposed Habitat	Habitat Description	Strategic Significance	Condition Assessment
Grassland – Other neutral grassland (G33 – G36)	A range of other neutral grassland types are proposed throughout the site, which will vary in species composition and richness. These include traditional wildflower meadow and species rich grassland.	Formally identified, LBAP 'Amenity grassland'.	Moderate – 4 out of 6 criteria met. Fails B – sward height unlikely to be varied and F – fewer than 10 species per m^2.
Grassland – Traditional Orchards (G32)	Community orchards are proposed throughout the site, within open public spaces. Proposed Trees Type 5 will be planted, which include small fruit trees, upon species rich grassland.	Formally identified, s.41 and LBAP 'Traditional orchards'.	Moderate – 5 out of 8 criteria met. Fails A – no ancient or veteran trees, B – no deadwood on trees and E – human damage likely.
Grassland – Modified grassland (G37)	Short mown amenity grass is proposed within the open public areas, particularly to the west of the site.	Formally identified, LBAP 'Amenity grassland'.	Poor – 5 out of 7 criteria met. Fails A – fewer than 6-8 vascular plant species per m^2 and B – sward height short.
Heathland and shrub – Gorse scrub (SC9)	Rocky gorse shrub will be created to the southeast of the site.	Formally identified, LBAP 'Scrub'.	Moderate – 3 out of 5 criteria met. Fails B – seedling and saplings unlikely to be present, E – clearing and ride unlikely to be present.
Heathland and shrub – Mixed scrub (SC10)	Mixed scrub is proposed throughout the site, as transitional habitats between grassland and woodland. The ancient woodland will also be buffered by a mixed scrub. A number of native species will be selected.	Formally identified, LBAP 'Scrub'.	Moderate – 3 out of 5 criteria met. Fails B – seedling and saplings unlikely to be present, E – clearing and ride unlikely to be present.
Wetland – Reedbed (RE1)	Small parcels of reedbed will be created within the wet meadow, adjacent to the standing open water.	Formally identified, s.41 and LBAP 'Reedbed.	Moderate – 5 out of 6 criteria met. Fails I – reedbed unlikely to have a diverse structure.
Lakes - non-priority Pond (P4)	A large pond will be created to the south of the development, which will be partially vegetated with inundation species. The pond within Craven Wood will be retained.	Ecologically desirable.	Moderate – 7 out of 9 criteria met. Created: C – pond will be artificially connected, E – water levels will be a result of drainage. Retained: Fails B – non-natural habitat present within 10m, and C – more than 10% duckweed cover.
Urban – Sustainable Urban	Proposed attenuation basins are scattered throughout the site, which will hold some form of	Ecologically desirable.	Good – 5 out of 5 criteria met.

Proposed Habitat	Habitat Description	Strategic Significance	Condition Assessment
Drainage Systems (SUD1)	permanent water. Within the SUDs, dense scrub, wetland meadow and marginal planting are proposed.		
Urban – Introduced shrub (U9)	Small parcels of ornamental shrub planting are to be created within open public areas throughout the development. Species are expected to be largely non-native.	Ecologically desirable.	N/A
Urban – Bioswale (SW1)	Bioswales will be created throughout the development, to fill with standing water during/after periods of heavy rain.	Ecologically desirable.	Moderate – 4 out of 5 criteria met. Fails A – vegetation structure unlikely to be varied.
Urban – Allotments (U8)	A number of community allotments are proposed to the west of the site.	Formally identified, LBAP 'Built-up areas and gardens'	Good – 3 out of 3 criteria met.
Urban – Vegetated gardens (U7)	The residential properties will have both front and back vegetated gardens.	Formally identified, LBAP 'Built-up areas and gardens'	N/A
Urban – Developed land; sealed surface (U10-U22)	The buildings, formal and informal play areas, active travel routes and recreational routes, as well as associated infrastructure, will form hard standing. A mix of asphalt, concrete and tarmac will be used.	None.	N/A
Urban – Artificial unvegetated; unsealed surface (U23)	A public access route running throughout the site will be formed using bark mulch.	None.	N/A
Linear Features			
Species rich native hedgerow (H5, H7, H12, H14-H17, H19).	Native hedgerows will be retained wherever possible, with RPA outlined in the BEMP (WA, 2023). Hedges will be trimmed every 3 years to achieve an overall height of 3m. Any defunct hedgerows will be	Formally identified, s.41 and LBAP 'Hedgerow'.	Good – 1 failure, C1 – disturbed ground present.

Proposed Habitat	Habitat Description	Strategic Significance	Condition Assessment
	'gapped up' using a mix of native species.		
Species rich native hedgerow with trees (H13)	The northeastern boundary hedgerow will be retained and enhanced. RPA outlined in BEMP (WA, 2023).	Formally identified, s.41 and LBAP 'Hedgerow'.	Good – 1 failure, C1 – disturbed ground present.
Species rich native hedgerow – Associated with a bank or ditch (H11)	The northeastern boundary hedgerow will be retained and enhanced. RPA outlined in BEMP (WA, 2023).	Formally identified, s.41 and LBAP 'Hedgerow'.	Good – 1 failure, C1 – disturbed ground present.
Species-rich native hedgerow (H36 – H51)	16 newly created species-rich hedgerows will be created throughout the development using a mix of native species, albeit creation will be phased as per the development. Hedges will be maintained to over 1.5m in height and width. Translocation of the existing species-poor hedgerows has been considered, however this was not deemed the best option in terms of biodiversity due to heavy poaching and grazing limiting the value of existing hedgerows.	Formally identified, s.41 and LBAP 'Hedgerow'.	Good – 1 failure, C1 – disturbed ground present.
Line of trees (TL1 – TL9)	Line of trees will be planted to form buffers around the site, acting as amenity features.	Ecologically desirable.	Moderate – 3 out 5 criteria met. Fails C as deadwood unlikely and D – ground on one or both sides will be disturbed.
Watercourse features			
Other rivers and streams (D1, D6)	Watercourses present within the ancient woodland will be retained.	Formally identified, LBAP 'Running water'.	Fairly Good/Moderate – See Appendix 4 for full details.
Ditch (D2)	The ditch along the northeastern boundary will be retained.	Ecologically desirable.	Poor – 4 out of 8 criteria met. Fails A – pollution evident, B – range of plant absent, D – marginal vegetation absent

Proposed Habitat	Habitat Description	Strategic Significance	Condition Assessment
			and F – sufficient water levels not maintained.
Point Features			
Individual trees – urban trees	Planted trees are to be scattered throughout the development. These will be a mix of native species, so that mature specimens vary in height; Proposed Trees Type 1 will be large, Type 2 and 3 will be medium. Whilst groups of trees may have an overlapping canopy cover, all trees will be planted at a maximum 25% density over grassland, meaning they meet the definition of 'Individual trees' as opposed to 'woodland'[4].	Ecologically desirable.	Moderate – 4 out of 6 criteria met. Fails C as trees unlikely to be fully mature and E and deadwood unlikely to be present.

4.3 Development Phasing

4.3.1 A delay in habitat creation has been incorporated into the metric calculation in order to account for the phasing of development and the time taken to landscape the Site. It is assumed that the development will come forward in 2024, with that being the start of habitat creation. Drawing BWM BBA ZZ XX DR A 1005 S2 P03 supplied by Bond Bryan (2023) has been used. The phases are timed as follows:

- Residential Area:
  - R1: 2024 – 2030;
  - R2: 2025 – 2030;
  - R3: 2030 – 2032;
  - R4: 2030 – 2034;
  - R5: 2026 – 2030;
  - R6: 2027 – 2036;
  - R7: 2025 – 2029.
- Employment Area: 2024 – 2027;
- Commercial Area: 2026 – 2027;

[4] UKHab (2023). UK Habitat Classification Version 2.0. Page number 48. Woodland and Forest. Natural England Joint Publication (2023) The Biodiversity Metric 4.0 User Guide. Section 8.3.5.

- Strategic Infrastructure:
  - SI1: 2024 – 2025;
  - SI2: 2025 – 2026;
  - SI3: 2025 – 2026;
  - SI4: 2026 – 2027; and
  - SI5: 2025 – 2026.

4.3.2 Full details of the phasing plan are detailed in the ES Chapter (WA, 2023).

4.4 Quantitative Assessment Results – Combined Employment and Residential Area

4.4.1 The site shows losses of high, medium, low and very low distinctiveness categories, the habitat losses are focussed in the medium, low and very low distinctiveness categories. Plates 1 and 2 provide a summary of the Metric 4.0 assessment.

4.4.2 Plate 1: Extract from Defra Metric 4.0 'Headline Results' summary.

Barnsley West Combined

Headline Results

Scroll down for final results ⚠

Return to results menu

On-site baseline	*Habitat units*	437.85	
	Hedgerow units	46.67	
	Watercourse units	16.47	
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	555.44	
	Hedgerow units	61.21	
	Watercourse units	11.76	
On-site net change (units & percentage)	*Habitat units*	117.60	26.86%
	Hedgerow units	14.54	31.17%
	Watercourse units	-4.71	-28.61%
Off-site baseline	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	*Habitat units*	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	117.60	
	Hedgerow units	14.54	
	Watercourse units	-4.71	
Spatial risk multiplier (SRM) deductions	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	117.60
	Hedgerow units	14.54
	Watercourse units	-4.71
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	26.86%
	Hedgerow units	31.17%
	Watercourse units	-28.61%
Trading rules satisfied?	No - Check Trading Summaries ▲	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	437.85	481.63	0.00
Hedgerow units	10.00%	46.67	51.33	0.00
Watercourse units	10.00%	16.47	18.12	6.36

Plate 2: Extract from Defra Metric 4.0 'Detailed Results' summary

Barnsley West Combined Detailed Results	Return to results menu

Summary Figures

Net project biodiversity units (Including all on-site & off-site habitat retention / creation)	*Habitat units*	117.60
	Hedgerow units	14.54
	Watercourse units	-4.71
Total project biodiversity % change (Including all on-site & off-site habitat creation + retained habitats)	*Habitat units*	26.86%
	Hedgerow units	31.17%
	Watercourse units	-28.61%

Combined habitat retention and enhancement	Habitats	Hedgerows	Watercourses
Total on-site and off-site baseline area / length	116.25	7.41	1.64
Total on-site and off-site baseline units	437.85	46.67	16.47
Total on-site and off-site baseline area / length retained	4.22	0.82	0.87
Total on-site and off-site baseline units retained	48.77	5.63	11.76
Area / length proposed for enhancement	0.00	1.35	0.00
Baseline units proposed for enhancement	0.00	6.70	0.00
Total on-site and off-site baseline area / length lost	112.03	5.25	0.77
Total on-site and off-site baseline units lost	389.07	34.33	4.71

Area habitats

On-site change by broad habitat type

Habitat group	Baseline		Post-development on-site		On-site change	
	On-site existing area	On-site existing value	On-site proposed area	On-site proposed value	On-site area change	On-site unit change
Cropland	11.02	22.04	0.00	0.00	-11.02	-22.04
Grassland	96.46	348.21	21.47	128.52	-74.99	-219.69
Heathland and shrub	0.22	1.96	3.78	25.93	3.56	23.97
Lakes	0.22	1.93	0.07	0.52	-0.15	-1.41
Sparsely vegetated land	2.87	12.94	0.00	0.00	-2.87	-12.94
Urban	1.81	1.43	81.09	51.56	79.28	50.13
Wetland	0.00	0.00	0.05	0.35	0.05	0.35
Woodland and forest	2.20	30.16	8.33	47.43	6.14	17.27
Intertidal sediment	0.00	0.00	0.00	0.00	0.00	0.00
Coastal saltmarsh	0.00	0.00	0.00	0.00	0.00	0.00
Rocky shore	0.00	0.00	0.00	0.00	0.00	0.00
Coastal lagoons	0.00	0.00	0.00	0.00	0.00	0.00
Intertidal hard structures	0.00	0.00	0.00	0.00	0.00	0.00
Watercourse footprint	0.00	0.00	0.00	0.00	0.00	0.00
Individual trees	1.45	19.17	96.64	301.12	95.19	281.95

Hedgerows and lines of trees

On-site change by hedgerow type

Hedgerow type	Baseline		Post-development on-		On-site change	
	On-site existing length	On-site existing value	On-site proposed length	On-site proposed value	On-site length change	On-site unit change
Species-rich native hedgerow with trees - associated with bank or	0.00	0.00	0.00	0.00	0.00	0.00
Species-rich native hedgerow with trees	0.27	3.72	0.11	2.06	-0.16	-1.66
Species-rich native hedgerow - associated with bank or ditch	0.00	0.00	0.16	2.84	0.16	2.84
Native hedgerow with trees - associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Species-rich native hedgerow	1.25	12.23	5.64	50.05	4.39	37.83
Native hedgerow - associated with bank or ditch	0.37	1.72	0.00	0.00	-0.37	-1.72
Native hedgerow with trees	0.50	3.92	0.00	0.00	-0.50	-3.92
Ecologically valuable line of trees	0.08	0.66	0.00	0.00	-0.08	-0.66
Ecologically valuable line of trees - associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native hedgerow	4.95	24.42	0.82	5.63	-4.13	-18.79
Line of trees	0.00	0.00	0.33	0.63	0.33	0.63
Line of trees - associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Non-native and ornamental hedgerow	0.00	0.00	0.00	0.00	0.00	0.00

Watercourses

Plot Area

On-site change by watercourse type

Watercourse type	Baseline		Post-development on		On-site Change	
	On-site existing length	On-site existing value	On-site proposed length	On-site proposed value	On-site length change	On-site unit change
Priority habitat	0.0	0.0	0.0	0.0	0.0	0.0
Other rivers and streams	0.8	12.7	0.7	10.9	-0.1	-1.8
Ditches	0.9	3.8	0.2	0.8	-0.7	-2.9
Canals	0.0	0.0	0.0	0.0	0.0	0.0
Culvert	0.0	0.0	0.0	0.0	0.0	0.0

4.4.3 Plate 2 shows that many losses are of low distinctiveness, with the largest losses in modified grassland. As this habitat is not a priority habitat and is of low distinctiveness the losses will not impact the ability to claim biodiversity net gain.

Arable Land

4.4.4 The existing arable land will be entirely lost to facilitate the proposed development. This will reduce the area of arable land by 11.02 ha, resulting in a loss of -22.04 units.

Woodland

4.4.5 The existing woodland will be retained and protected, and new mixed woodland is proposed throughout the site. Overall, this will result in an area gain of 6.14ha, generating +17.27 habitat units.

Grassland

4.4.6 As the predominate habitat type on Site, existing grassland will be entirely lost to facilitate the development. Parcels of other neutral grassland and modified grassland are proposed as compensation, as well as multiple community (ie Traditional) orchards. Nonetheless, a net loss of 74.99 ha is expected. This will result in a net loss of -219.69 units.

Heathland and Shrub

4.4.7 Small parcels of scrub will be removed to facilitate the development, however much of the scrub will be retained and parcels of mixed/ gorse scrub are proposed. The created habitats will result in a net area gain of 3.56 ha, generating +23.97 units.

Sparsely Vegetated Land

4.4.8 The existing area of sparsely vegetated land will be mostly removed during the development. All the areas categorised as this habitat as being of low distinctiveness (Tall forb and Bare ground). The overall area of sparsely vegetated land will decrease by 2.87 ha, resulting in a net loss of -12.94 units.

Lake habitats

4.4.9 The pond within Craven Wood will be retained, however two other ponds will be lost. The lost ponds are of poor condition and overall low value to biodiversity. A newly created pond is proposed as compensation, however there will remain a net loss of 0.15ha and -1.41 units. Note this does not include SUDs features which will also provide habitat of similar function.

Wetland

4.4.10 There are no wetland habitats within the baseline, and a small parcel of reedbed is proposed under the development. This will introduce an area of wetland on site to the size of 0.05ha, equivalent to +0.35 units. The SUDs features will be in addition to this area.

Urban

4.4.11 Urban area experiences a large increase in total areas this is the purpose of the site's development. This includes hard standing, buildings and infrastructure as well as introduced shrub, allotments and vegetated gardens. Overall, the area of urban habitats increases by 79.28 ha, and generates +50.13 habitat units.

Individual trees

4.4.12 A large number of individual trees are proposed throughout the site to aid in the compensation of other lost habitats. Overall, the RPA of individual trees will cover 95.19 ha, and the planting of individual trees will generate +281.95 habitat units.

Hedgerows and Lines of Trees

4.4.13 There will be a loss of hedgerows across the site. Namely, species rich native hedgerow with trees (-0.16 km and -1.66 units), native hedgerow associated with a bank or ditch (-0.37km and -1.72 units), native hedgerow with trees (-0.50 km and -3.92 units) and native hedgerow (-4.13 km and -18.79 units). There will also be a loss of ecologically valuable line of trees of -0.08 km or -0.66 units. A total of 4.55 km of species-rich native hedgerow will be planted, and a number of retained hedgerows enhanced. Overall, a net gain of 14.54 hedgerow units are proposed.

Summary

4.4.14 The existing area-based habitats on Site have a biodiversity value of 437.85 habitat units. 506.67 units will be following development, resulting in an overall value of 555.44 units and hence a net change of **+117.60 Habitat Units** or **+26.86%**.

4.4.15 The existing hedgerows on Site have a biodiversity value of 46.67 units. For hedgerows, 37.39 units will be created and 18.19 enhanced following development, resulting in an overall value of 61.21 units and hence a net change of **+14.54 Hedgerow Units** or **+31.17**%.

4.4.16 The existing watercourse features on the Site have a value of 16.47 units. No watercourse units will be generated through creation or enhancement, meaning the retained features have an overall value of 11.76 units and hence a net change of **-4.71 Watercourse Units** or **-28.61%.**

4.5 Quantitative Assessment Results – Employment Area

4.5.1 The site shows losses of high, medium, low and very low distinctiveness categories. Plates 1 and 2 provide a summary of the Metric 4.0 assessment.

4.5.2 Plate 1: Extract from Defra Metric 4.0 'Headline Results' summary.

Barnsley West Commerical

Headline Results

Return to results menu

Scroll down for final results ⚠

On-site baseline	*Habitat units*	108.44	
	Hedgerow units	20.61	
	Watercourse units	4.98	
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	129.83	
	Hedgerow units	30.38	
	Watercourse units	1.42	
On-site net change (units & percentage)	*Habitat units*	21.39	19.73%
	Hedgerow units	9.77	47.40%
	Watercourse units	-3.56	-71.46%
Off-site baseline	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	*Habitat units*	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	21.39	
	Hedgerow units	9.77	
	Watercourse units	-3.56	
Spatial risk multiplier (SRM) deductions	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	

FINAL RESULTS

Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	21.39
	Hedgerow units	9.77
	Watercourse units	-3.56
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	19.73%
	Hedgerow units	47.40%
	Watercourse units	-71.46%
Trading rules satisfied?	No - Check Trading Summaries ▲	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	108.44	119.28	0.00
Hedgerow units	10.00%	20.61	22.67	0.00
Watercourse units	10.00%	4.98	5.48	4.06

Plate 2: Extract from Defra Metric 4.0 'Detailed Results' summary.

Barnsley West Commerical

Detailed Results

Return to results menu

Summary Figures

Net project biodiversity units (Including all on-site & off-site habitat retention / creation)	*Habitat units*	21.39
	Hedgerow units	9.77
	Watercourse units	-3.56
Total project biodiversity % change (Including all on-site & off-site habitat creation + retained habitats)	*Habitat units*	19.73%
	Hedgerow units	47.40%
	Watercourse units	-71.46%

Combined habitat retention and enhancement

	Habitats	Hedgerows	Watercourses
Total on-site and off-site baseline area / length	40.58	3.20	0.59
Total on-site and off-site baseline units	108.44	20.61	4.98
Total on-site and off-site baseline area / length retained	0.63	0.00	0.08
Total on-site and off-site baseline units retained	8.49	0.00	1.42
Area / length proposed for enhancement	0.00	0.20	0.00
Baseline units proposed for enhancement	0.00	0.93	0.00
Total on-site and off-site baseline area / length lost	39.94	3.00	0.51
Total on-site and off-site baseline units lost	99.95	19.68	3.56

Area habitats

On-site change by broad habitat type

	Baseline		Post-development on-site		On-site change	
Habitat group	On-site existing area	On-site existing value	On-site proposed area	On-site proposed value	On-site area change	On-site unit change
Cropland	5.13	10.26	0.00	0.00	-5.13	-10.26
Grassland	31.39	72.29	4.99	34.51	-26.40	-37.78
Heathland and shrub	0.10	0.93	1.09	7.56	0.99	6.63
Lakes	0.21	1.88	0.00	0.00	-0.21	-1.88
Sparsely vegetated land	2.56	13.51	0.00	0.00	-2.56	-13.51
Urban	0.54	1.08	28.78	6.51	28.24	5.43
Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Woodland and forest	0.18	2.43	5.25	16.71	5.07	14.27
Intertidal sediment	0.00	0.00	0.00	0.00	0.00	0.00
Coastal saltmarsh	0.00	0.00	0.00	0.00	0.00	0.00
Rocky shore	0.00	0.00	0.00	0.00	0.00	0.00
Coastal lagoons	0.00	0.00	0.00	0.00	0.00	0.00
Intertidal hard structures	0.00	0.00	0.00	0.00	0.00	0.00
Watercourse footprint	0.00	0.00	0.00	0.00	0.00	0.00
Individual trees	0.46	6.05	19.81	64.54	19.35	58.49

Hedgerows and lines of trees

On-site change by hedgerow type						
	Baseline		Post-development on-site		On-site change	
Hedgerow type	On-site existing length	On-site existing value	On-site proposed length	On-site proposed value	On-site length change	On-site unit change
Species-rich native hedgerow with trees - associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Species-rich native hedgerow with trees	0.00	0.00	0.00	0.00	0.00	0.00
Species-rich native hedgerow - associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native hedgerow with trees - associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Species-rich native hedgerow	1.09	10.01	3.65	30.38	2.56	20.37
Native hedgerow - associated with bank or ditch	0.22	1.00	0.00	0.00	-0.22	-1.00
Native hedgerow with trees	0.30	2.09	0.00	0.00	-0.30	-2.09
Ecologically valuable line of trees	0.08	0.66	0.00	0.00	-0.08	-0.66
Ecologically valuable line of trees - associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native hedgerow	1.53	6.84	0.00	0.00	-1.53	-6.84
Line of trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of trees - associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Non-native and ornamental hedgerow	0.00	0.00	0.00	0.00	0.00	0.00

Watercourses

On-site change by watercourse type						
	Baseline		Post-development on site		On-site Change	
Watercourse type	On-site existing length	On-site existing value	On-site proposed length	On-site proposed value	On-site length change	On-site unit change
Priority habitat	0.0	0.0	0.0	0.0	0.0	0.0
Other rivers and streams	0.2	3.2	0.1	1.4	-0.1	-1.8
Ditches	0.4	1.8	0.0	0.0	-0.4	-1.8
Canals	0.0	0.0	0.0	0.0	0.0	0.0
Culvert	0.0	0.0	0.0	0.0	0.0	0.0

4.5.3 Plate 2 shows that many losses are of low distinctiveness, with the largest losses in modified grassland. As this habitat is not a priority habitat and is of low distinctiveness the losses will not impact the ability to claim biodiversity net gain.

Arable Land

4.5.4 The existing arable land will be entirely lost to facilitate the proposed development. This will result in a net loss of 5.13 ha and -10.26 units.

Woodland

4.5.5 A large parcel of mixed woodland is proposed under the development, and no woodland will be lost. This will generate a net gain of 5.07 ha and +14.27 habitat units.

Grassland Areas

4.5.6 Of the grassland lost to development, the majority is modified grassland, which is of a low distinctiveness. Another small area of other neutral grassland, of medium distinctiveness, will also be lost. Several parcels of grassland, both other neutral and modified, are proposed as compensation. This will result in an overall loss of 26.40 ha and a net loss of -37.78 biodiversity units.

Heathland and Shrub

4.5.7 The area of heathland and shrub will be increased as new areas of mixed scrub will be created, increasing the area by 0.99 ha and generating net +6.63 biodiversity units.

Sparsely Vegetated Land

4.5.8 The baseline area of sparsely vegetated land will be entirely removed to facilitate the development. This habitat is therefore decreased in area by 2.56 ha hectares and -13.51 biodiversity units.

Lake habitats

4.5.9 Two habitat ponds, assessed as high distinctiveness, will be lost to the development, and no ponds proposed as compensation. This will result in a net loss 0.21 ha and -1.88 biodiversity units.

Urban Habitats

4.5.10 Urban area experiences a large increase in total area this is the purpose of the sites development, with both hardstanding and habitats beneficial to biodiversity proposed. Overall, the area of urban habitats will increase by 28.24 ha and +5.43 biodiversity units.

Individual Trees

4.5.11 A large number of individual trees are proposed as compensation. Overall, a RPA of 19.35 ha are proposed, which would generate 58.49 habitat units.

Hedgerows and Lines of Trees

4.5.12 There will be a loss of hedgerows across the site. Namely, native hedgerow associated with a bank or ditch (-0.22 km and -1.00 units), native hedgerow with trees (-0.30 km and -2.09 units) and native hedgerow (-1.53 km and -6.84 units). There will also be a loss of ecologically valuable line of trees of -0.08 km or -0.66 units. A total of 3.68 km of species-rich native hedgerow will be planted, and a number of retained hedgerows enhanced. Overall, the length of hedgerow habitats increases by 3.45km, resulting in a net gain of 9.77 hedgerow units.

Summary

4.5.13 The existing area-based habitats on Site have a biodiversity value of 108.44 units. 121.34 units will be created with 8.49 units retained following development, resulting in an overall value of 129.83 units and hence a net change of **+21.39 Habitat Units** or **19.73%**.

4.5.14 The existing hedgerows on Site have a biodiversity value of 20.61 units. For Hedgerow habitats, 27.90 units will be created and 2.48 units generated through enhancement, resulting in an overall value of 30.38 units and hence a net change of **+9.77 Hedgerow Units** or **47.40**%.

4.5.15 The existing watercourse features on the Site have a value of 4.98 units. No watercourse habitats will be created under the proposed development however, a number of watercourses will be retained. The post-development value of watercourses is 1.42 units, hence a net change of **-3.56 Watercourse Units** or **-71.46%.**

5 CONCLUSION

5.1 Loss of watercourses

5.1.1 The calculation above shows a net loss of linear waterbodies of -28.61% (66m of ditch loss) across the combined residential and employment area. However, almost all of the baseline ditches on site do not hold water other than immediately following heavy rain, and are unvegetated (grazed and poached), hence are of limited ecological value.

5.1.2 In order to compensate for this loss 0.61ha (61m linear length) bioswales are proposed. Whilst the swales will perform an attenuation function, they will be planted with marginal plants and herbaceous species which can tolerate periodic inundation and saturated soils. This will be a benefit to biodiversity and will result in a gain of biodiversity units, however because bioswales form part of the area-based habitats coding in the Metric, they do not contribute to the compensation for loss of ditches directly.

5.1.3 We consider this to be an artefact of the Metric spreadsheet tool, hence the negative outcome for linear water features should not be considered to reflect a non-policy compliant loss of such habitat.

5.2 Legislative Compliance

5.2.1 As the assessment has concluded that a net gain in biodiversity can be achieved in both habitat and hedgerows, the development is compliant with the BNG requirements of the NPPF (2023). Given that the net gain is >10% the development is also compliant with the relevant Barnsley Council Local policies.

5.3 Monitoring

A detailed Landscape and Biodiversity Management Plan will be required in order to confirm the habitat creation, management and monitoring requirements, over the 30 year management period. This will build on the Framework Biodiversity and Ecological Management Plan and will need to account for detailed landscape designs and any modifications therein.

REFERENCES

BSBI (2021) BS 8683:2021 Process for designing and implementing Biodiversity Net Gain.

CIEEM (2021). Biodiversity Net Gain Report and Audit Templates Chartered Institute of Ecology and Environmental Management, Winchester, UK.

UKHab Ltd (2023) UK Habitat Classification Version 2.0 (at https:/www.ukhab.org)

WYG (2021) Factual Ecological Appraisal. Job no. 784-A107940-3

APPENDICES

APPENDIX 1 – ASSESSMENT OF TEN PRINCIPLES OF BNG

Principle	**Guidance**[5]	**Assessment**
1: Apply the Mitigation Hierarchy	Measures to avoid and minimise biodiversity loss and to rehabilitate/restore biodiversity affected by the project are: 1) defined and documented, 2) implemented and monitored; and 3) managed for the duration of the project's impacts. For example, maintain records of the consideration of alternatives as evidence of avoidance measures implemented.	**Pass**: The project ecology reports (PEA and BNG) provide evidence that the hierarchy has been adopted and alternatives are discussed in the Planning Statement.
2: Avoid losing biodiversity that cannot be offset by gains elsewhere	Project documents describe any impacts to irreplaceable and vulnerable biodiversity resources, e.g., permanent loss or damage to semi-natural ancient woodland, ancient climax vegetation communities, veteran trees, endemic and internationally rare species that cannot be replaced within reasonable timeframes. Projects with impacts on irreplaceable habitats cannot achieve BNG. These projects should demonstrate where biodiversity compensation has been provided but cannot claim project-wide achievement of BNG. These projects should transparently and comprehensively refer to the impacts on irreplaceable habitats in communications and reports.	**Pass:** The project has retained habits of high biodiversity value including ancient woodland, and no irreplaceable habitats have been lost.
3: Be inclusive and equitable	Evidence of input from and consultation with nature conservation bodies, the local community, the local planning authority and other relevant stakeholders. (NB: For smaller scale projects, this may be part of the planning consultation process). Terms of Reference for any Stakeholder Partnerships are agreed and published, with the roles and responsibilities of members clearly defined.	**Pass:** The biodiversity offsetting assessment will be reviewed by the local county ecologist, checking the rule of biodiversity offsetting have been adhered to.
4: Address Risks	Evidence that BNG has been achieved within the project.	**Pass**: The metric 4.0 has an inbuilt difficulty multiplier which addresses the

[5] Taken from CIEEM (2021). Biodiversity Net Gain Report and Audit Templates Chartered Institute of Ecology and Environmental Management, Winchester, UK.

	Sources of risk and uncertainty in design and implementation of mitigation are documented. Identify risks that may present themselves during the 30-year management period and how these should be dealt with.	risks of habitat creation. The habitat creation will be supported by a 30-year management plan.
5: Make a measurable Net gain	Suitable metric is used for all habitat impacts quantified relative to the 'pre-project' condition of each habitat. Gains anticipated from habitat creation, enhancement and positive management are quantified relative to the predicted condition in the absence of BNG activities.	**Pass**: The proposed development will result in a +26.86% net gain in habitats and +31.17% net gain in hedgerows across the entire site.
6: Achieve the best outcomes for Biodiversity	Evidence is provided that BNG commitments contribute (now or in the future) to regional and national conservation goals, e.g., Local Nature Recovery Strategies. Provide evidence that the BNG design has considered where it is possible to contribute to supporting priority species populations. Provide evidence to show where additionality has been proven within the built environment and what gains are achieved.	**Pass**: Habitats beneficial to biodiversity, largely those within the Barnsley BAP, as well as species rich native hedgerows have been proposed wherever possible.
7: Be additional	Evidence is provided that the conservation gains were caused by project activities and would not have occurred in other circumstances.	**Pass**: The development has resulted in a net gain in both habitats and hedgerows, and overall, the development increased the value and diversity of habitats on site. Priority habitats include reedbed are proposed where not present before.
8: Create a Net Gain legacy	Evidence is provided that those responsible for implementing project biodiversity management have the requisite management and technical capacity for their specified roles. Key Performance Indicators are set for biodiversity features affected by the project and specific, measurable and time-bounded targets for indicating conservation success are clearly stated. Evidence is provided that any reasonably foreseeable future developments that might	**Pass**: The biodiversity offsetting assessment and subsequent management plan will ensure that the proposed habitats are maintained and allowed to development into the highest standard of habitats.

	affect long-term commitments to biodiversity, including developments by third parties, have been considered. Evidence that legal and financial mechanisms are in place to guarantee the financial and institutional viability of all biodiversity management for a minimum 30 years or at least the duration of the project's impacts. Evidence is provided that management is adapted, where necessary, throughout implementation to deliver the agreed conservation outcomes and monitoring is in place to identify risks to achieving specified outcomes. Evidence that the design has considered where it is possible to create features for species, in particular, priority species.	
9: Optimise sustainability	Evidence provided that the project prioritises BNG targets, but then seeks opportunities for gains for the wider environment, the community and the economy.	**Pass**: The development will contribute to the local community and economy, increasing the commercial opportunities and residential housing available in the area.
10: Be transparent	The commitment to BNG is stated by the project developer in a publicly available document. Results of project audits are publicly available where claims of BNG are made at relevant project stages, including project closure and any deviations from original design specifications are clearly stated. Evidence that the best available scientific knowledge and methods have been used in BNG design and implementation and knowledge is transferred back to the scientific community.	**Pass**: Choices of habitat and condition have been outlined and justified within the condition assessments. Any limitations of the assessment have been clearly stated in the report.

APPENDIX 2 – CONDITION ASSESSMENT MATRIX

BASELINE HABITATS

Condition Sheet: DITCH Habitat Type												
Habitat Type												
Watercourses - Ditches												
Habitat Description												
See the Biodiversity Metric 4.0 User Guide.												
Site name and location		**On-site or off-site**										
Limitations (if applicable)		**Survey reference (if relating to a wider survey)**										
		Habitat parcel reference										
		D2	**D3**	**D4**	**D5**							
		Grid reference										
Condition Assessment Criteria												
		Criterion passed (Yes or No)										**Notes (such as justificati**
A	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	N	N	N	N							
B	A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.	N	N	N	N							
C	There is less than 10% cover of filamentous algae and or duckweed *Lemna* spp. (these are signs of eutrophication).	Y	Y	Y	Y							
D	A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.	N	N	N	N							
E	Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	Y	Y	Y	Y							
F	Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	N	N	N	N							
G	Less than 10% of the ditch is heavily shaded.	Y	Y	Y	Y							
H	There is an absence of non-native plant and animal species[1].	Y	Y	Y	Y							
	Number of criteria passed											
Condition Assessment Result (out of 8 criteria)	**Condition Assessment Score**	**Score Achieved x/l**										
Passes 8 criteria	Good (3)											
Passes 6 or 7 criteria	Moderate (2)											
Passes 5 or fewer criteria	Poor (1)	Poor										
Suggested enhancement interventions to improve condition score												

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)

Limitations (if applicable)		**Habitat parcel reference**									
		G3	G4	G5	G6	G8	G9	G10	G11	G12	G13
		Grid reference									
Condition Assessment Criteria											
		Criterion passed (Yes or No)									
A	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.** 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.	Y	Y	Y	Y	Y	Y	N	N	N	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	N	N	N	N	N	Y	Y	Y	N
C	Some scattered scrub (including bramble *Rubus fruticosus* 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	Y	Y	Y	Y	Y	N	N	N	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	Y	Y	Y	N	N	Y	Y	Y	N
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)[2].	Y	Y	Y	Y	N	N	N	N	N	N
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
G	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Essential criterion achieved (Yes or No)										
	Number of criteria passed										
Condition Assessment Result (out of 7 criteria)	**Condition Assessment Score**	**Score Achieved x/l**									
Passes 6 or 7 criteria including passing essential criterion A	Good (3)		Good	Good	Good						
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)	Mod				Mod	Mod				
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)							Poor	Poor	Poor	Poor

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)

		wider survey)								
Limitations (if applicable)		**Habitat parcel reference**								
		G14	G15	G16	G17	G18	G19	G20	G21	G22	G23
		Grid reference									
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	N	N	N	N	N	N	N	N	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.	Y	Y	Y	N	Y	Y	Y	N	Y	N
C	Some scattered scrub (including bramble *Rubus fruticosus* 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.	N	N	N	Y	N	N	N	Y	N	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	Y	Y	N	Y	Y	Y	N	Y	N
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)[2].	N	N	N	N	N	N	N	N	N	N
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
G	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Essential criterion achieved (Yes or No)										
	Number of criteria passed										

Condition Assessment Result (out of 7 criteria)	**Condition Assessment Score**	**Score Achieved x/l**									
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)	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)										
		wider survey)								
Limitations (if applicable)		**Habitat parcel reference**								
		G24	G25	G26	G27	G28	G29	G30	G31	
		Grid reference								
Condition Assessment Criteria										
		Criterion passed (Yes or No)								
A	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.** 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.	N	N	N	N	N	N	N	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.	Y	Y	Y	N	Y	Y	Y	N	
C	Some scattered scrub (including bramble *Rubus fruticosus* 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.	N	N	N	Y	N	N	N	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	Y	Y	N	Y	Y	Y	N	
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)[2].	N	N	N	N	N	N	N	N	
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	Y	Y	Y	Y	Y	Y	Y	Y	
G	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]).	Y	Y	Y	Y	Y	Y	Y	Y	
	Essential criterion achieved (Yes or No)									
	Number of criteria passed									
Condition Assessment Result (out of 7 criteria)	**Condition Assessment Score**	**Score Achieved x/l**								
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)	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness				
Site name and location		**Survey reference (if relating to a wider survey)**		
Limitations (if applicable)		**Habitat parcel reference**		
		G1	G2	G7
Condition Assessment Criteria		**Grid reference**		
		Criterion passed (Yes or		
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. **Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**	Y	Y	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	N	N
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[1].	Y	Y	Y
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	Y	Y	Y
E	Combined cover of species indicative of sub-optimal condition[2] 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[3] (as listed on Schedule 9 of WCA[4]) are present, this criterion is automatically failed.	N	N	N
Additional Criterion - must be assessed for all non-acid grassland types				
F	There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). **Note - this criterion is essential for achieving Good condition for non-acid grassland types only.**	Y	Y	Y
	Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)			
	Number of criteria passed			
Condition Assessment Resul	**Condition Assessment Score**	**Score Achieved x/l**		
Acid Grassland types (Result out of 5 criteria)				
Passes 5 criteria	Good (3)			
Passes 3 or 4 criteria	Moderate (2)			
Passes 2 or fewer criteria	Poor (1)			
Non-acid grassland types (Result out of 6 criteria)				
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)	Mod	Mod	Mod

Condition sheet: HEDGEROW Habitat Types													
Hedgerow favourable condition attributes													
Attributes and functional groupings (A, B, C, D and E)		**Criteria - the minimum requirements for 'favourable condition'**	**Criteria description**	**Habitat parcel reference**										
				H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	
				Grid reference										
								H14						
Core groups - applicable to all hedgerow types				**Criterion passed (Yes or No)**										**Notes (such as justificati**
A1.	Height	>1.5 m average along length	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. 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). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. 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).	N	N	Y	Y	Y	N	Y	Y	Y	Y	
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	N	N	N	Y	N	Y	Y	N	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).	N	N	Y	N	Y	N	N	N	N	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 hedgerow (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.	Y	Y	Y	Y	N	N	N	N	N	N	

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 *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	N	N	N	N	Y	N	N	N	N	N	
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of 'WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information 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].	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
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	Y	Y	N	N	N	Y	Y	N	N	
Additional group - applicable to hedgerows with trees only														
E1.	Tree 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.	Mod	Mod	Good	Mod	Good	Poor	Mod	Mod	Poor	Y	
E3.	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.										Y (mod)	
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 sheet: HEDGEROW Habitat Types													
Attributes and functional groupings (A, B, C, D and E)		**Criteria - the minimum requirements for 'favourable condition'**	**Criteria description**	**Habitat parcel reference**									
				H11	H12	H13	H15	H16	H17	H18	H19	H20	H21
				Grid reference									
Core groups - applicable to all hedgerow types				**Criterion passed (Yes or No)**									
A1.	Height	>1.5 m average along length	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. 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). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Y	Y	Y	Y	N	N	Y	Y	Y	Y
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. 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).	Y	Y	Y	Y	N	N	Y	Y	Y	Y
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	N	Y	N	Y	Y	Y	Y	N	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).	N	Y	Y	Y	Y	Y	Y	Y	Y	N
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 hedgerow (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	N	N	N	N	N	N	N	N	N	N

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 *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information 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].	Y	Y	Y	Y	N	N	Y	Y	Y	Y	
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).	N	Y	N	Y	N	N	N	N	Y	N	
Additional group - applicable to hedgerows with trees only														
E1.	Tree 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.	Poor	Good	Mod	Good	Good	Mod	Mod	Mod	Good	Mod	
E3.	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.											
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 sheet: HEDGEROW Habitat Types															
Attributes and functional groupings (A, B, C, D and E)		**Criteria - the minimum requirements for 'favourable condition'**	**Criteria description**	H22	H23	H24	H25	H26	H27	H28	H29	H30	H31
				Grid reference									
Core groups - applicable to all hedgerow types				**Criterion passed (Yes or No)**									
A1.	Height	>1.5 m average along length	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. 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). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Y	Y	Y	Y	Y	Y	Y	Y	N	N
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. 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).	Y	Y	N	Y	Y	Y	Y	Y	N	N
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	Y	N	N	N	Y	N	N	N	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).	N	Y	N	N	N	N	N	N	N	N
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 hedgerow (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	N	N	N	Y	Y	Y	Y	N	Y	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 *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	Y	Y	Y	N	N	N	N	N	N	N	
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information 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].	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
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	N	Y	N	N	N	N	N	Y	Y	
Additional group - applicable to hedgerows with trees only														
E1.	Tree 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.	Y	Good	Mod	Mod	Mod	Mod	Mod	Poor	Poor	Poor	
E3.	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 (Mod)										
The hedgerow condition assessment generates a weighting (score) ranging from 1 - 2, which is used within the metric. The scores for each are set out in th														

Hedgerow favourable condition attributes								
Attributes and functional groupings (A, B, C, D and E)		**Criteria - the minimum requirements for 'favourable condition'**	**Criteria description**	**Habitat parcel reference**				
				H32	H34	H35		
				Grid reference				
Core groups - applicable to all hedgerow types				**Criterion passed (Yes or N**				
A1.	Height	>1.5 m average along length	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. 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). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	N	Y	Y		
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. 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).	N	Y	Y		
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	N	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).	N	N	N		
C1.	Undisturbed ground and perennial vegetatio	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and	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	Y	Y	N		

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 *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	N	N	N			
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information 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].	Y	Y	Y			
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	Y	N			
Additional group - applicable to hedgerows with trees only									
E1.	Tree 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.	Poor	Mod	Y			
E3.	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.			Y (Poor)			

The hedgerow condition assessment generates a weighting (score) ranging from 1 - 3, which is used within the metric. The

Condition Sheet: INDIVIDUAL TREES Habitat Type

Urban Perimeter / Linear Blocks and Groups (description applied to the urban environment only):
Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includes those al canals, and also former field boundary trees incorporated into developments. Canopies must overlap continuously. Groups of urban woodland may be assessed within this category.

Site name and location		**On-site or off-site**
Limitations (if applicable)		**Survey reference (if relating to a wider survey)**
Grid reference		**Habitat parcel reference**

	Condition Assessment Criteria	**Criterion passed (Yes or No)**
A	The tree is a native species (or at least 70% within the block are native species).	Y
B	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
C	The tree is mature (or more than 50% within the block are mature).	Y
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Y
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Y
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
	Number of criteria passed	

Condition Assessment Result (out of 6 criteria)	**Condition Assessment Score**	**Score Achieved ×/□**
Passes 5 or 6 criteria	Good (3)	Good
Passes 3 or 4 criteria	Moderate (2)	

Condition Sheet: LINE OF TREES Habitat Type

Habitat Type(s)

Line of trees
Line of trees – associated with bank or ditch
Ecologically valuable line of trees
Ecologically valuable line of trees – associated with bank or ditch

Habitat Description

See the Biodiversity Metric 4.0 User Guide Section 9.

This assessment is based on the Hedgerow Survey Handbook[1]. 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.

Site name and location		**On-site or off-site**	
		Survey reference (if relating to a wider survey)	
Limitations (if applicable)		**Habitat parcel reference**	
		H20 a	
		Grid reference	

	Condition Assessment Criteria	**Criterion passed (Yes or No)**
A	At least 70% of trees are native species.	Y
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.	N
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 (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice[2].	N
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	

Condition Assessment Result (out of 5 criteria)	**Condition Assessment S**	**Score Achieved x/l**
Passes 5 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	Mod
Passes 2 or fewer criteria	Poor (1)	

Suggested enhancement interventions to improve condition score

Condition Sheet: POND Habitat Type				
ukhab – UK Habitat Classification				
For ponds (non-priority) – see the Biodiversity Metric 4.0 Technical Annex 2.				
Site name and location		**On-site or off-site**		
		Survey reference (if relating to a wider survey)		
Limitations (if applicable)		**Habitat parcel refe**		
		P1	**P2**	**P3**
		Grid reference		
Condition Assessment Criteria				
		Criterion passed (		
Core Criteria - applicable to all ponds (woodland[1] and non-woodland):				
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Y	Y	Y
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	Y	Y	N
C	Less than 10% of the water surface is covered with duckweed *Lemna* spp. or filamentous algae.	N	N	N
D	The pond is not artificially connected to other waterbodies, e.g. agricultural ditches or artificial pipework.	Y	N	Y
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams[2], pumps or pipework.	Y	Y	Y
F	There is an absence of listed non-native plant and animal species[3].	Y	Y	Y
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Y	Y	Y
Additional Criteria - must be assessed for all non-woodland ponds:				
H	Emergent, submerged or floating plants (excluding duckweed)[4] cover at least 50% of the pond area which is less than 3 m deep.	Y	Y	N
I	The pond surface is no more than 50% shaded by adjacent trees and scrub.	Y	Y	Y
	Number of criteria passed			
Condition Assessment Result	**Condition Assessment Score**	**Score Achieved ×**		
Results for woodland ponds which require assessment of 7 core criteri				
Passes 7 criteria	Good (3)			
Passes 5 or 6 criteria	Moderate (2)			
Passes 4 or fewer criteria	Poor (1)			
Results for non-woodland ponds which require assessment of 9 criteria				
Passes 9 criteria	Good (3)			
Passes 6 to 8 criteria	Moderate (2)	Mod	Mod	Mod
Passes 5 or fewer criteria	Poor (1)			

Condition Sheet: SCRUB Habitat Type										
For other scrub types see:	ukhab – UK Habitat Classification									
Site name and location		**On-site or off-site**								
		Survey reference (if relating to a wider survey)								
Limitations (if applicable)		**Habitat parcel reference**								
		SC4	**SC5**	**SC6**	**SC7**	**SC8**				
		Grid reference								
Condition Assessment Criteria		**Gorse**	**Mixed**	**Mixed**	**Mixed**	**Mixed**				
		Criterion passed (Yes or No)								
A	The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species[1], with no single species comprising more than 75% of the cover (except hazel *Corylus avellana* , common juniper *Juniperus communis* , sea buckthorn *Hippophae rhamnoides* or box *Buxus sempervirens* , which can be up to 100% cover).	Y	Y	Y	Y	Y				
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran[2]) shrubs are all present.	Y	Y	Y	Y	Y				
C	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]) and species indicative of sub-optimal condition[5] make up less than 5% of ground cover.	N	N	N	N	N				
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	Y	N	Y	Y	Y				
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	Y	Y	Y	Y	Y				
	Number of criteria passed									
Condition Assessment Result (out of 5 criteria)	**Condition Assessment Score**	**Score Achieved x/l**								
Passes 5 criteria	Good (3)									
Passes 3 or 4 criteria	Moderate (2)	Mod	Mod	Mod	Mod	mod				
Passes 2 or fewer criteria	Poor (1)									

Condition Sheet: URBAN Habitat Type								
See the Biodiversity Metric 4.0 User Guide for green roofs, and UK Habitat Classification (UKHab) for other habitats:								ukhab – UK Habit
Site name and location			**On-site or off-site**					
			Survey reference (if relating to a wider survey)					
Limitations (if applicable)			**Habitat parcel reference**					
			S1	**S2**	**S3**	**BG1**	**BG2**	**BG3**
			Grid reference					
Condition Assessment Criteria								
			Criterion passed (Yes or No)					
Core Criteria - must be assessed for **all urban habitat types**:								
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	Y	Y	N	N	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	Y	Y	N	N	N
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	Y	Y	Y	Y	Y
Additional Criteria - must be assessed for **Open mosaic habitat on previously developed land** only:								

Condition Sheet: WOODLAND Habitat Type

UK Habitat Classification (UKHab) Habitat Type(s)

Woodland and forest - Lowland beech and yew woodland
Woodland and forest - Lowland mixed deciduous woodland
Woodland and forest - Native pine woodlands
Woodland and forest - Other coniferous woodland
Woodland and forest - Other Scot's pine woodland
Woodland and forest - Other woodland; broadleaved
Woodland and forest - Other woodland; mixed
Woodland and forest - Upland birchwoods
Woodland and forest - Upland mixed ashwoods
Woodland and forest - Upland oakwood
Woodland and forest - Wet woodland

Habitat Description

ukhab – UK Habitat Classification

This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey Method, available here:
Woodland Wildlife Toolkit (sylva.org.uk)

IMPORTANT: This biodiversity metric woodland condition assessment must be used to assess woodland being input into the biodiversity metric. The outputs of this condition assessment are not equivalent to, nor are they comparable with the scores from the EWBG condition assessment, because the EWBG assessment has been adapted for the biodiversity metric, including the removal of EWBG Indicator 7 (Proportion of favourable land cover around woodland) and Indicator 14 (Size of woodland), and minor changes to other indicators.

Site name and location		**On-site or off-site**		**Habitat parcel reference**									
				W1	W2	W3	W4						
Limitations (if applicable)		**Survey reference (if relating to a wider survey)**		**Grid reference**									

Condition Assessment Criteria

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

Condition Sheet: WOODLAND Habitat Type								
G	**Woodland regeneration**	7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland[8].	No classes or coppice regrowth present in woodland[8].				
H	**Tree health**	Tree mortality less than 10%, no pests or diseases and no crown dieback[3].	11% to 25% tree mortality and or crown dieback or low-risk pest or disease present[3].	Greater than 25% tree mortality and or any high-risk pest or disease present[3].	2	2	2	1
I	**Vegetation and ground flora**	Recognisable NVC plant community[10] at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community[10] at ground layer present.	No recognisable woodland NVC plant community[10] at ground layer present.	3	3	3	3
J	**Woodland vertical structure**	Three or more storeys across all survey plots, or a complex woodland[11].	Two storeys across all survey plots[11].	One or less storey across all survey plots[11].	3	2	2	2
K	**Veteran trees**	Two or more veteran trees[12] per hectare.	One veteran tree[12] per hectare.	No veteran trees[12] present in woodland.	1	1	1	1
L	**Amount of deadwood**	50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities[13].	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities[13].	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities[13].	2	2	2	1
M	**Woodland disturbance**	No nutrient enrichment or damaged ground evident[14].	Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground[14].	More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground[14].	2	1	1	1
				Total Score (out of a possible 39)				
Condition Assessment Result			**Condition Assessment Score**		**Result Achieved**			
Total score >32 (33 to 39)			Good (3)					
Total score 26 to 32			Moderate (2)		32	30	30	
Total score <26 (13 to 25)			Poor (1)					23
Suggested enhancement interventions to improve condition score								

PROPOSED HABITATS

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type(s)			
Grassland - Modified grassland			
Site name and location		**On-site or off-site**	
Limitations (if applicable)		**Survey reference (if relating to a wider survey)**	
Grid reference		**Habitat parcel reference**	
Habitat Description			
Amenity grass			
ukhab – UK Habitat Classification			

	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 *Rubus fruticosus* 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 *Pteridium aquilinum* 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)	
	Number of criteria passed	

Condition Assessment Result (out of 7 criteria)	**Condition Assessment Score**	**Score Achieved x/**

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)							
Limitations (if applicable)		**Habitat parcel reference**	Traditional	Species rich grass			
Condition Assessment Criteria		**Grid reference**					
		Criterion passed (Yes or No)					
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. **Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**		Y	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	N			
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[1].		Y	Y			
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.		Y	Y			
E	Combined cover of species indicative of sub-optimal condition[2] 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[3] (as listed on Schedule 9 of WCA[4]) are present, this criterion is automatically failed.		Y	Y			
Additional Criterion - must be assessed for all non-acid grassland types							
F	There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). **Note - this criterion is essential for achieving Good condition for non-acid grassland types only.**		N	N			
		Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)					
		Number of criteria passed					
Condition Assessment Result	**Condition Assessment Score**	**Score Achieved x/y**					
Acid Grassland types (Result out of 5 criteria)							
Passes 5 criteria	Good (3)						
Passes 3 or 4 criteria	Moderate (2)						
Passes 2 or fewer criteria	Poor (1)						
Non-acid grassland types (Result out of 6 criteria)							
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)	Mod	Mod				

Condition sheet: HEDGEROW Habitat Types														
Attributes and functional groupings (A, B, C, D and E)		**Criteria – the minimum requirements for 'favourable condition'**	**Criteria description**	**Habitat parcel reference**										
				Create	H5	H7	H12	H14	H15	H16	H17	H18	H13	
				Grid reference										
Core groups – applicable to all hedgerow types				**Criterion passed (Yes or No)**										
A1.	Height	>1.5 m average along length	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. 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). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. 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).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
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	Y	Y	Y	Y	Y	Y	Y	Y	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	Y	Y	Y	Y	Y	Y	Y	Y	Y	
C1.	Undisturbed ground and perennial	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length:	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow.	N	N	N	N	N	N	N	N	N	N	

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 hedgerow (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.	N	N	N	N	N	N	N	N	N	N
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 *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information 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].	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
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	Y	Y	Y	Y	Y	Y	Y	Y	Y

Condition sheet: HEDGEROW Habitat Types

Attributes and functional groupings (A, B, C, D and E)		Criteria – the minimum requirements for 'favourable condition'	Criteria description	Habitat parcel reference: H11			
				Grid reference			
Core groups – applicable to all hedgerow types				**Criterion passed (Yes or N**			
A1.	Height	>1.5 m average along length	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. 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). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Y			
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height. 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).	Y			
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	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length:	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow.	N			

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 hedgerow (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.	N			
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 *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* 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 (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information 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].	Y			
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			

Condition Sheet: INDIVIDUAL TREES Habitat Type

Habitat Type(s)

Individual trees – Urban trees
Individual trees – Rural trees
Complete a condition sheet for each tree or block of trees.

Please see separate Line of trees condition sheet for a line of Rural trees.

Habitat Description

Individual trees (description applied to the urban or rural environment):
Young trees over 7.5 cm in diameter at breast height whose canopies are not touching.

Urban Perimeter / Linear Blocks and Groups (description applied to the urban environment only)
Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includ railways and canals, and also former field boundary trees incorporated into developments. Canopies must overlap cont don't match the descriptions for woodland may be assessed within this category.

Site name and location		**On-site or off-site**
Limitations (if applicable)		**Survey reference (if relating to a wider survey)**
Grid reference		**Habitat parcel reference**

	Condition Assessment Criteria	**Criterion passed (Yes or No)**
A	The tree is a native species (or at least 70% within the block are native species).	Y
B	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
C	The tree is mature (or more than 50% within the block are mature).	N
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Y
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y
	Number of criteria passed	

Condition Assessment Result (out of 6 criteria)	**Condition Assessment Score**	**Score Achieved x/l**
Passes 5 or 6 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	Moderate
Passes 2 or fewer criteria	Poor (1)	

Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.

Condition Sheet: LINE OF TREES Habitat Type

Habitat Type(s)

Line of trees
Line of trees – associated with bank or ditch
Ecologically valuable line of trees
Ecologically valuable line of trees – associated with bank or ditch

Habitat Description

Line of trees

See the Biodiversity Metric 4.0 User Guide Section 9.

This assessment is based on the Hedgerow Survey Handbook[1]. For further clarifications please refer to the H
Where ancient and veteran trees are present within the line of trees, see Footnote 2 for standing advice.

Site name and location		**On-site or off-site**	
Limitations (if applicable)		**Survey reference (if relating to a wider survey)**	
Grid reference		**Habitat parcel reference**	

	Condition Assessment Criteria	**Criterion passed (Yes or No)**	**N**
A	At least 70% of trees are native species.	Y	
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.	N	
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 (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice[2].	N	
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	

Condition Assessment Result (out of 5 criteria)	**Condition Assessment Score**	**Score Achieved x/**
Passes 5 criteria	Good (3)	
Passes 3 or 4 criteria	Moderate (2)	Moderate
Passes 2 or fewer criteria	Poor (1)	

Condition Sheet: POND Habitat Type

Habitat Type(s)

Lakes - Ponds (priority habitat)
Lakes - Ponds (non-priority habitat)
Lakes - Temporary lakes ponds and pools (H3170) [Use this condition sheet for Temporary
condition sheet for Temporary lakes]
Lakes - Ornamental lake or pond [Use this condition sheet for Ornamental ponds, use Lake con
lakes]

Habitat Description

ukhab – UK Habitat Classification

For ponds (non-priority) – see the Biodiversity Metric 4.0 Technical Annex 2.

Site name and location		**On-site or off-site**	
Limitations (if applicable)		**Survey reference (if relating to a wider survey)**	
Grid reference		**Habitat parcel reference**	

	Condition Assessment Criteria	**Criterion passed (Yes or No)**	**N ju**
Core Criteria - applicable to all ponds (woodland[1] and non-woodland):			
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	N	
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	Y	
C	Less than 10% of the water surface is covered with duckweed *Lemna* spp. or filamentous algae.	Y	
D	The pond is not artificially connected to other waterbodies, e.g. agricultural ditches or artificial pipework.	N	
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams[2], pumps or pipework.	N	
F	There is an absence of listed non-native plant and animal species[3].	Y	
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Y	
Additional Criteria - must be assessed for all non-woodland ponds:			
H	Emergent, submerged or floating plants (excluding duckweed)[4] cover at least 50% of the pond area which is less than 3 m deep.	Y	
I	The pond surface is no more than 50% shaded by adjacent trees and scrub.	Y	
	Number of criteria passed		

Condition Assessment Result	**Condition Assessment Scor**	**Score Achieved**
Results for woodland ponds which require assessment of 7 core criteria		
Passes 7 criteria	Good (3)	
Passes 5 or 6 criteria	Moderate (2)	
Passes 4 or fewer criteria	Poor (1)	
Results for non-woodland ponds which require assessment of 9 criteria		
Passes 9 criteria	Good (3)	
Passes 6 to 8 criteria	Moderate (2)	Moderate
Passes 5 or fewer criteria	Poor (1)	

Suggested enhancement interventions to improve condition score

Condition Sheet: SCRUB Habitat Type					
For Dunes with sea buckthorn see:	Dunes with sea-buckthorn (Dunes with Hippophae rhamnoides) - Spe				
For other scrub types see:	ukhab – UK Habitat Classification				
Site name and location		**On-site or off-site**			
		Survey reference (if relating to a wider survey)			
Limitations (if applicable)		**Habitat parcel refere**			
		Gorse	**Native**		
		Grid reference			
Condition Assessment Criteria					
		Criterion passed (Ye			
A	The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species[1], with no single species comprising more than 75% of the cover (except hazel *Corylus avellana* , common juniper *Juniperus communis* , sea buckthorn *Hippophae rhamnoides* or box *Buxus sempervirens* , which can be up to 100% cover).	Y	Y		
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran[2]) shrubs are all present.	N	N		
C	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]) and species indicative of sub-optimal condition[5] make up less than 5% of ground cover.	Y	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.	Y	Y		
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	N		
	Number of criteria passed				
Condition Assessment Result (out of 5 criteria)	**Condition Assessment Score**	**Score Achieved x/**			
Passes 5 criteria	Good (3)				
Passes 3 or 4 criteria	Moderate (2)	Mod	Mod		
Passes 2 or fewer criteria	Poor (1)				
Suggested enhancement interventions to improve condition score					

Condition Sheet: URBAN Habitat Type				
Limitations (if applicable)		**Habitat parcel reference**		
		Allotments	**Bioswale**	**Attentuation**
		Grid reference		
Condition Assessment Criteria				
		Criterion passed (Yes or		
Core Criteria - must be assessed for **all urban habitat types**:				
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.	Y	N	Y
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	Y	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	Y	Y
Additional Criteria - must be assessed for **Open mosaic habitat on previously developed land** only:				
D1	The parcel shows spatial variation and forms a mosaic of at least four early successional communities (a) to (h) PLUS bare substrate. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland.			
D2	The parcel contains pools of water such as permanent and ephemeral waterbodies.			
Additional Criteria - must be assessed for **Bioswale and SuDS** habitat types only:				
E1	Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife[4].		Y	Y
E2	The vegetation is comprised of plant species suited to wetland or riparian situations		Y	Y

Condition Sheet: WETLAND Habitat Type

Habitat Description

Reedbed

For Oceanic valley mires - see EUNIS

See the Biodiversity Metric 4.0 User Guide for Floodplain wetland mosaic and coastal and floodplain grazing marsh (CF see the below:

Coastal and floodplain grazing marsh UK BAP Priority Habitat description

Priority Habitat Inventory (England) - data.gov.uk

All other wetland habitats - see UK Habitat Classification (UKHab):

UKHab

Site name and location		**On-site or off-site**	
Limitations (if applicable)		**Survey reference (if relating to a wider survey)**	
Grid reference		**Habitat parcel reference**	

	Condition Assessment Criteria	**Criterion passed (Yes or No)**	
Core Criteria - must be assessed for **all wetland habitat types**:			
A	The water table is at, or near the surface throughout the year - this could be open water or saturation of soil at the surface. There is no artificial drainage, unless specifically to maintain water levels as specified above. **Note - this criterion is essential for achieving Good condition.**	Y	
B	The parcel is a good representation of the wetland habitat type it has been identified as, based on its UKHab description - as in, the appearance and composition of the vegetation closely matches the characteristics of the specific habitat type. Indicator species for the specific wetland habitat type[1] listed by UKHab are consistently present.	Y	
C	The water supplies (groundwater, surface water and or rainwater) to the wetland are of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Y	
D	Cover of scrub and scattered trees are less than 10%.	Y	
E	Cover of bare ground is less than 5%.	Y	
F	There is an absence of invasive non-native plant species[2] (as listed on Schedule 9 of WCA[3]) and species indicative of sub-optimal condition[4] make up less than 5% of ground cover.	Y	
Additional Criterion - must be assessed for **Fen and Purple moor grass and rush pasture** habitats only:			
G	No more than 25% of the habitat area has a continuous cover of litter (such as dead vegetation) preventing regeneration.		
Additional Criterion - must be assessed for **Bog** habitats only:			
H	Sphagnum moss *Sphagnum* spp. and cottongrasses *Eriophorum* spp. are at least Frequent[5]. Cover of ericaceous dwarf shrubs[6] is less than 75%.		
Additional Criterion - must be assessed for **Reedbed** habitats only:			
	The reedbed has a diverse structure with between 60 and 80% reeds *Phragmites australis* . Other areas may include open water (at least 10%), species-rich fen and or wet woodland.	N	
Additional Criterion - must be assessed for **Floodplain wetland mosaic and CFGM** only:			
J	All ditches recorded within the habitat achieve Good condition as assessed using the Ditch condition sheet. Note – do not record ditches which are part of the floodplain wetland mosaic and CFGM within the Watercourse module.		
	Essential criterion achieved (required for Good condition) Yes or No		

Condition Sheet: WOODLAND Habitat Type

Proposed woodland planting - Other woodland; mixed

Ukhab – UK Habitat Classification

This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey M
Woodland Wildlife Toolkit (sylva.org.uk)

MPORTANT: This biodiversity metric woodland condition assessment must be used to assess woodland being i
metric. The outputs of this condition assessment are not equivalent to, nor are they comparable with the scores fr
assessment, because the EWBG assessment has been adapted for the biodiversity metric, including the removal c
Proportion of favourable land cover around woodland) and Indicator 14 (Size of woodland), and minor changes to

Site name and location		**On-site or off-site**	
Limitations (if applicable)		**Survey reference (if relating to a wider survey)**	
Grid reference		**Habitat parcel reference**	

Condition Assessment Criteria

	Indicator	Good (3 points)	Moderate (2 point	Poor (1 point)	Score per
A	**Age distribution of trees**	Three age-classes[1] present.	Two age-classes[1] present.	One age-class[1] present.	1
B	**Wild, domestic and feral herbivore damage**	No significant browsing damage evident in woodland[2].	Evidence of significant browsing pressure is present in 40% or less of whole woodland[2].	Evidence of significant browsing pressure is present in 40% or more of whole woodland[2].	3
C	**Invasive plant species**	No invasive species[3] present in woodland.	Rhododendron *Rhododendron ponticum* or cherry laurel *Prunus laurocerasus* not present, other invasive species[3] <10% cover.	Rhododendron or cherry laurel present, or other invasive species[3] >10% cover.	3
D	**Number of native tree species**	Five or more native tree or shrub species[4] found across woodland parcel.	Three to four native tree or shrub species[4] found across woodland parcel.	Two or less native tree or shrub species[4] across woodland parcel.	3
E	**Cover of native tree and shrub species**	>80% of canopy trees and >80% of understory shrubs are native[5].	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native[5].	<50% of canopy trees and <50% of understory shrubs are native[5].	3
F	**Open space within woodland**	10 - 20% of woodland has areas of temporary open space[6]. Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted[7].	21 - 40% of woodland has areas of temporary open space[6].	<10% or >40% of woodland has areas of temporary open space[6]. But if woodland <10ha has <10% temporary open space, please see Good category[7].	3

G	**Woodland regeneration**	All three classes present in woodland[8]; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland[8].	No classes or coppice regrowth present in woodland[8].	1	
H	**Tree health**	Tree mortality less than 10%, no pests or diseases and no crown dieback[9].	11% to 25% mortality and/or crown dieback or low-risk pest or disease present[9].	Greater than 25% tree mortality and or any high-risk pest or disease present[9].	3	
I	**Vegetation and ground flora**	Recognisable NVC plant community[10] at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community[10] at ground layer present.	No recognisable woodland NVC plant community[10] at ground layer present.	1	
J	**Woodland vertical structure**	Three or more storeys across all survey plots or a complex woodland[11].	Two storeys across all survey plots[11].	One or less storey across all survey plots[11].	1	
K	**Veteran trees**	Two or more veteran trees[12] per hectare.	One veteran tree[12] per hectare.	No veteran trees[12] present in woodland.	1	
L	**Amount of deadwood**	50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities[13].	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities[13].	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities[13].	1	
M	**Woodland disturbance**	No nutrient enrichment or damaged ground evident[14].	Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground[14].	More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground[14].	2	
				Total Score (out of a possible 39)		

Condition Assessment Result	**Condition Assessment Score**	**Result Achieved**
Total score >32 (33 to 39)	Good (3)	26 - Moderate
Total score 26 to 32	Moderate (2)	
Total score <26 (13 to 25)	Poor (1)	
Suggested enhancement interventions to improve condition score		

APPENDIX 3
RIVER CONDITION ASSESSMENT

River Type Desk Study

Ditch 1 is a tributary of the River Dearne. The river reach is approximately 0.79km in length and the valley length is approximately 0.75km. There is one single channel present and is an unconfined watercourse. The coarsest bed material is Boulder, and the average bed material size is Gravel/Pebble. The river type was calculated as Type F straight/sinuous.

Ditch 6 is a tributary of the River Dearne. The river reach is approximately 0.9km in length and the valley length is approximately 0.88km. There is one single channel present and is an unconfined watercourse. The coarsest bed material is Boulder, and the average bed material size is Gravel/Pebble. The river type was calculated as Type F straight/sinuous.

MoRPh 5 Pro Raw Data			
longitude	-1.516591	-1.518194	-1.520352
latitude	53.559035	53.561388	53.560413
easting	432119.4481	432011.5157	431869.29
northing	407043.4694	407304.5135	407195.0434
ngr	SE 32119 07043	SE 32011 07304	SE 31869 07195
riverName	Tributary of River Dearne 2	Tributary of River Dearne	Tributary of River Dearne
reachName	Tributary of River Dearne 2, Barnsley West	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West
subreachName	Tributary of River Dearne 2, Barnsley West, Barnsley West D6	Tributary of River Dearne, Barnsley West, Barnsley West D1.1	Tributary of River Dearne, Barnsley West, Barnsley West D1.2
projectName	Barnsley West	Barnsley West	Barnsley West
projectCode	Barnsley West	Barnsley West	Barnsley West
surveyType	pre-project	pre-project	pre-project
moduleNumbers	1 to 5	1 to 5	1 to 5
preliminaryConditionScore	1.5101215	1.5425102	1.3522267
shape	0.7919255	1.8624642	0.8850227
averageWidth	1.02	1.3	1.17
PositiveIndexAverage	1.8947369	2.1578948	1.7368422
NegativeIndexAverage	-0.3846154	-0.61538464	-0.3846154
A6	FALSE	FALSE	FALSE
A7	BO	BO	GP

A8	GP	GP	SA
B1	4	4	4
B2	1	0	1
B3	0	2	0
B4	0	0	0
B5	0	0	0
C1	2	3	3
C2	1	1	1
C3	2	3	2
C4	3	3	3
C5	3	2	1
C6	3	4	3
C7	0	0	0
C8	-1	-1	0
C9	-1	-2	0
C10	0	0	0
D1	1	2	1
D2	0	1	0
D3	2	1	1
D4	1	1	1
D5	-1	0	0
E1	0	1	0
E2	2	2	2
E3	2	2	2
E4	3	3	3
E5	2	2	2
E6	4	4	3

E7	-2	-4	-4
E8	0	-1	0
E9	0	0	0
E10	0	0	-1
E11	0	0	0
E12	0	0	0

MoRPh Pro Raw Data - Subreach D1.1					
longitude	-1.518627	-1.518339	-1.51808	-1.517898	-1.517761
latitude	53.561134	53.561303	53.561455	53.561562	53.561642
easting	431983.0284	432001.9779	432019.0192	432030.994	432040.0083
northing	407276.0531	407294.984	407312.0107	407323.9964	407332.9582
ngr	SE 31983 07276	SE 32001 07294	SE 32019 07312	SE 32030 07323	SE 32040 07332
timestamp	2023-07-12T09:00:00Z	2023-07-12T09:00:00Z	2023-07-12T09:00:00Z	2023-07-12T09:00:00Z	2023-07-19T09:00:00Z
riverName	Tributary of River Dearne	Tributary of River Dearne	Tributary of River Dearne	Tributary of River Dearne	Tributary of River Dearne
reachName	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West
subreachName	Tributary of River Dearne, Barnsley West, Barnsley West D1.1	Tributary of River Dearne, Barnsley West, Barnsley West D1.1	Tributary of River Dearne, Barnsley West, Barnsley West D1.1	Tributary of River Dearne, Barnsley West, Barnsley West D1.1	Tributary of River Dearne, Barnsley West, Barnsley West D1.1
moduleNumber	1	2	3	4	5
projectName	Barnsley West	Barnsley West	Barnsley West	Barnsley West	Barnsley West

projectCode	Barnsley West	Barnsley West	Barnsley West	Barnsley West	Barnsley West
surveyType	pre-project	pre-project	pre-project	pre-project	pre-project
index1	1	3	2	2	3
index2	RP	CH	RP	RP	RP
index3	5	4	3	3	2
index4	BO	BO	CO	CO	GP
index5	-3.25	-3.5904763	-6.2897725	-0.8214286	-3.3732395
index6	GP	GP	CO	SA	GP
index7	0.3	6.8	7.65	2	6.7
index8	4.1666665	4.5833335	3.3333333	2.9166667	3.75
index9	1	1	1	0	0
index10	2.6190476	2.1904762	3.6190476	2.4880953	3.3809524
index11	4.5	5	5.5	6	5
index12	0	0	0	0	0
index13	0	0	0	0.95	0
index14	0	0	0	0	0
himalayanBalsam	A	A	A	A	A
japaneseKnotweed	A	A	A	A	A
giantHogweed	A	A	A	A	A
floatingPennywort	A	A	A	A	A

MoRPh Pro Raw Data - Sub-reach D1.2					
longitude	-1.520585	-1.520448	-1.520326	-1.520204	-1.520113
latitude	53.560243	53.56035	53.56043	53.56052	53.560573

easting	431854.0007	431862.9954	431871.0167	431879.0305	431885.0186
northing	407176.051	407188.0163	407196.9711	407207.0384	407212.9754
ngr	SE 31854 07176	SE 31862 07188	SE 31871 07196	SE 31879 07207	SE 31885 07212
timestamp	2023-07-19T13:09:34Z	2023-07-19T12:38:18Z	2023-07-19T12:34:16Z	2023-07-19T11:56:00Z	2023-07-19T11:58:28Z
riverName	Tributary of River Dearne	Tributary of River Dearne	Tributary of River Dearne	Tributary of River Dearne	Tributary of River Dearne
reachName	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West
subreachName	Tributary of River Dearne, Barnsley West, Barnsley West D1.2	Tributary of River Dearne, Barnsley West, Barnsley West D1.2	Tributary of River Dearne, Barnsley West, Barnsley West D1.2	Tributary of River Dearne, Barnsley West, Barnsley West D1.2	Tributary of River Dearne, Barnsley West, Barnsley West D1.2
moduleNumber	1	2	3	4	5
projectName	Barnsley West	Barnsley West	Barnsley West	Barnsley West	Barnsley West
projectCode	Barnsley West	Barnsley West	Barnsley West	Barnsley West	Barnsley West
surveyType	pre-project	pre-project	pre-project	pre-project	pre-project
index1	1	2	2	2	2
index2	SM	CH	RP	RP	RP
index3	0	1	3	3	1
index4			GP	GP	GP
index5	-8		1.075	1.075	-3.5
index6	CO		SA	SA	GP
index7	0	6.7	2.85	1.15	6.7
index8	1.25	2.9166667	3.3333333	3.3333333	1.6666666
index9	0	0	0	0	0

index10	1.6666666	0.4047619	1.9047619	1.9047619	1.9047619
index11	3	3.5	4.5	5	4
index12	0	0	0	0	0
index13	0	0	0	0	0
index14	0	0	0	0	0
himalayanBalsam	A	A	A	A	A
japaneseKnotweed	A	A	A	A	A
giantHogweed	A	A	A	A	A
floatingPennywort	A	A	A	A	A

MoRPh Pro Raw Data - Sub-reach D6					
longitude	-1.51642	-1.516523	-1.516673	-1.516703	-1.516853
latitude	53.558806	53.558986	53.559094	53.559103	53.559158
easting	432130.974	432124.0152	432113.9975	432112.0034	432102.0257
northing	407018.0427	407038.0222	407049.9702	407050.958	407057.0097
ngr	SE 32130 07018	SE 32124 07038	SE 32113 07049	SE 32112 07050	SE 32102 07057
timestamp	2023-07-12T09:00:00Z	2023-07-12T09:00:00Z	2023-07-12T09:00:00Z	2023-07-12T09:00:00Z	2023-07-12T09:00:00Z
riverName	Tributary of River Dearne 2	Tributary of River Dearne 2	Tributary of River Dearne 2	Tributary of River Dearne 2	Tributary of River Dearne 2
reachName	Tributary of River Dearne 2, Barnsley West	Tributary of River Dearne 2, Barnsley West	Tributary of River Dearne 2, Barnsley West	Tributary of River Dearne 2, Barnsley West	Tributary of River Dearne 2, Barnsley West
subreachName	Tributary of River Dearne 2, Barnsley	Tributary of River Dearne 2, Barnsley	Tributary of River Dearne 2, Barnsley	Tributary of River Dearne 2, Barnsley	Tributary of River Dearne 2, Barnsley

	West, Barnsley West D6	West, Barnsley West D6	West, Barnsley West D6	West, Barnsley West D6	West, Barnsley West D6
moduleNumber	1	2	3	4	5
projectName	Barnsley West	Barnsley West	Barnsley West	Barnsley West	Barnsley West
projectCode	Barnsley West	Barnsley West	Barnsley West	Barnsley West	Barnsley West
surveyType	pre-project	pre-project	pre-project	pre-project	pre-project
index1	2	2	1	2	2
index2	RP	UW	RP	UW	RP
index3	1	3	2	2	2
index4	CO	CO	CO	BO	CO
index5	-7.1904764	-4.130682	-4.028409	-4.7670455	-4.028409
index6	CO	GP	GP	GP	GP
index7	0	1.9	0	0	0
index8	2.9166667	2.5	3.3333333	3.3333333	3.3333333
index9	0	0	0	0	0
index10	2.3333333	2.3809524	2.857143	2.3809524	1.6666666
index11	4	4.5	3.5	4.5	4
index12	0	0	0	0	0
index13	0	0	0	0	0.1
index14	0	0	0	0	0
himalayanBalsam	A	A	A	A	A
japaneseKnotweed	A	A	A	A	A
giantHogweed	A	A	A	A	A

floatingPennywort	A	A	A	A	A

MoRPh River Type Raw Data		
longitude	-1.522017	-1.51674
latitude	53.557732	53.557209
easting	431761.0192	432110.9663
northing	406896.054	406840.2595
ngr	SE 31761 06896	SE 32110 06840
riverName	Tributary of River Dearne	Tributary of River Dearne 2
reachName	Tributary of River Dearne, Barnsley West	Tributary of River Dearne 2, Barnsley West
projectName	Barnsley West	Barnsley West
projectCode	Barnsley West	Barnsley West
Waterbody reference	D1	D6
riverCategory	Other	Other
a1	1	1
a2	1.0533333	1.0227273
a3	1	1
a4	Unconfined	Unconfined
a5	0.045333333	0.054545455
a6	FALSE	FALSE
a7	BO	BO
a8	GP	GP
calculatedRiverType	D	D
overriddenRiverType	F	F

finalRiverType	F	F

MoRPh Pro River Condition Raw Data			
longitude	-1.518194	-1.520352	-1.516591
latitude	53.561388	53.560413	53.559035
easting	432011.5157	431869.29	432119.4481
northing	407304.5135	407195.0434	407043.4694
ngr	SE 32011 07304	SE 31869 07195	SE 32119 07043
timestamp	2023-07-11T15:00:00Z	2023-07-11T15:00:00Z	2023-08-16T14:39:00Z
riverName	Tributary of River Dearne	Tributary of River Dearne	Tributary of River Dearne 2
reachName	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West	Tributary of River Dearne 2, Barnsley West
projectName	Barnsley West	Barnsley West	Barnsley West
projectCode	Barnsley West	Barnsley West	Barnsley West
riverCategory	Other	Other	Other
a1	1	1	1
a2	0.9493671	0.9493671	1.0227273
a3	1	1	1
a4	Unconfined	Unconfined	Unconfined
a5	0.043037973	0.043037973	0.054545455
a6	FALSE	FALSE	FALSE
a7	BO	BO	BO
a8	GP	GP	GP
calculatedRiverType	D	D	D

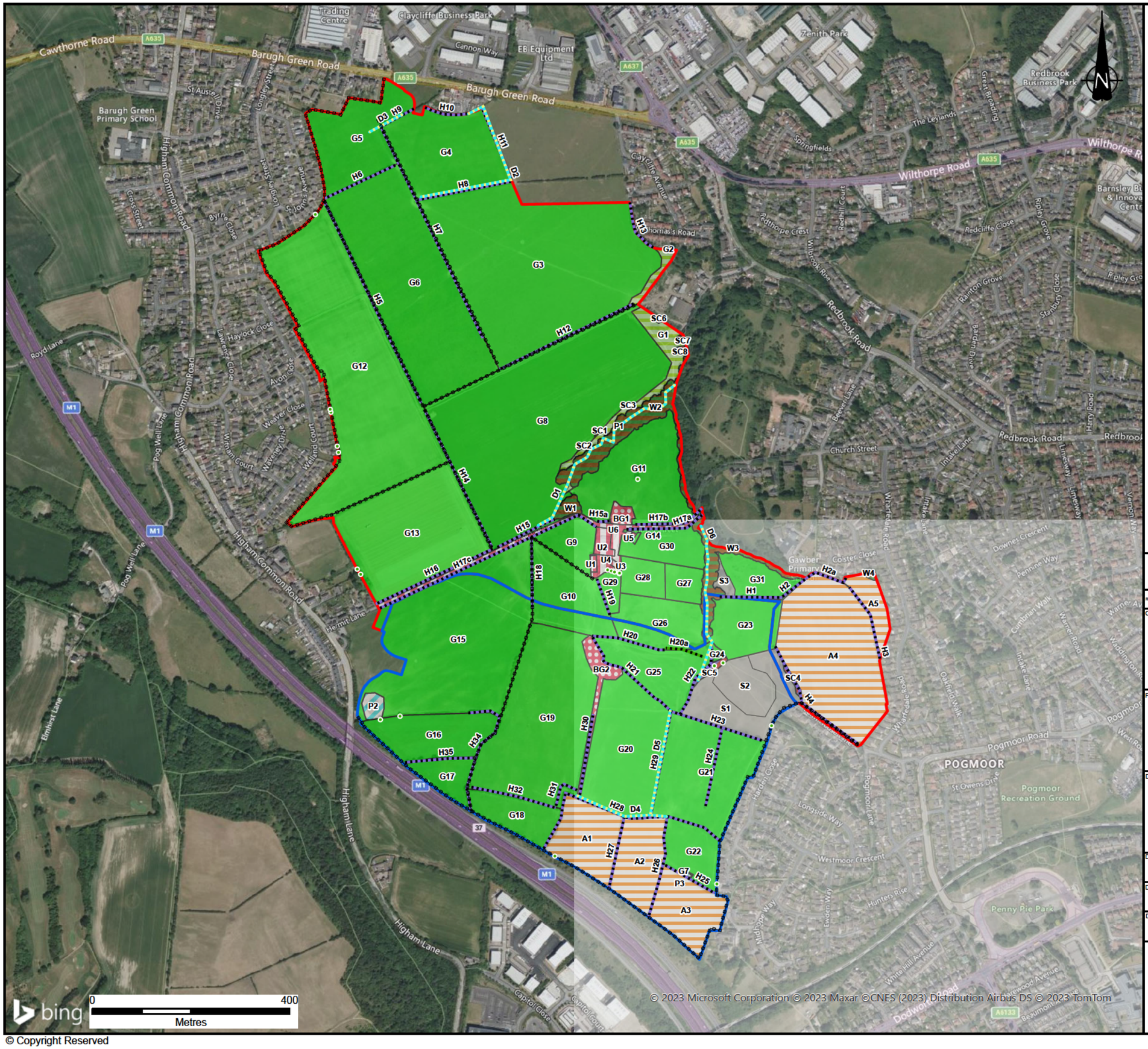
overriddenRiverType	F	F	F
finalRiverType	F	F	F
multiMorphRiverName	Tributary of River Dearne	Tributary of River Dearne	Tributary of River Dearne 2
multiMorphReachName	Tributary of River Dearne, Barnsley West	Tributary of River Dearne, Barnsley West	Tributary of River Dearne 2, Barnsley West
subreachName	Tributary of River Dearne, Barnsley West, Barnsley West D1.1	Tributary of River Dearne, Barnsley West, Barnsley West D1.2	Tributary of River Dearne 2, Barnsley West, Barnsley West D6
moduleNumbers	1 to 5	1 to 5	1 to 5
surveyType	pre-project	pre-project	pre-project
shape	1.8624642	0.8850227	0.7919255
averageWidth	1.3	1.17	1.02
preliminaryConditionScore	1.5425102	1.3522267	1.5101215
finalConditionClass	FairlyGood	Moderate	FairlyGood

APPENDIX 4
METRIC 4.0 CALCULATION WORKSHEETS

Combined Residential and Employment Area

Employment Area

DRAWINGS



KEY

- Residential Site Boundary
- Commerical Site Boundary
- c1c - cereal crops (A)
- g3c - other neutral grassland (G)
- g4 - modified grassland (G)
- h3 - dense scrub (SC)
- r1 - standing open water and canals (P)
- s - sparsely vegetated land (S)
- u1b - developed land, sealed surface (U)
- u1c - artificial unvegetated unsealed surface (BG)
- w1f - lowland mixed deciduous woodland (w)
- h2a - hedgerow (priority habitat) (H)
- r1e - canal or ditch (D)
- w1g6 - line of trees (H)
- Fence
- Rural Trees

Notes:

Boundaries are indicative.

Aerial imagery shown for context purposes only.

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
B	BOUNDARY AMENDENTS	01/24	SRW	AD	TP
A	FIRST ISSUE	10/23	SRW	AD	TP

CLIENT

STRATA STERLING BARNSLEY WEST LTD

PROJECT

BARNSLEY WEST

DRAWING TITLE

UKHAB HABITAT PLAN

DRG No.	REV
LD10361/003	B

DRG SIZE	SCALE	DATE
A3	1:7,500	08/01/2024

DRAWN BY	CHECKED BY	APPROVED BY
SRW	AD	TP

wardell armstrong

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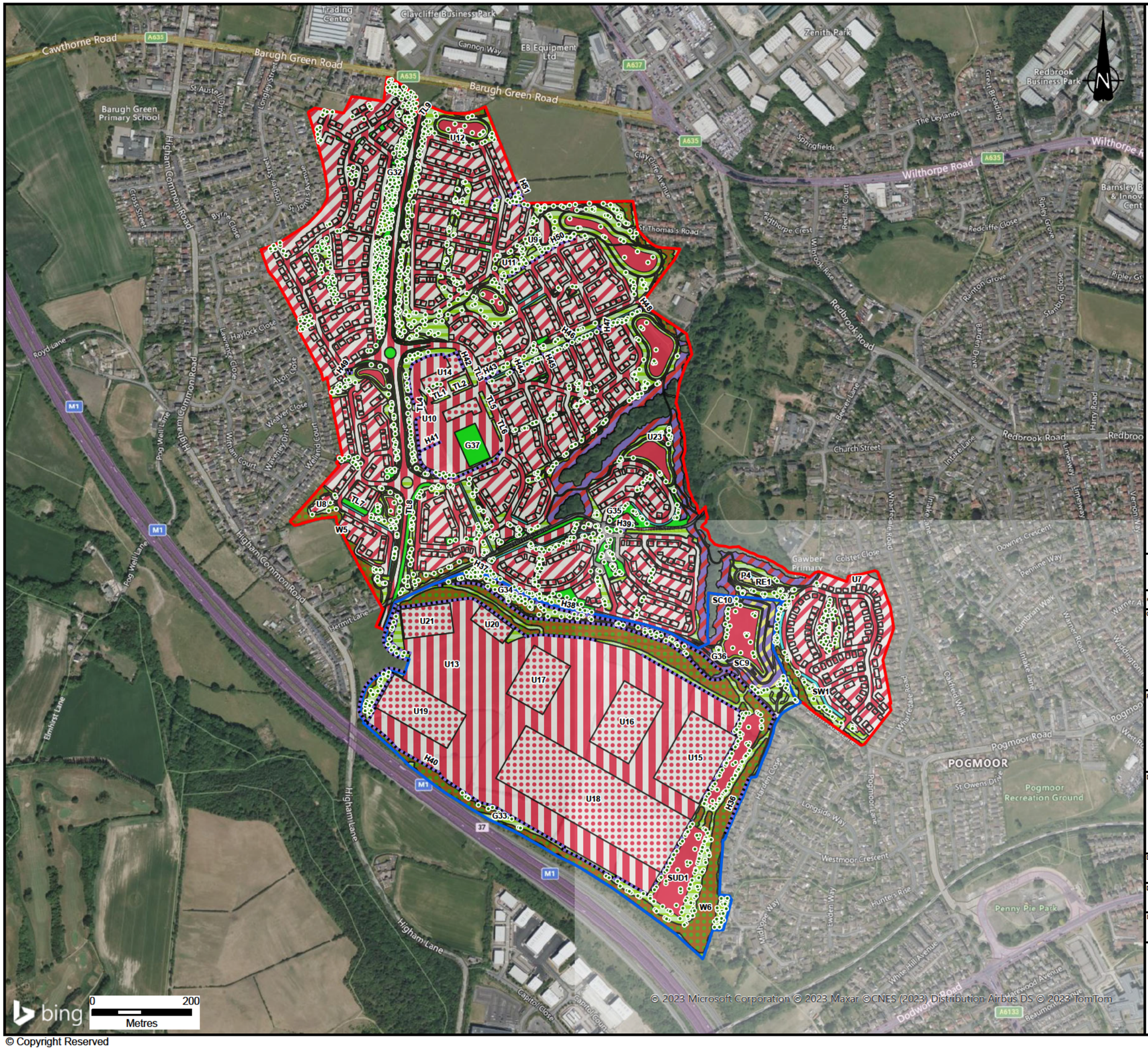

KEY

- Residential Site Boundary
- Commercial Site Boundary
- f2e - reedbeds (RE)
- g3c - other neutral grassland (G)
- g4 - modified grassland (G)
- h3h - mixed scrub (SC)
- h3e - gorse shrub (SC)
- r1g - swales (SW)
- r1 - standing open water and canals (P)
- u - urban (SUD)
- u1 - built-up areas and gardens (U)
- u1b - developed land, sealed surface (U)
- u1b5 - buildings (U)
- u1c - artificial unvegetated unsealed surface (U)
- w1h - other woodland, mixed (W)
- h2a - hedgerow (priority habitat) (H)
- Rural Trees

Notes:

Boundaries are indicative.

Aerial imagery shown for context purposes only.

Information obtained from Drawing P11754-00-001-GIL-0100-09 Strategic Landscape Masterplan

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
B	BOUNDARY & HABITAT AMENDMENTS	01/24	SRW	AD	TP
A	FIRST ISSUE	10/23	SRW	AD	TP

CLIENT

STRATA STERLING BARNSLEY WEST LTD

PROJECT

BARNSLEY WEST

DRAWING TITLE

BIODIVERSITY NET GAIN - HABITAT CREATION

DRG No.		REV
LD10361/024		B
DRG SIZE	SCALE	DATE
A3	1:7,500	08/01/2024
DRAWN BY	CHECKED BY	APPROVED BY
SRW	AD	TP

wardell armstrong

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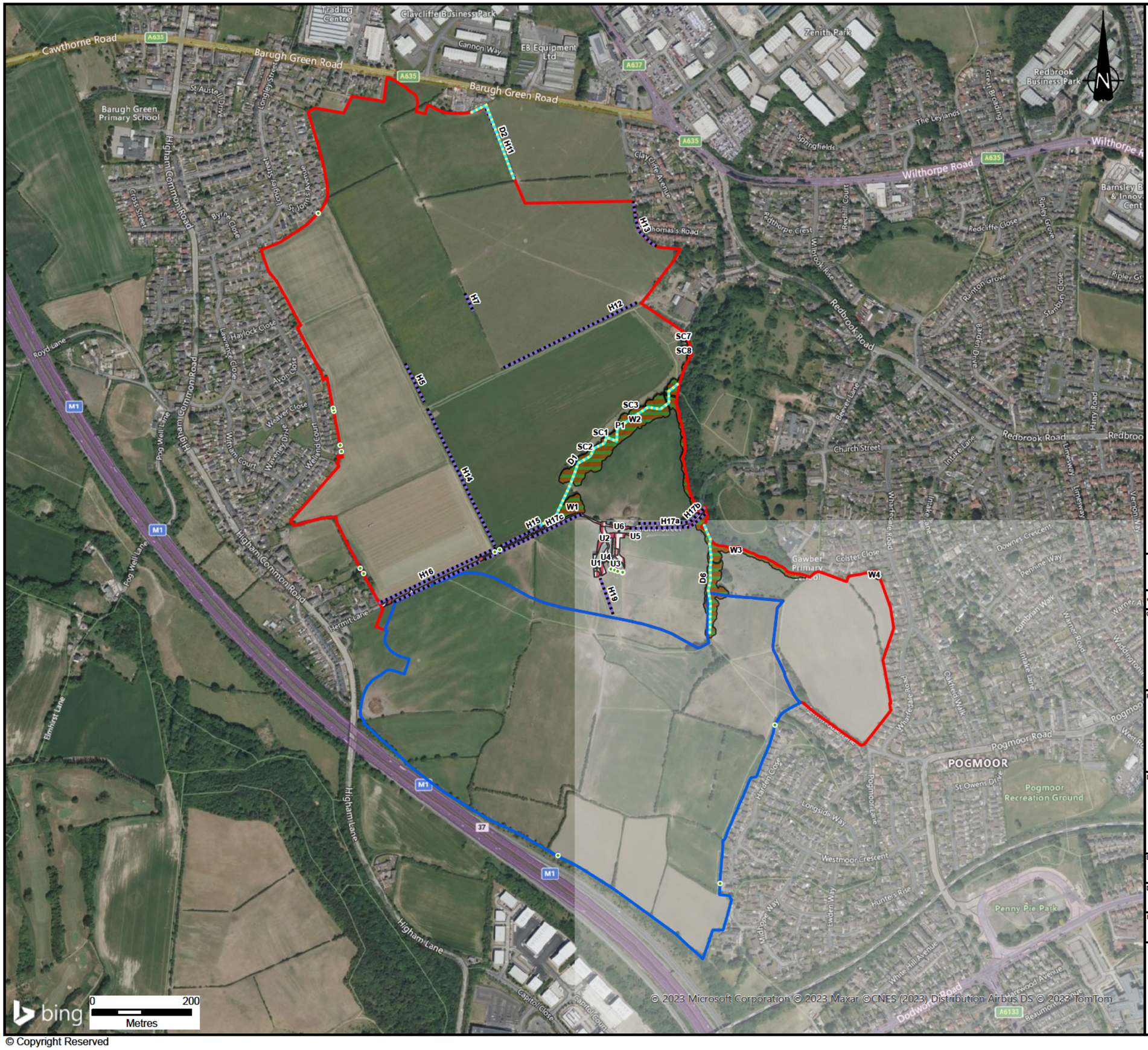

KEY

- Residential Site Boundary
- Commercial Site Boundary
- h3 - dense scrub (SC)
- r1 - standing open water and canals (P)
- u1b - developed land, sealed surface (U)
- w1f - lowland mixed deciduous woodland (W)
- h2a - hedgerow (priority habitat) (H)
- r1e - canal or ditch (D)
- Rural Trees

Notes:

Boundaries are indicative.

Aerial imagery shown for context purposes only.

Information obtained from Drawing P11754-00-001-GIL-0100-09 Strategic Landscape Masterplan

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
B	BOUNDARY & HABITAT AMENDMENTS	01/24	SRW	AD	TP
A	FIRST ISSUE	10/23	SRW	AD	TP

CLIENT

STRATA STERLING BARNSLEY WEST LTD

PROJECT

BARNSLEY WEST

DRAWING TITLE

BIODIVERSITY NET GAIN - HABITAT RETENTION

DRG No.	REV
LD10361/025	B

DRG SIZE	SCALE	DATE
A3	1:7,500	08/01/2024

DRAWN BY	CHECKED BY	APPROVED BY
SRW	AD	TP

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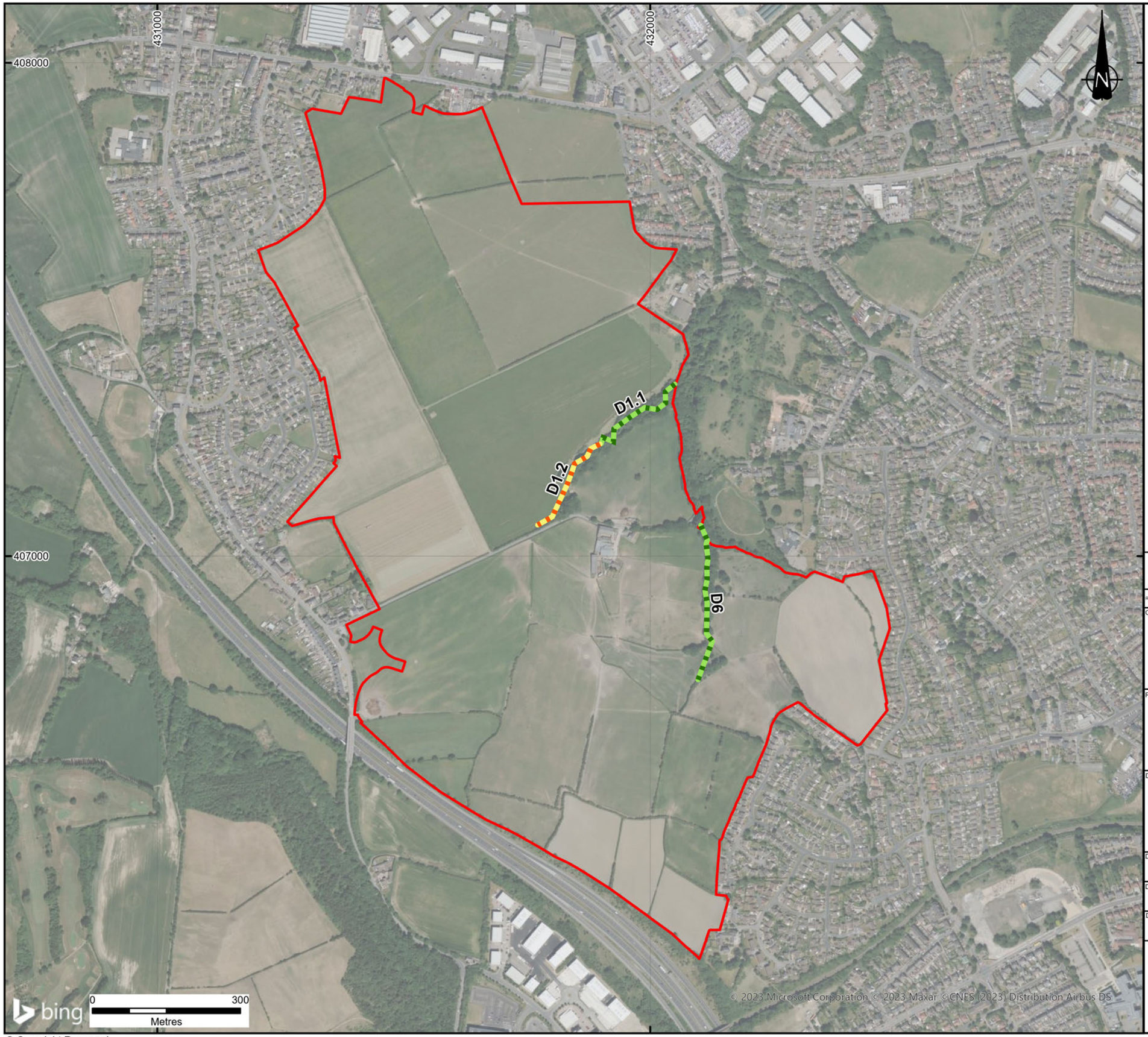

KEY

Residential Site Boundary

MoRPh Survey Results

Fairly Good

Moderate

Notes:

Boundaries are indicative. Aerial imagery shown for context purposes only.

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D

CLIENT

STRATA STERLING BARNSLEY WEST LTD

PROJECT

BARNSLEY WEST

DRAWING TITLE

MORPH SURVEY RESULTS PLAN

DRG No.	REV	SUIT. CODE
LD10361/032	A	--

DRG SIZE	SCALE	DATE
A3	1:7,500	16/08/2023

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EK	TA	TA

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