
Asland Walks Energy Park

on behalf of The Bretherton Energy Co-Operative and GA Pet Food Partners

Appendix 5- Biodiversity Net Gain Report



Report Verification and Declaration of Compliance

This report has been prepared with reference to best practice guidelines for Ecological Impact Assessment in the UK and Ireland, as defined by CIEEM (2018) and is provided in accordance with the provisions of British Standard 42020:2013 Biodiversity: Code of practice for planning and development.

| Document Control | | | | |
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| | | | | |

This report has been prepared in accordance with the terms and conditions of appointment [on request]. Avian Ecology Ltd. (6839201) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

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FIGURE 4: POST DEVELOPMENT HABITATS- MAIN SITE

ANNEX

ANNEX 1: SUMMARY OF MORPH SURVEY RESULTS

1. INTRODUCTION

1.1 Background and Scope

- 1.1.1 This report has been prepared by Avian Ecology Ltd. (AEL) on behalf of The Bretherton Energy Co-Operative and GA Pet Food Partners. AEL have been commissioned to undertake a Biodiversity Net Gain (BNG) report in relation to a proposed solar and wind energy park ('the Proposed Development') on land at Plocks Farm, Liverpool Road, Bretherton, Leyland PR26 9AX (termed the 'Site'). Detailed background information relating to the Proposed Development and the Site is provided within the Ecological Assessment Report (EAR)¹.
- 1.1.2 The Proposed Development has evolved over a number of years, and stakeholders have been involved at early stages with the Local Planning Authority (LPA), Chorley Borough Council (CBC). Pre-development habitat creation efforts have commenced within the Main Site since the initial habitat survey was undertaken in 2021. These habitat works have been undertaken between 2022 and 2024, including hedgerow, grassland and woodland planting around the perimeter of the Site, as well as the creation of a drainage ditch. With agreement with CBC² these habitat works will be recorded as habitat creation measures in advance within the BNG metric calculations. As such, the 2021 habitat survey results will be used as the baseline for the Main Site.

1.2 Site Overview

- 1.2.1 The Site, as illustrated by the red-line boundary shown on **Figure 1**, comprises the proposed solar array area, wind turbine area, associated landscaping and access routes (together the 'Main Site') as well as two proposed cable routes (the 'Cable Routes').
- 1.2.2 The Main Site, as shown by the red line boundary in **Figure 1**, measures c. 37.6ha and is predominantly comprised of arable land. The River Douglas lies along the eastern Site boundary and the Leeds and Liverpool Canal lies along the western Site boundary.
- 1.2.3 Two proposed cable routes (the 'Cable Routes') are included as part of the Proposed Development. One heads north from the Main Site parcel and connects to the GA Pet Food Ltd manufacturing facility at Plocks Farm (i.e. North Cable Route), whilst the other heads north-east, passing through the village of Bretherton to connect to a proposed substation to the north of the village (i.e. North-East Cable Route).
- 1.2.4 The Cable Route installation generally requires a 2.5m working area, as such the north eastern Cable Route measures c. 0.65ha and the northern Cable Route measures c.0.25ha. Cable Route locations are shown on **Figure 3a**.
- 1.2.5 The Main Site and Cable Routes combined (thereafter named the 'Site') measure c. 38.45ha. Further post development landscaping efforts are proposed across the Main Site, including species diverse grassland, pond, mixed scrub, species rich hedgerow and broadleaved woodland planting.

¹ Avian Ecology., 2025. Asland Energy Park Ecological Assessment.

² Chorley Borough Council Biodiversity Net Gain Pre-Application Advice (dated 11/12/2024; ref: 2024/00025/PREAPP).

1.3 Legislative and Planning Framework

1.3.1 Relevant legislation and planning policy is outlined in full within the EA, with the below policies considered pertinent to the BNG Assessment. The legislation and both national and local planning policies have been considered below in **Table 1.1** when undertaking this assessment:

Table 1.1: Summary of Relevant Legislation, Policy and Guidance

| Legislation/ Policy | Summary |
|--|--|
| Environment Act 2021 | Requires 10% net gain for most developments validated after 12 th February 2024 |
| National Planning Policy Framework (NPPF, 2024) ³ | Requires all developments to achieve a net gain for biodiversity. |
| Lancashire County Council Local Nature Recovery Strategy- Consultation Draft ⁴ | Provides guidance as to how biodiversity net gain for biodiversity should be achieved. |
| Chorley Borough Council Biodiversity Net Gain Guidance Note: Strategic Significance- Interim Approach ⁵ | Provides guidance as to how strategic significance should be applied within the biodiversity net gain metric. |
| Lancashire Biodiversity Action Plan ⁶ | Guides the planning process to ensure priority habitats are conserved and that the development leads to a net gain in biodiversity in accordance with NPPF. |
| BS 42020:2013 Biodiversity – Code of Practice for Planning and Development | Gives recommendations and provides guidance primarily for ensuring that actions and decisions taken at each stage of the planning process are informed by sufficient and appropriate ecological information. |
| BS 8683 - Process for designing and implementing biodiversity net gain | Specifies a process to design, implement, maintain and monitor BNG outcomes from a development project. |
| Biodiversity Net Gain: Good practice principles for development (CIEEM, 2016 ⁷) | Ten good practice principles to provide a framework for achieving biodiversity net gain and to demonstrate that projects followed good practice. |

³ <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

⁴ Lancashire County Council., 2025. Local Nature Recovery Strategy- Consultation Draft. Accessed at: <https://www.lancashire.gov.uk/media/963895/lancashire-local-nature-recovery-strategy.pdf>

⁵ <https://chorley.gov.uk/downloads/file/1603/chorley-bng-strategic-significance-interim-may-2025>

⁶ <https://www.lancashire.gov.uk/lern/services/> (Accessed 29th August 2025)

⁷ CIEEM (2016). Biodiversity Net Gain: Good practice principles for development. CIEEM, Winchester.

2 METHODOLOGY

2.1 Desk Study

- 2.1.1 Full methodologies relating to the desk study survey are provided in the EAR for the Proposed Development. A desktop study was undertaken to identify any known existing features or species of ecological importance within the study area.
- 2.1.2 The desk study included a review of relevant policy and guidance and sought to identify any statutory and non-statutory designated sites for nature conservation through a review of the Natural England, Joint Nature Conservation Committee (JNCC) and Multi Agency Geographic Information for the Countryside (MAGIC) websites, as well as utilising data requested from Lancashire Environmental Records Network (LERN).
- 2.1.3 A 2km search radius surrounding the Site boundary was adopted for non-statutory designated sites, 5km for statutory designated sites, 10km for internationally protected sites and extending out to 20km for designated sites with mobile qualifying waterbird species. Reference was also made to Ordnance Survey maps of the wider area and online aerial images (www.google.co.uk/maps) in order to determine any features of nature conservation interest in the wider area.

2.2 The Modular River Physical Module Survey

- 2.2.1 The Modular River Physical (MoRPh) module survey⁸ is a hydro-morphological assessment method that includes many of the Environment Agency's River Habitat Survey's⁹ components and so provides compatible information. However, it provides a number of modifications and additions that allow it to deliver a more detailed local picture of a river and its margins than the River Habitat Survey method.
- 2.2.2 The MoRPh survey was undertaken on 14th August 2025 by K. Love MS, who is certified to undertake Modular River Survey River Condition Assessments and to interpret River Corridor Assessment Indicators and Scores for baseline and post-intervention River Metric scenarios, assisted by H. Slinger.
- 2.2.3 During a MoRPh survey, information is gathered from three river units of different sizes (module, sub-reach, reach) based upon both primary field survey and secondary sources, e.g., map data. Module (MoRPh) and sub-reach (MultiMoRPh) surveys are conducted in the field using the MoRPh survey method, focusing on a single river channel and its immediate margins. The length of the MoRPh module is approximately double the width of the river channel up to a maximum 40m length. The survey module extends 10m back from the bank tops on both sides of the river to characterise the riparian zone.
- 2.2.4 For the purpose of surveying the Site, the MultiMoRPh5 methodology was chosen, this methodology allows entire reaches (in the case of the Site, three sub-reaches were studied along the Leeds and Liverpool Canal at the Site's western boundary and two sub-reaches along the River Douglas along the eastern Site boundary) to be surveyed using sub-reaches covering a minimum of 20% of the reach's

⁸ https://modularriversurvey.org/wp-content/uploads/MoRPh-Manual-ver-14_Oct22.pdf

⁹ <http://www.riverhabitatsurvey.org/>

total length, effectively balancing local sub-reach MoRPh detail with overall reach coverage. The specific survey areas are provided in **Figure 2**.

- 2.2.5 On completion of the survey, all information was entered into the Cartographer online platform¹⁰, which determined the river type, and provided indicators of the condition of the sub-reach and an overall condition score for the MoRPh5 sub-reach surveyed.
- 2.2.6 In order to appropriately assess the post-works impacts of the Proposed Development (positive or negative) upon riverine habitats where impacts would occur to the watercourse (e.g. areas requiring new or updated vehicular crossing points and areas of proposed river corridor habitat enhancements), these changes were modelled as a scenario within the 'Cartographer' platform and the condition forecasted input to the Metric.

2.3 Biodiversity Net Gain Assessment

- 2.3.1 A BNG Assessment was undertaken using the Defra Statutory Metric¹¹ ('the Metric'). The Metric provides a way of measuring and accounting for changes in the biodiversity value of a site by using habitats as a proxy for biodiversity. The BNG assessment was undertaken by A. Littlechild *BSc (Hons)*, a suitably qualified and experienced ecologist with experience utilising biodiversity metrics.
- 2.3.2 The Metric takes into account a range of factors when calculating the value of a habitat (measured as biodiversity units), including the habitats area (measured in hectares), it's distinctiveness (it's intrinsic value and rarity), condition (the quality of the habitat being assessed), and strategic significance (how ecologically valuable is the location). The distinctiveness of a habitat is pre-set within the Metric and cannot be changed.
- 2.3.3 For created habitats additional risk multipliers are assigned to account for the difficulty of creating a particular habitat type, time required to achieve the target condition, and where habitat creation is off site, spatial risk.
- 2.3.4 Habitat data from the extended habitat survey was gathered using the UK Habitat Classification (UKHab)¹², using professional judgement where no direct habitat translation is available. The extended habitat survey included an assessment of habitat condition, assessed in accordance with the relevant habitat condition criteria for the specific habitat type contained within the Metric Technical Supplement¹³. Habitat areas were calculated using GIS software.
- 2.3.5 The strategic significance was determined in line with the following documents:
- Chorley Borough Council Biodiversity Net Gain Pre-Application Advice;
 - Chorley Borough Council Biodiversity Net Gain Guidance Note: Strategic Significance- Interim Approach⁵;
 - Lancashire County Council Local Nature Recovery Strategy- Consultation Draft⁴; and

¹⁰ <https://cartographer.io/>

¹¹ <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>

¹² www.ukhab.org

¹³ <http://publications.naturalengland.org.uk/publication/6049804846366720>

- Lancashire County Council Local Nature Recovery Strategy-Local Habitat Map¹⁴.

- 2.3.6 This shows the majority of the Main Site lies within grassland opportunity layer G3.2. Professional judgement is used where it was considered the habitat provided additional ecological functions (e.g., acting as a stepping stone between other blocks of similar habitat). Where an area or habitat is specifically covered by a local planning policy or management plan, the strategic significance has been categorised as 'high'. If a habitat has functional value but is not formally recognised in local policy, the strategic significance has been categorised as 'medium'. Where the habitat does not fall under any local policies, and has limited functional value, the strategic significance has been categorised as 'low'.
- 2.3.7 Proposed landscaping was directly assigned a UKHab category, with reference to the UKHab resources and using professional judgement. The target condition of these habitats was assigned based on the likely achievable condition of the proposed habitat type, taking into account local conditions (e.g., soil nutrient levels) and proposed management.
- 2.3.8 Hedgerows and watercourses are accounted for separately in the Metric as these are linear habitats and therefore are measured in kilometres. Units are not directly interchangeable between area-based habitats and linear habitats, such as hedgerows.

2.4 Field Survey

Extended Habitat Survey

- 2.4.1 The 2021 habitat survey results are used as the baseline habitats for the Main Site, with the 2025 habitat survey results used as the baseline for the Cable Routes. Surveys followed the UK industry standard UKHab Methodology¹⁵ and with reference to the CIEEM guidance (2017)¹⁶. Full methodologies relating to the extended habitat survey are provided in the EAR.

2.5 Limitations

Desk Study

- 2.5.1 A desk study does not identify a comprehensive account of all species and features of ecological importance within the study area, however it improves the understanding of the Site's ecological value and the likely species and habitats within the area.

Extended Habitat Survey and MoRPh Survey

- 2.5.2 No significant limitations were identified with regard to these surveys or timings.

¹⁴ Lancashire County Council., 2025. Local Nature Recovery Strategy-Local Habitat Map. Accessed at: <https://experience.arcgis.com/experience/92a5cd8951b84c65b9cd842f5ffc2333/page/Habitat-Map>

¹⁵ <http://www.ukhab.org>

¹⁶ CIEEM. (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

Biodiversity Metric Calculation

- 2.5.3 It should be noted that the Metric uses habitats as a proxy for biodiversity and calculates only the relative biodiversity value of a site, and therefore cannot quantify impacts absolutely. The Metric accounts only for direct impacts to habitats, and as such cannot fully quantify all negative or positive impacts resulting from a development.

3 BASELINE CONDITIONS

3.1 Overview of Site Baseline Conditions

- 3.1.1 Site baseline conditions are described in full within the Proposed Development EAR and summarised here where it provides relevant context to the BNG assessment.

Designated Sites for Nature Conservation

- 3.1.2 The Site partially lies within one nationally designated site and one non-statutory designated site, the Ribble Estuary Marine Conservation Zone and River Douglas Estuary Biological Heritage Site (BHS) respectively. These are located within the Cable Routes where the cable crosses the River Douglas. Impacts will be avoided on both designations by installing the cable under the river via HDD.
- 3.1.3 The Leeds to Liverpool BHS also lies adjacent to the Main Sites western boundary.

Priority Habitats and Irreplaceable Habitats

- 3.1.4 No irreplaceable habitats are present on Site. No priority habitats are present within the Main Site 2021 baseline, although several parcels are present within the 2025 Cable Routes baseline: lowland mixed broadleaved woodland and hedgerows.

Habitats and Vegetation

- 3.1.5 The Main Site 2021 baseline predominantly contains a large arable field which has low value for biodiversity, with smaller areas of ditch and other neutral grassland which have moderate value for biodiversity at a local scale.
- 3.1.6 The Cable Routes comprise various habitats including arable land, modified grassland, roads and unsealed access tracks which have negligible to low ecological value. Also present to a lesser extent are woodland access tracks, hedgerows, treelines, individual trees, ditches and other neutral grassland which all provide higher ecological value at a local scale only.
- 3.1.7 Further information is provided in the Proposed Development EAR.

Protected and Notable Species

- 3.1.8 Impacts to protected and notable species are summarised within the Proposed Development EAR.

3.2 Baseline BNG Assessment

- 3.2.1 Full results of the BNG Assessment can be seen in the Metric spreadsheet for the application, submitted as a separate document (**Appendix 4**).

- 3.2.2 In light of the consultation draft of Lancashire County Council LNRS and following the BNG metric user guide¹⁷, all baseline habitats have been assigned low strategic significance. The user guide states '*the baseline strategic significance values for habitat parcels in that area should always be scored as low*'. It is noted that this differs slightly from Pre-App advice but it this has been used in the anticipation of the LNRS being released imminently (expected in Spring-Summer 2025).

Irreplaceable Habitats

- 3.2.3 No irreplaceable habitats are present on Site.

Summary of BNG Baseline

- 3.2.4 Baseline habitats with the Site generate a total of 77.93 area-based units, 9,21 linear habitats and 29.41 watercourse units.
- 3.2.5 A breakdown of the individual habitats present, including their condition, is summarised in **Table 3.1** below, and also provided within the Metric for the Proposed Development. Baseline habitats for the Main Site are shown on **Figure 1** and for the Cable Routes on **Figures 3a-e**.

Watercourse Baseline

- 3.2.6 Only two small sections of the River Douglas lie within the Site boundary, where the Cable Routes will be installed underneath via HDD. However, as the Site red line boundary lies within 10m of the bank tops (and therefore in the riparian zones) of both the River Douglas and Leeds to Liverpool Canal, these respective lengths have been included in Metric calculations.
- 3.2.7 The Leeds to Liverpool Canal, in its current condition (i.e. baseline condition) returned an overall preliminary condition score of -0.138 and a final condition score of Fairly Poor. All three sections surveyed returned the same condition.
- 3.2.8 The River Douglas, in its current condition (i.e. baseline condition) returned different preliminary scores and conditions across the sections surveyed. The northern module surveyed (as shown as RD1 on **Figure 2**) scored a preliminary condition score of 0.069 and a final condition score of Fairly Poor, whilst the southern module surveyed (as shown as RD2 on **Figure 2**) scored a preliminary condition score of 0.251 and a final condition score of Moderate. These differences were predominantly down to differences in vegetation composition.
- 3.2.9 Raw MoRPh results are included within the Raw Data Excel Spreadsheet which accompanies this document in **Annex 1** (provided as a separate document).

¹⁷ <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>

Table 3.1: Summary of Baseline Habitats

(*Key for Metric Habitat Ref column: A = area habitats, L = linear habitats and W= watercourse habitats)

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|-------------------------|------------------------|-----------------|---|---|--|
| A1 | Cereal crops | 37.21 | N/A | From the Main Site 2021 baseline- Arable field- cereal crop | N/A | All to be lost for the purposed of the metric. |
| A2 | Other neutral grassland | 0.25 | Poor | From the Main Site 2021 baseline- Other neutral grassland surrounding ditch in the north of Site. | Criteria passed: B, C, D Criteria failed: A, E | All to be lost for the purposed of the metric. |
| A3 | Other neutral grassland | 0.1 | Poor | From the Main Site 2021 baseline- Other neutral grassland near River Douglas. | Criteria passed: A, D Criteria failed: B, C, E, F | All to be lost for the purposed of the metric. |
| A4 | Other neutral grassland | 0.0039 | Poor | NORTHERN CABLE ROUTE- Other neutral grassland associated with River Douglas bankside vegetation. | Criteria passed: A, D Criteria failed: B, C, E, F | All to be retained- Cable will be installed underneath it via HDD- no above ground impact so classed as retained. |
| A5 | Watercourse footprint | 0.0186 | N/A - Other | NORTHERN CABLE ROUTE- River Douglas watercourse footprint from northern cable route. | N/A Please see watercourse habitat ref for more information. | All to be retained- Cable will be installed underneath it via HDD- no above ground impact and classed as retained. |
| A6 | Modified grassland | 0.0879 | Moderate | NORTHERN CABLE ROUTE- Grassland east of the River Douglas- maintained mown path. | Criteria passed: A, C, D, F, G Criteria failed: B, E | All to be retained- Thin lengths of modified grassland loss to facilitate the trench work development will easily recolonise post development, with the metric stating this baseline habitat type and condition should be reached within one year. As such, this habitat is classed as a temporary |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|--|------------------------|-----------------|--|---|---|
| | | | | | | impact as per pg 34 in the metric user guide and is therefore retained in the metric |
| A7 | Modified grassland | 0.0225 | Poor | NORTHERN CABLE ROUTE- Grassland earth bank which bounds Plocks farm compound area. | Criteria passed: C, D, F, G Criteria failed: A, B, E | All to be retained- Thin lengths of modified grassland loss to facilitate the trench work development will easily recolonise post development, with the metric stating this baseline habitat type and condition should be reached within one year. As such, this habitat is classed as a temporary impact as per pg 34 in the metric user guide and is therefore retained in the metric |
| A8 | Artificial unvegetated, unsealed surface | 0.0593 | N/A - Other | NORTHERN CABLE ROUTE- Plocks farm compound area- gravel substrate | N/A | All to be retained- Thin lengths to be temporarily impacted to facilitate the trench work. To be replaced after cable installed- as such only a temporary impact- no loss and retained within the metric. |
| A9 | Developed land; sealed surface | 0.0025 | N/A - Other | NORTHERN CABLE ROUTE- Road-entrance to Plocks Farm. | N/A | All to be retained- Thin lengths to be temporarily impacted to facilitate the trench work. To be replaced after cable installed- as such only a temporary impact- no loss and retained within the metric. |
| A10 | Modified grassland | 0.0042 | Poor | NORTHERN CABLE ROUTE- Amenity grassland either side of access road into Plocks Farm. | Criteria passed: C, D, F, G Criteria failed: A, B, E | All to be retained- Thin lengths of modified grassland loss to facilitate the trench work development will easily recolonise post development, with the metric stating this baseline habitat type and condition should be reached within one year. As such, this habitat is classed as a temporary impact as per pg 34 in the metric user guide and is therefore retained in the metric |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|--------------------------------|------------------------|-----------------|---|---|---|
| A11 | Developed land; sealed surface | 0.044 | N/A - Other | NORTHERN CABLE ROUTE- Developed area of Plocks Farm- leads to substation area. | N/A | All to be retained- Thin lengths to be temporarily impacted to facilitate the trench work. To be replaced after cable installed- as such only a temporary impact- no loss and retained within the metric. |
| A12 | Other woodland; broadleaved | 0.0035 | Moderate | NORTHERN CABLE ROUTE- Thin strip of woodland within survey area (0.25m wide) - located east of acoustic fence. | Score of 29/39. | All to be retained- The cable will be installed on the back of the adjacent acoustic fence and as such, no impacts anticipated on the woodland itself and is classed as retained. No individual trees or understory scrub to be removed. Whilst there may be some impacts to the ground level of the woodland, it is considered that this is a temporary impact as overall condition is expected to be the same within 2 years. |
| A13 | Other neutral grassland | 0.0046 | Poor | NORTH EAST CABLE ROUTE- Other neutral grassland associated with River Douglas bankside vegetation. | Criteria passed: A, D Criteria failed: B, C, E, F | All to be retained- Cable will be installed underneath it via HDD- no above ground impact so classed as retained. |
| A14 | Watercourse footprint | 0.0051 | N/A - Other | NORTH EAST CABLE ROUTE- River Douglas watercourse footprint from northern cable route. | N/A | All to be retained- Cable will be installed underneath it via HDD- no above ground impact and classed as retained. |
| A15 | Modified grassland | 0.0075 | Good | NORTH EAST CABLE ROUTE- Modified grassland associated with the eastern aspect of River Douglas bankside vegetation. | Criteria passed: A, B, D, E, F, G Criteria failed: C | All to be retained- Cable will be installed underneath it via HDD- no above ground impact so classed as retained. |
| A16 | Modified grassland | 0.1015 | Poor | NORTH EAST CABLE ROUTE- Mown grassland verges along Eyes Lane and | Criteria passed: C, E, F, G | All to be retained- Thin lengths of modified grassland loss to facilitate the trench work development will easily |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|--|------------------------|--------------------------|---|-----------------------------|--|
| | | | | South Road. | Criteria failed: A, B, D | recolonise post development, with the metric stating this baseline habitat type and condition should be reached within one year. As such, this habitat is classed as a temporary impact as per pg 34 in the metric user guide and is therefore retained in the metric. |
| A17 | Cereal crops | 0.1215 | Condition Assessment N/A | NORTH EAST CABLE ROUTE- Other cereal crop fields in west of cable route. | N/A | All to be retained- Thin lengths may be temporarily impacted to facilitate the trench work. To be replaced after cable installed- as such only a temporary impact- no loss and retained within the metric. |
| A18 | Non-cereal crops | 0.016 | Condition Assessment N/A | NORTH EAST CABLE ROUTE- Non-cereal crop in field adjacent to Eyes Lane. | N/A | All to be retained as above. |
| A19 | Artificial unvegetated, unsealed surface | 0.0068 | N/A - Other | NORTH EAST CABLE ROUTE- earth and stone track along arable field edge. | N/A | All to be retained as above. |
| A20 | Other woodland; broadleaved | 0.028 | Poor | NORTH EAST CABLE ROUTE- track through woodland block between arable fields. | Score of 23/39. | All to be retained- Cable to be installed underneath the woodland track via open HV trenching. Depth unknown but works limited to the width of the track, no wider than 2.5m. No individual trees or understory scrub to be removed. Whilst there may be some impacts to the RPZ of the woodland, it is considered that this is a temporary impact and the classed as retained within the metric as overall condition is expected to be the same within 2 years. |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|----------------------------------|------------------------|-----------------|---|-----------------------------|---|
| A21 | Lowland mixed deciduous woodland | 0.0068 | Moderate | NORTH EAST CABLE ROUTE- track through woodland block, offsite woodland extends south into the arable field and encompasses a dry pond. | Score of 26/39. | All to be retained- Woodland impacts as above. |
| A22 | Other woodland; broadleaved | 0.0115 | Poor | NORTH EAST CABLE ROUTE- track through woodland block west of Eyes Lane. | Score of 20/39. | All to be retained- Woodland impacts as above. |
| A23 | Other woodland; broadleaved | 0.0005 | Poor | NORTH EAST CABLE ROUTE- Small section of woodland east of Eyes Lane. | Score of 20/39. | All to be retained- Woodland impacts as above. |
| A24 | Lowland mixed deciduous woodland | 0.0126 | Moderate | NORTH EAST CABLE ROUTE- Small section of woodland east of Eyes Lane. | Score of 30/39. | All to be retained- Woodland impacts as above. |
| A25 | Other woodland; broadleaved | 0.0038 | Poor | NORTH EAST CABLE ROUTE- Small section of woodland east of Eyes Lane. | Score of 20/39. | All to be retained- Woodland impacts as above. |
| A26 | Developed land; sealed surface | 0.1955 | N/A - Other | NORTH EAST CABLE ROUTE- Sections of road along Eyes Lane and South Road. | N/A | All to be retained- Thin lengths may be temporarily impacted to facilitate the trench work. To be replaced after cable installed- as such only a temporary impact and retained within the metric. |
| A27 | Vegetated garden | 0.011 | N/A | NORTH EAST CABLE ROUTE- Sections of buildings and gardens within the working area. Allocated as vegetated gardens for purposed of the metric. | N/A | All to be retained- None of this habitat type expected to be impacted as lay on private land. As such retained within the metric. |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|---------------------|------------------------|-----------------|---|--|--|
| A28 | Modified grassland | 0.1147 | Good | NORTH EAST CABLE ROUTE- Modified grassland field within the eastern most section of Cable Route. | Criteria passed: A, B, C, E, F, G Criteria failed: D | All be lost for the purposed of the BNG assessment-This will likely be recreated post development, however as this This habitat type and condition takes 7 years to be re-created, it us unable to be classed as a temporary impact. Noted that this is an arable grassland field, which is subject to changes in management year on year. Notwithstanding this, this area is allocated as lost and replaced with developed land post development for the purposes of the metric calculation. As such, there is no area habitat creation required within the Cable Routes (and therefore subject to a 30 year HMP/LEMP). |
| L1 | Native hedgerow | 0.0025 | Moderate | NORTHERN CABLE ROUTE- Small section of beech hedgerow within the cable route working area (2.5m wide) | Criteria passed: A2, B2, C2, D1, D2 Criteria failed: A2, B1, C1 | All to be lost- Required in order to install cable from solar array to substation. Will be replanted post development but won't be the same condition in 2 years so allocated as lost, then recreated in hedge creation tab. |
| L2 | Native hedgerow | 0.14 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow section along Eyes Lane. | Criteria passed: A1, B1, B2, C2, D1 Criteria failed: A2, B2, C1, D2 | All to be retained- Cable to be installed adjacent to hedgerow/treeline feature via open HV trenching. Depth unknown but works limited to the width of the working area, no wider than 2.5m. No individual hedgerow/treelines sections to be removed. Whilst there may be some impacts to the RPZ of the hedgerow/treeline, it is considered that this is a temporary impact and the classed as retained within the metric as overall condition is expected to be the same within 2 years. |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|----------------------------|------------------------|-----------------|---|--|------------------------------|
| L3 | Native hedgerow with trees | 0.07 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow with trees section along Eyes Lane. | Criteria passed: A1, B1, B2, C2, D1, E2 Criteria failed: A2, C1, D2, E1 | All to be retained as above. |
| L4 | Native hedgerow with trees | 0.06 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow with trees section along Eyes Lane. | Criteria passed: A1, B1, B2, C2, D1, E2 Criteria failed: A2, C1, D2, E1 | All to be retained as above. |
| L5 | Native hedgerow | 0.07 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane. | Criteria passed: A1, A2, B1, B2, D1 Criteria failed: C1, C2, D2 | All to be retained as above. |
| L6 | Native hedgerow | 0.07 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane. | Criteria passed: A1, B1, C1, D1 Criteria failed: A2, B2, C2, D2 | All to be retained as above. |
| L7 | Native hedgerow with trees | 0.04 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow with trees section along South Lane. | Criteria passed: A1, B1, B2, C2, D1, E2 Criteria failed: A2, C1, D2, E1 | All to be retained as above. |
| L8 | Native hedgerow | 0.01 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane. | Criteria passed: A1, B1, B2, C2, D1 Criteria failed: A2, C1, D2 | All to be retained as above. |
| L9 | Native hedgerow | 0.02 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane. | Criteria passed: A1, B1, C1, D1 | All to be retained as above. |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|----------------------------|------------------------|-----------------|---|--|------------------------------|
| | | | | | Criteria failed: A2, B2, C2, D2 | |
| L10 | Line of trees | 0.03 | Moderate | NORTH EAST CABLE ROUTE- Treeline section along South Lane. | Criteria passed: A, B, E Criteria failed: C, D | All to be retained as above. |
| L11 | Native hedgerow | 0.02 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane. | Criteria passed: A1, B1, B2, C2, D1 Criteria failed: A2, C1, D2 | All to be retained as above. |
| L12 | Native hedgerow | 0.02 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane. | Criteria passed: A1, B1, B2, C2, D1 Criteria failed: A2, C1, D2 | All to be retained as above. |
| L13 | Native hedgerow with trees | 0.04 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow with trees section along South Lane. | Criteria passed: A1, B1, B2, C2, D1, E2 Criteria failed: A2, C1, D2, E1 | All to be retained as above. |
| L14 | Native hedgerow | 0.02 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane. | Criteria passed: A1, B1, B2, C2, D1 Criteria failed: A2, C1, D2 | All to be retained as above. |
| L15 | Line of trees | 0.03 | Poor | NORTH EAST CABLE ROUTE- Treeline section along South Lane. | Criteria passed: B, E Criteria failed: A, C, D | All to be retained as above. |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|------------------------------------|------------------------|-----------------|---|--|------------------------------|
| L16 | Non-native and ornamental hedgerow | 0.02 | Poor | NORTH EAST CABLE ROUTE- Ornamental/nonnative hedgerow section along South Lane. | Pre-set in the Metric as POOR. | All to be retained as above. |
| L17 | Native hedgerow | 0.02 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane. | Criteria passed: A1, B1, B2, C2, D1 Criteria failed: A2, C1, D2 | All to be retained as above. |
| L18 | Native hedgerow | 0.03 | Moderate | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane. | Criteria passed: A1, B1, C2, D1 Criteria failed: A2, B2, C1, D2 | All to be retained as above. |
| L19 | Native hedgerow | 0.02 | Good | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane | Criteria passed: A1, A2, B1, B2, C2, D1 Criteria failed: C1, D2 | All to be retained as above. |
| L20 | Native hedgerow | 0.02 | Good | NORTH EAST CABLE ROUTE- Hedgerow section along South Lane. | Criteria passed: A1, A2, B1, B2, C2, D1 Criteria failed: C1, D2 | All to be retained as above. |
| L21 | Line of trees | 0.07 | Moderate | NORTH EAST CABLE ROUTE- Treeline section north of South Lane. | Criteria passed: A, B, E Criteria failed: C, D | All to be retained as above. |
| L22 | Species-rich native hedgerow | 0.04 | Moderate | NORTH EAST CABLE ROUTE- Species rich hedgerow section north of South Lane. | Criteria passed: A1, B2, C1, C2, D1 Criteria failed: A2, B1, D2 | All to be retained as above. |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|---|------------------------|-----------------|--|--|---|
| L23 | Native hedgerow - associated with bank or ditch | 0.18 | Good | NORTH EAST CABLE ROUTE- Hedgerow with dry ditch section north of South Lane. | Criteria passed: A1, A2, B2, C1, C2, D1, D2 Criteria failed: B1 | All to be retained as above. |
| L24 | Native hedgerow - associated with bank or ditch | 0.03 | Good | NORTH EAST CABLE ROUTE- Hedgerow with dry ditch section north of South Lane. | Criteria passed: A1, A2, B1, B2, C1, C2, D1, D2 Criteria failed: NONE | All to be retained as above. |
| L25 | Native hedgerow - associated with bank or ditch | 0.19 | Good | NORTH EAST CABLE ROUTE- Species rich hedgerow with dry ditch section north of South Lane. | Criteria passed: A1, A2, B2, C1, C2, D1, D2 Criteria failed: B1 | All to be retained as above. |
| W1 | Other rivers and streams | 1.83 | Fairly Poor | Liverpool to Leeds Canal- does not lie within the RLB itself but included in the metric as the RLB does lie within 10m from the top of banktop. Allocated as 'other rivers and streams' within this metric rather than 'canal' as it used to be the old River Douglas, re-purposed as a canal. | Please see separate raw MoRPh survey sheets for a detailed breakdown of results. | All to be retained and enhanced post development by reducing riparian encroachment. |
| W2 | Ditches | 0.35 | Poor | Existing drainage ditch in the north of Site, within arable field. | Criteria passed: C, G, H Criteria failed: A, B, D, E, F | All to be retained and enhanced post development by reducing riparian encroachment. |
| W3 | Other rivers and streams | 0.54 | Moderate | A section of the River Douglas along eastern boundary of Site (southern section 2)- allocated as other rivers and streams as an artificially created river channel. | Please see separate raw MoRPh survey sheets for a detailed | All to be retained and enhanced post development by reducing riparian encroachment. One small linear section in the NORTH EASTERN CABLE ROUTE working area (2.5m = 0.0025km) where cable will be installed underneath the |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|--------------------------|------------------------|-----------------|---|--|---|
| | | | | | breakdown of results. | watercourse via HDD. As such, no impacts on the watercourse channel or riparian habitat so kept as retained within the metric. The remainder of the river does not lie within the Main Site or Cable Route working area but the development does come within 10m from the top of bank top so is included within the metric. |
| W4 | Other rivers and streams | 0.74 | Fairly Poor | A section of the River Douglas along eastern boundary of Site (northern section 1)- allocated as other rivers and streams as an artificially created river channel. | Please see separate raw MoRPh survey sheets for a detailed breakdown of results. | All to be retained and enhanced post development by reducing riparian encroachment. One small linear section in the NORTHERN CABLE ROUTE working area (7.5m = 0.0075km) where cable will be installed underneath the watercourse via HDD. As such, no impacts on the watercourse channel or riparian habitat so kept as retained within the metric. The remainder of the river does not lie within the Main Site or Cable Route working area but the development does come within 10m from the top of banktop so is included within the metric. |
| W5 | Ditches | 0.35 | Moderate | Existing drainage ditch by south eastern Main Site boundary- not within Site but RLB within 5m of bank top so included in metric. | Criteria passed: B, C, D, E, F, G Criteria failed: A, H | All to be retained and enhanced post development by reducing riparian encroachment. |
| W6 | Ditches | 0.17 | Moderate | Existing drainage ditch along the northern boundary of Red Bridge Farm and on the western half of the southern Main Site boundary. Not within Site but RLB within 5m of bank top so included in metric. | Criteria passed: A, B, C, D, E, F, G Criteria failed: H | All to be retained and enhanced post development by reducing riparian encroachment. |

| Metric Habitat Ref* | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Action(s) |
|---------------------|---------------------|------------------------|-----------------|--|--|---|
| W7 | Ditches | 0.13 | Moderate | Existing drainage ditch along the western boundary of Red Bridge Farm and on the western half of the southern Main Site boundary. Not within Site but RLB within 5m of bank top so included in metric. | Criteria passed: A, B, C, D, E, F, G Criteria failed: H | All to be retained. |
| W8 | Ditches | 0.0048 | Poor | NORTH EAST CABLE ROUTE-Dry ditch between KI U2 and KI W2. | Criteria passed: E, H Criteria failed: A, B, C, D, F, G | All to be retained- Cable to be installed via open HV trenching, considered that there will be a temporary impact at most and classed as retained within the metric as overall habitat type and condition is expected to be the same within 2 years. |
| W9 | Ditches | 0.0052 | Poor | NORTH EAST CABLE ROUTE-Dry ditch between KI W2 AND KI A1. | Criteria passed: E, H Criteria failed: A, B, C, D, F, G | All to be retained as above. |
| W10 | Ditches | 0.0064 | Poor | NORTH EAST CABLE ROUTE- Wet ditch that runs under Eyes Lane. | Criteria passed: A, E, H Criteria failed: B, C, D, F, G | All to be retained as above.. |

4 PROPOSED DESIGN

4.1 Design Overview

- 4.1.1 The design for the Proposed Development involves the placement of a single wind turbine along with solar panels and associated infrastructure within areas of existing arable cropland only in the south of the Main Site. The northern half of the Main Site will be used for habitat enhancements only.
- 4.1.2 Species rich hedgerow and scrub creation will serve to screen the solar array, whilst also creating stronger connectivity across the centre of Site. Further areas of woodland, hedgerow, pond, scrub and extensive areas of other neutral grassland will be created across the remainder of Main Site.
- 4.1.3 The Proposed Development design can be seen on the *Site Layout Plan* (GSA Consulting Drawing Number: 2022-143-002D - Full Proposed Site Layout) and *Landscape Plan* (BCA Landscape Limited Drawing Number: 22.522-BCAL-ZZ-00-DR-L-102-2-Landscape Structure); which details the Proposed Development layout and landscaping on Site.
- 4.1.4 The Cable Routes are only subject to temporary impacts, with exception of a small section (2.5m) of beech hedgerow near Plocks Farm entrance which is required to be removed in order to install the cable. This will be re-instated post development.
- 4.1.5 Plans show the development will avoid areas of higher value habitat such as the River Douglas and associated other neutral grassland by the use of Horizontal Directional Drilling (HDD) underneath these features. Whilst the 2.5m working area associated with the Cable Routes includes higher value habitats such as woodland blocks and treelines, impacts to these will be avoided by restricting cable works to existing woodland tracks and adjacent roads/modified grassland road verges.
- 4.1.6 Measures relating to the creation, management and monitoring of habitats created and enhanced will be set out within a HMMP for the Proposed Development, which would be secured subject to the general biodiversity net gain condition.

4.2 Post-works BNG Assessment

- 4.2.1 Headline BNG results are shown below in **Table 4.1**. Full results of the BNG assessment can be seen in the Metric spreadsheet for the application, submitted as a separate document.
- 4.2.2 Due to the inclusion of the Main Site within grassland opportunity layer G3.2 from the Lancashire County Council Local Habitat Map, all vegetated created habitats within the Main Site have been assigned high strategic significance. It is acknowledged that not all created habitats match the draft LNRS opportunity layer description or enhancement criteria for this layer, however this was used following the Proposed Development pre-application advice².
- 4.2.3 Remaining urban habitat types within Main Site have been assigned low strategic significance.
- 4.2.4 All habitats present within the Cable Routes have been assigned low strategic significance as these are either not covered by draft LNRS habitat opportunity layers or they do not meet the habitat descriptions or enhancement criteria.

Table 4.1: Headline BNG results

| | | | |
|--|-------------------|--------|---------|
| On-site baseline | Habitat units | 77.93 | |
| | Hedgerow units | 9.21 | |
| | Watercourse units | 29.41 | |
| On-site post-intervention (including habitat retention, creation & enhancement) | Habitat units | 214.34 | |
| | Hedgerow units | 24.21 | |
| | Watercourse units | 35.62 | |
| On-site net change (units & percentage) | Habitat units | 136.41 | 175.05% |
| | Hedgerow units | 15.00 | 162.89% |
| | Watercourse units | 6.21 | 21.12% |

Post-works BNG Summary

- 4.2.5 Baseline area-based habitats within the Site, measuring 38.45ha, total 77.93 biodiversity units.
- 4.2.6 Retained habitats total 1.42 units and 76.51 units will be lost, however 74.42 of these units are from arable cropland, which will be removed and grassland created instead post development. Created habitats generate a total of 212.92 biodiversity units. Post development, the Site totals 214.34 units.
- 4.2.7 The Site baseline generates 9.21 linear units, with only 0.01 units being lost for the development to facilitate the new cabling.
- 4.2.8 Proposed hedgerow creation (both measures created in advance and those proposed) generate 15.01 units, with 1.32km species rich hedgerow already planted and 0.48km species rich hedgerow yet to be planted within the Main Site, plus 0.0025km of replacement native hedgerow created within the north eastern Cable Route. Post development, the Site totals 24.21 linear units.
- 4.2.9 The Site baseline generates 29.41 watercourse units, with none being lost for the development. Proposed enhancements generate 33.24 units, with 0.31km of new ditch created (in advance measure) generating a further 1.43 watercourse units. Post development, this amounts to a total of 35.62 watercourse units.
- 4.2.10 Post-works habitats are anticipated to result in gains of +136.41 units or **+175.05%** for area-based units, +15.00 units or **+162.89%** for hedgerow units and +6.21 units or **+21.12%** for watercourse units
- 4.2.11 A breakdown of the habitats proposed to be created and enhanced, including their target condition is summarised in **Table 4.2** below, and also provided within the Metric Spreadsheet.

Table 4.2: Summary of Post-development Habitats

| Landscape Habitat Type | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Time to Target Condition (Years) |
|-------------------------|-------------------------|------------------------|-----------------|---|---|----------------------------------|
| Habitat Creation | | | | | | |
| A/B | Other neutral grassland | 16.097 | Moderate | Grassland creation in the northern half of field (minus area for existing weather station). | Seeded with Emorsgate EM10 tussocky meadow mixture, or similar. Condition expected to reach: Moderate. Criteria to pass: A, B, D Criteria to fail on a precautionary basis: C, E, F | 5 |
| C | Modified grassland | 4.96 | Poor | Grassland creation underneath the solar panels in south of Site, estimated 48% of total solar array area within perimeter fencing. | Seeded with Emorsgate EM3 general purpose meadow mixture or similar, so could achieve other neutral grassland, but allocated within the metric as modified grassland on a precautionary basis. Condition expected to reach: POOR on a precautionary basis. Criteria to pass: C, F, G Criteria to fail on a precautionary basis: A, B, D, E | 1 |
| C | Modified grassland | 4.96 | Moderate | Grassland creation surrounding the solar panels in south of Site, estimated 48% of total solar array area within perimeter fencing. | Seeded with Emorsgate EM3 general purpose meadow mixture or similar, so could achieve other neutral grassland, but allocated within the metric as modified grassland on a precautionary basis. Condition expected to reach: Moderate. Criteria to pass: A, C, F, G Criteria to fail on a precautionary basis: B, D, E | 4 |
| D | Other neutral grassland | 0.51 | Moderate | Wet/marshy grassland creation surrounding the ponds in the south west corner of Site. | Seeded with Emorsgate EM8 meadow mixture for wetlands, or similar. Condition expected to reach: Moderate. Criteria to pass: A, B, D Criteria to fail on a precautionary basis: C, E, F | 5 |

| Landscape Habitat Type | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Time to Target Condition (Years) |
|---|--|------------------------|-----------------|---|---|----------------------------------|
| D | Other neutral grassland | 0.18 | Moderate | Marginal vegetation/grassland around pond edge(s) in the south west corner of Site. | Condition expected to reach: Moderate. Criteria to pass: A, B, D Criteria to fail on a precautionary basis: C, E, F | 5 |
| Advanced site structure planting-planted 2022 | Modified grassland | 1.81 | Poor | Grassland around the perimeter of Site-created by 2022, at average width of 6m - follows along the canal / river public footpaths. | Condition expected to reach/maintain: POOR Criteria to pass: C, D, F, G Criteria to fail: essential criteria A, B, E | 0 |
| D | Ponds (non-priority habitat) | 0.18 | Moderate | Pond(s) in the south west corner of Site. | Condition expected to reach: MODERATE Criteria to pass: A, B, C, D, E, F, G Criteria to fail: H, I | 3 |
| D/G | Mixed scrub | 0.51 | Moderate | Mixed scrub patches around pond area and along earth bund north of solar array. | Condition expected to reach: MODERATE Criteria to pass: A, C, D, Criteria to fail: B, E | 5 |
| Advanced site structure planting-planted 2022 | Other woodland; broadleaved | 2.47 | Moderate | Woodland screening around the perimeter of Site- created during 2022, at average width of 6m - lies adjacent to the canal / river public footpaths. | Condition assessment of 2025 survey- POOR as total score of 24/39. But condition expected to reach over time with correct management: MODERATE at estimated score of 29/39. Criteria to achieve 3 points in: B, C, D, E, F, H, L, M Criteria likely to continue scoring only 1 point in: A, G, I, J, K | 12 |
| C | Artificial unvegetated, unsealed surface | 1.03 | N/A - Other | Solar access tracks, including track already created in north of Site, unsealed gravel substrate. | Condition assessment N/A. | 0 |
| C | Developed land; sealed surface | 0.48 | N/A - Other | Main solar access tracks, mostly sealed substrate. | Condition assessment N/A. | 0 |

| Landscape Habitat Type | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Time to Target Condition (Years) |
|-----------------------------|--|------------------------|-----------------|--|--|----------------------------------|
| B1/ C | Developed land; sealed surface | 0.41 | N/A - Other | Wind turbine footprint plus estimated 4% actual land take within solar array for solar panels and transformers. Built structures. | Condition assessment N/A. | 0 |
| A/B | Other neutral grassland | 1.04 | Moderate | Area of wader scrapes in the northern half of Site. Designed to hold water part of the year, so will be wet, dry (bare earth) and vegetated for parts of the year. Allocated as this habitat as considered the closest fitting category. | Condition expected to reach: Moderate. Criteria to pass: A, B, D Criteria to fail on a precautionary basis: C, E, F | 5 |
| F1/F2 | Other woodland; broadleaved | 0.6 | Moderate | Woodland screening yet to be created around Site- largely surrounding the northern and southern ends of the thin area in NE of Main Site. | Condition expected to reach over time with correct management: MODERATE at estimated score of 29/39. Criteria to achieve 3 points in: B, C, D, E, F, H, L, M Criteria likely to only score 1 point in: A, G, I, J, K | 15 |
| C | Artificial unvegetated, unsealed surface | 0.08 | N/A - Other | Raised substation area within Site comprising HV station, transformers etc, unsealed gravel substrate. | Condition assessment N/A. | 0 |
| N/A | Artificial unvegetated, unsealed surface | 0.003 | N/A - Other | Weather station in the north of the field. Not present in 2021 but present in 2025 and will remain for at least a period of 3 year so kept as retained. | Condition assessment N/A. | 0 |
| Replication of 'Flood Bund' | Other neutral grassland | 0.39 | Moderate | Earth bunds to screen the solar array, to have other neutral grassland with scattered scrub. | Seeded with Emorsgate EM10 tussocky meadow mixture, or similar. Condition expected to reach: Moderate. Criteria to pass: A, B, D Criteria to fail on a precautionary basis: C, E, F | 5 |
| Replication of 'Flood Bund' | Other neutral grassland | 0.79 | Moderate | Lower lying other neutral grassland in between the earth bunds and mixed scrub along the screening area. | Seeded with Emorsgate EM10 tussocky meadow mixture, or similar. | 5 |

| Landscape Habitat Type | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Time to Target Condition (Years) |
|---|--|------------------------|-----------------|---|---|----------------------------------|
| | | | | | Condition expected to reach: Moderate. Criteria to pass: A, B, D Criteria to fail on a precautionary basis: C, E, F | |
| | Other neutral grassland | 0.53 | Moderate | Other neutral grassland in Area F from the landscape plan- a 50/50% mosaic of mixed scrub and other neutral grassland. | Seeded with Emorsgate EM10 tussocky meadow mixture, or similar. Condition expected to reach: Moderate. Criteria to pass: A, B, D Criteria to fail on a precautionary basis: C, E, F | 5 |
| F | Mixed scrub | 0.53 | Moderate | Mixed scrub in Area F from the landscape plan- a 50/50% mosaic of mixed scrub and other neutral grassland. | Condition expected to reach: MODERATE Criteria to pass: A, C, D, Criteria to fail: B, E | 5 |
| N/A | Artificial unvegetated, unsealed surface | 0.1147 | N/A - Other | Small strip on the easternmost extent of the North Eastern Cable Route. Baseline habitat was modified grassland in good condition, unable to be classed as a temporary impact as takes longer than 2 years to reach same habitat and condition. | Allocated as urban ground post development so this area is not subject to a HMP/LEMP. Condition assessment N/A. | 0 |
| Advanced site structure planting-planted 2022 | Species-rich native hedgerow | 1.32 | Moderate | Native hedgerow screening around the perimeter of Site- created during 2022, at average width of 0.5m - lies inside the woodland screening. | Condition assessment of 2025 survey- POOR Criteria passed: B1, D1 Criteria failed: A1, A2, B2, C1, C2, D2 But condition expected to reach over time with correct management: MODERATE Criteria to pass: A1, B1, C1, D1, D2 Criteria likely to fail on precautionary approach: A2, B2, C2 | 2 |
| N/A | Species-rich native hedgerow | 0.48 | Moderate | Proposed native hedgerow screening around the solar array. | Condition expected to reach over time with correct management: MODERATE | 5 |

| Landscape Habitat Type | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Time to Target Condition (Years) |
|----------------------------|--------------------------|------------------------|-----------------|---|---|----------------------------------|
| | | | | | Criteria to pass: A1, B1, C1, D1, D2 Criteria likely to fail on precautionary approach: A2, B2, C2 | |
| N/A | Native hedgerow | 0.0025 | Moderate | NORTHERN CABLE ROUTE- Small section of beech hedgerow re-instated after cable has been installed. | To achieve the same condition assessment as it is present day: MODERATE. Criteria to pass: A2, B2, C2, D1, D2 Criteria to fail: A2, B1, C1 | 5 |
| E2 | Ditches | 0.31 | Poor | New ditch dug in the south of Site, largely dug in 2023, with a smaller extension dug in 2024 so created 2 years in advance. Classed as created as this feature was not present within original 2021 habitats baseline. | Condition assessment as of 2025: POOR Criteria to pass: C, G, H Criteria likely to fail: A, B, D, E, F Condition assessment expected to remain at POOR on a precautionary basis. Criteria to pass: A, C, E, G, H Criteria likely to fail: B, D, F | 0 |
| Habitat Enhancement | | | | | | |
| N/A | Other rivers and streams | 1.83 | Fairly Poor | Leeds-Liverpool Canal (old branch of the River Douglas). | Condition to remain unchanged, but to be enhanced by reducing riparian encroachment on the eastern side (where RLB lies within 10m from top of banktop). Was largely arable within 10m of banktop, but semi natural habitats present within 10m post development (grassland footpath, hedgerow and woodland). Still major encroachment on western side of canal (offsite land). | 1 |
| E1 | Ditches | 0.35 | Poor | Existing ditch in the north of Site. | Condition assessment expected to remain at POOR on a precautionary approach. To be retained and enhanced post development by reducing riparian encroachment. Previous encroachment had arable managed cropland within 1.5m of ditch banktop. Post development the ditch will be surrounded by other neutral grassland, no encroachment. | 1 |

| Landscape Habitat Type | Metric Habitat Type | Area (ha)/ Length (km) | Condition Score | Description | Justification for Condition | Time to Target Condition (Years) |
|------------------------|--------------------------|------------------------|-----------------|---|---|----------------------------------|
| N/A | Other rivers and streams | 0.54 | Moderate | River Douglas- northern section 1. Condition and watercourse encroachment to remain unchanged. | To be enhanced by reducing riparian encroachment on the western side (where RLB lies within 10m from top of banktop). Encroachment from Major/No encroachment to No Encroachment/No Encroachment as post development plan has grassland/hedgerow/woodland planting within 10m. | 1 |
| N/A | Other rivers and streams | 0.74 | Fairly Poor | River Douglas- southern section 2. Condition and watercourse encroachment to remain unchanged. | To be enhanced by reducing riparian encroachment on the western side (where RLB lies within 10m from top of banktop). Encroachment from Major/No encroachment to No Encroachment/No Encroachment as post development plan has grassland/hedgerow/woodland planting within 10m. | 1 |
| N/A | Ditches | 0.35 | Moderate | Existing drainage ditch along the south eastern boundary of Site. Not within Site but RLB within 5m of bank top so included in metric. | Condition and watercourse encroachment to remain unchanged, but to be enhanced by reducing riparian encroachment on the western side (where RLB lies within 5m from top of banktop). Was arable within 5m of banktop, but grassland will be present within 5m post development (grassland footpath). | 1 |
| N/A | Ditches | 0.17 | Moderate | Existing drainage ditch along the northern boundary of Red Bridge Farm and on the western half of the southern Main Site boundary. Not within Site but RLB within 5m of bank top so included in metric. | Condition and watercourse encroachment to remain unchanged, but to be enhanced by reducing riparian encroachment on the northern side (where RLB lies within 5m from top of banktop). Was arable within 5m of banktop, but grassland will be present within 5m post development (grassland footpath). | 1 |

5 GOOD PRACTICE PRINCIPLES

5.1.1 **Table 5.1** below outlines how the development has adhered to each of the ten biodiversity net gain good practice principles for development¹⁸.

Table 5.1: Biodiversity Net Gain Good Practice Principles for Development

| Good Practice Principle | Justification |
|--|---|
| Apply the mitigation hierarchy | The Proposed Development is largely restricted to arable land of low biodiversity value, avoiding higher value habitats. Where impacts cannot be avoided, mitigation and compensation measures have been implemented. |
| Avoid losing biodiversity that cannot be offset by gains elsewhere | Irreplaceable habitats are not present within the Site and higher value habitats are being retained. All trading rules within the Metric are satisfied by the proposals. |
| Be inclusive and equitable | The landscape design and biodiversity net gain proposals have been prepared in consultation with relevant stakeholders and the LPA. |
| Address risks | A Landscape and Ecology Management Plan (LEMP) / Habitat Management and Monitoring Plan (HMMP) will be conditioned. The LEMP/HMMP will ensure habitats are managed appropriately to achieve a biodiversity net gain, including contingency measures in the event that the target habitat or condition is not met. The management plan should require habitats to be maintained for at least 30 years. |
| Make a measurable biodiversity net gain contribution | Created habitats are of a higher value and will provide enhanced opportunities for a range of species. The proposals deliver a measurable biodiversity net gain, well in excess of the minimum required 10%. |
| Achieve the best outcomes for biodiversity | The biodiversity net gain design satisfies all trading rules, requiring compensation to be like-for-like or like-for-better. All compensation will be undertaken within Site. Created habitats are of a higher value and will benefit a range of species. |
| Be additional | Post development gains for all units far exceed the mandatory, minimum required 10%. This is particularly true for area and linear based units, scoring over 170% and 160% biodiversity net gain respectively. |
| Create a net gain legacy | Delivering biodiversity net gains within the proposed energy park will provide renewable, green energy as well as providing benefits to Site biodiversity, a range of species and local people who use the Main Site public footpaths around the perimeters. The management plan will cover a period of at least 30 years. |
| Optimise sustainability | The development will deliver a biodiversity net gain that not only benefits biodiversity and a range of species across the Site, but also serves to generate renewable green energy. |
| Be transparent | The BNG approach has been communicated at early stages of the development, including liaison with the LPA to agree on advance planting measures. Biodiversity net gains have been communicated clearly within this document and will be available for all stakeholders to comment upon through the planning process. All assumptions and limitations to the assessment have been outlined within this document. |

¹⁸ <https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf>

6 DISCUSSION

- 6.1.1 The Site baseline generates 77.93 area-based biodiversity units, with proposed habitat creation generating 212.92 units. Post-development, the Site generates a total of 214.34 area-based biodiversity units, equivalent to a net gain of **+175.05%**, well in excess of the mandatory, minimum required 10%.
- 6.1.2 The Site baseline generates 9.21 linear units, with only 0.01 being lost for the development and proposed linear creation generating 15.01 units. Post development the Site generates a total of 24.21 linear units, equivalent to a net gain of **+162.89%**, well in excess of the mandatory, minimum required 10%.
- 6.1.3 The Site baseline generates 29.41 watercourse-based biodiversity units. Proposed habitat enhancements generate 33.24 units, with habitat creation generating a further 1.43 units. Post-development, the Site generates a total of 35.62 watercourse units, equivalent to a net gain of **+21.12%**.
- 6.1.4 However, the applicant is seeking surplus biodiversity units generated from the Proposed Development to be registered and allocated for possible future GA Petfood Partner developments, including those at Plocks Farm and Euxton Lane. The applicant welcomes liaison with the LPA and are happy to provide revised BNG figures which would separate net gains for the Proposed Development and net gains which could be used elsewhere.
- 6.1.5 No irreplaceable habitats are present on Site and the Proposed Development meets all trading principles, requiring habitats to be replaced on a like-for-like or like-for-better basis.
- 6.1.6 Through achieving a BNG, the Proposed Development adheres with policy requirements within the CBC and NPPF.
- 6.1.7 Measures relating to the creation, management and monitoring of habitats created and enhanced, as well as other biodiversity enhancement measures, will be set out within a HMMP for the Proposed Development, would be secured subject to the general biodiversity net gain condition.

FIGURE 1: UKHABS BASELINE HABITATS- 2021 MAIN SITE (IN RELATION TO 2025 SITE BOUNDARY)

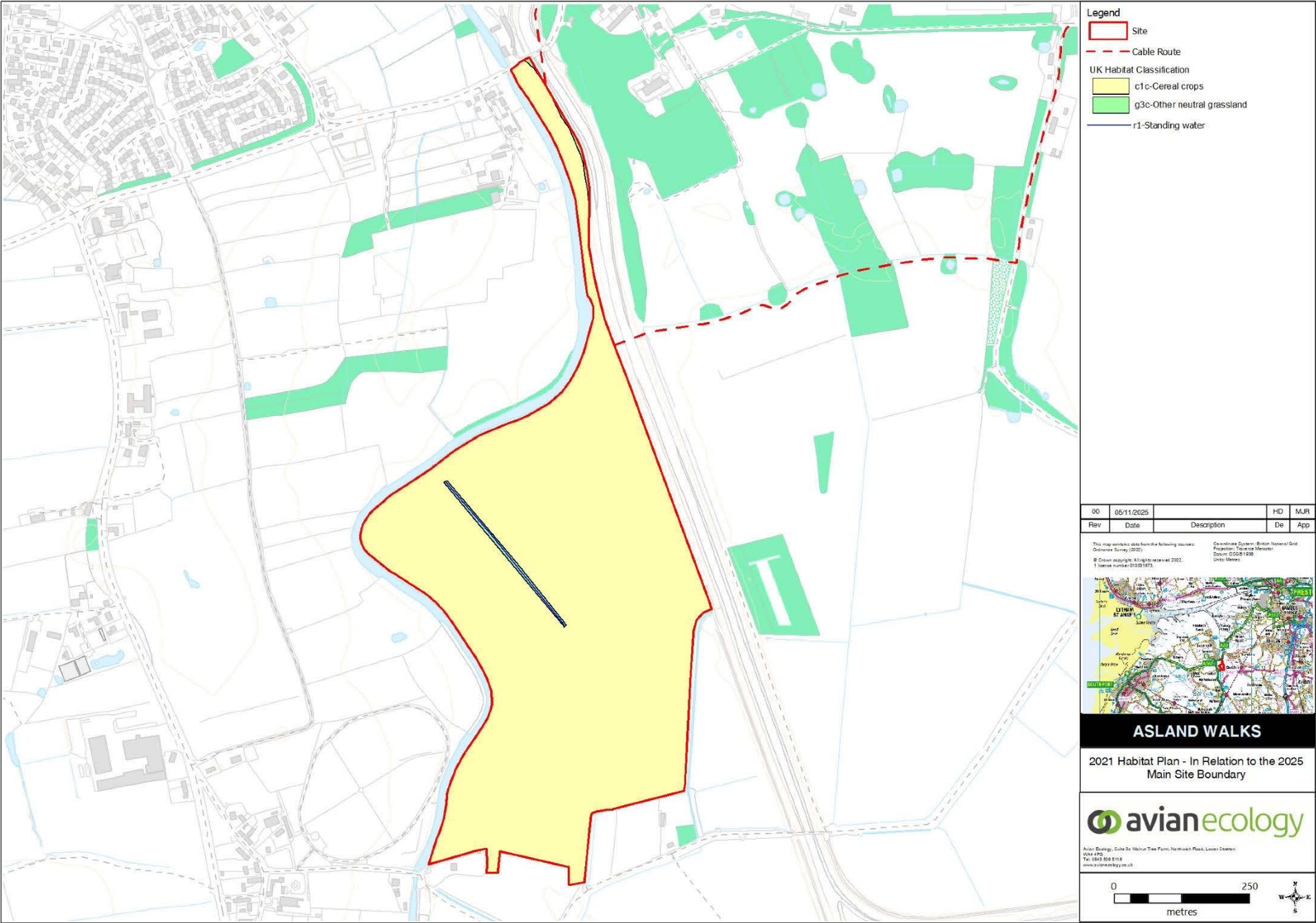
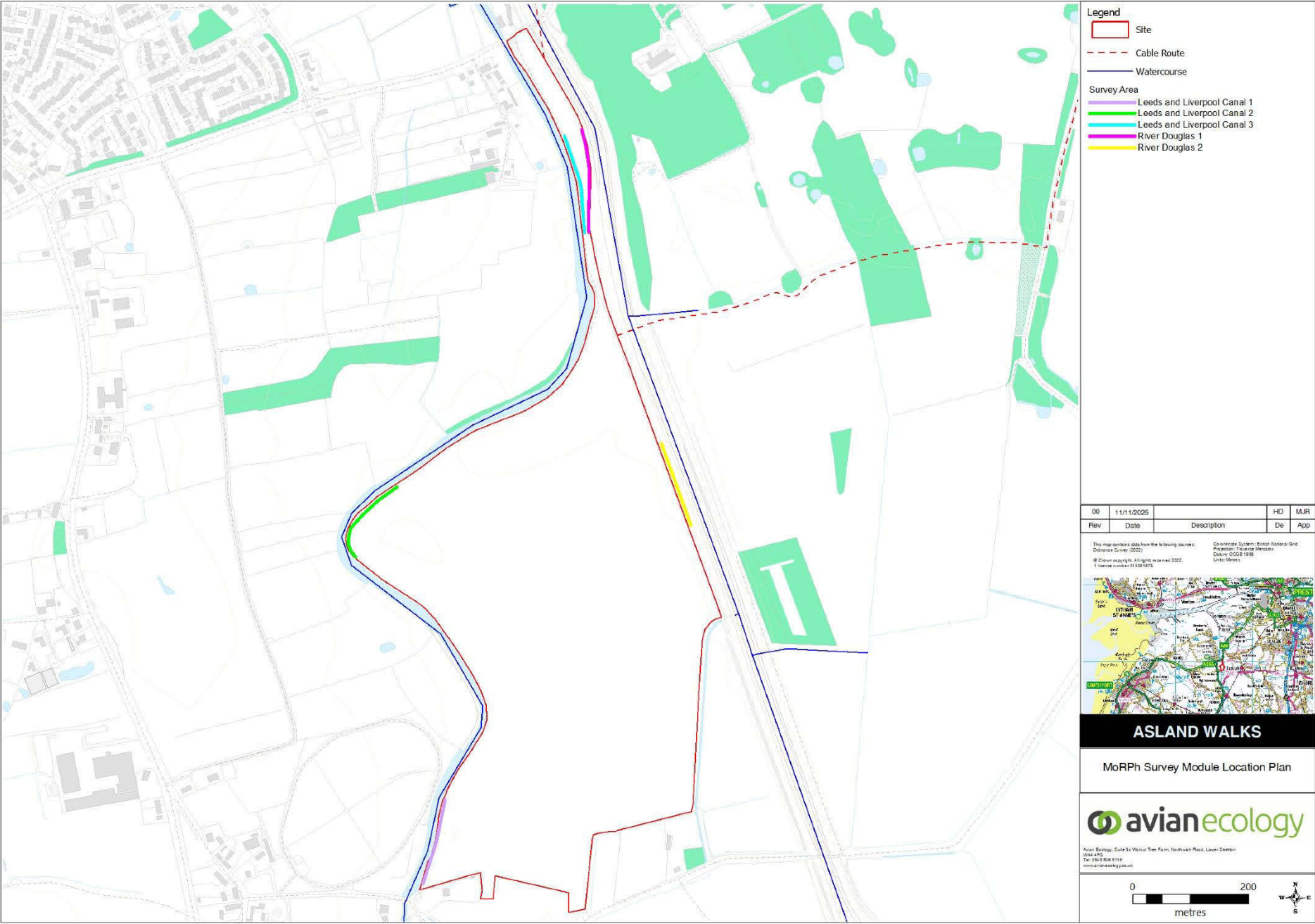
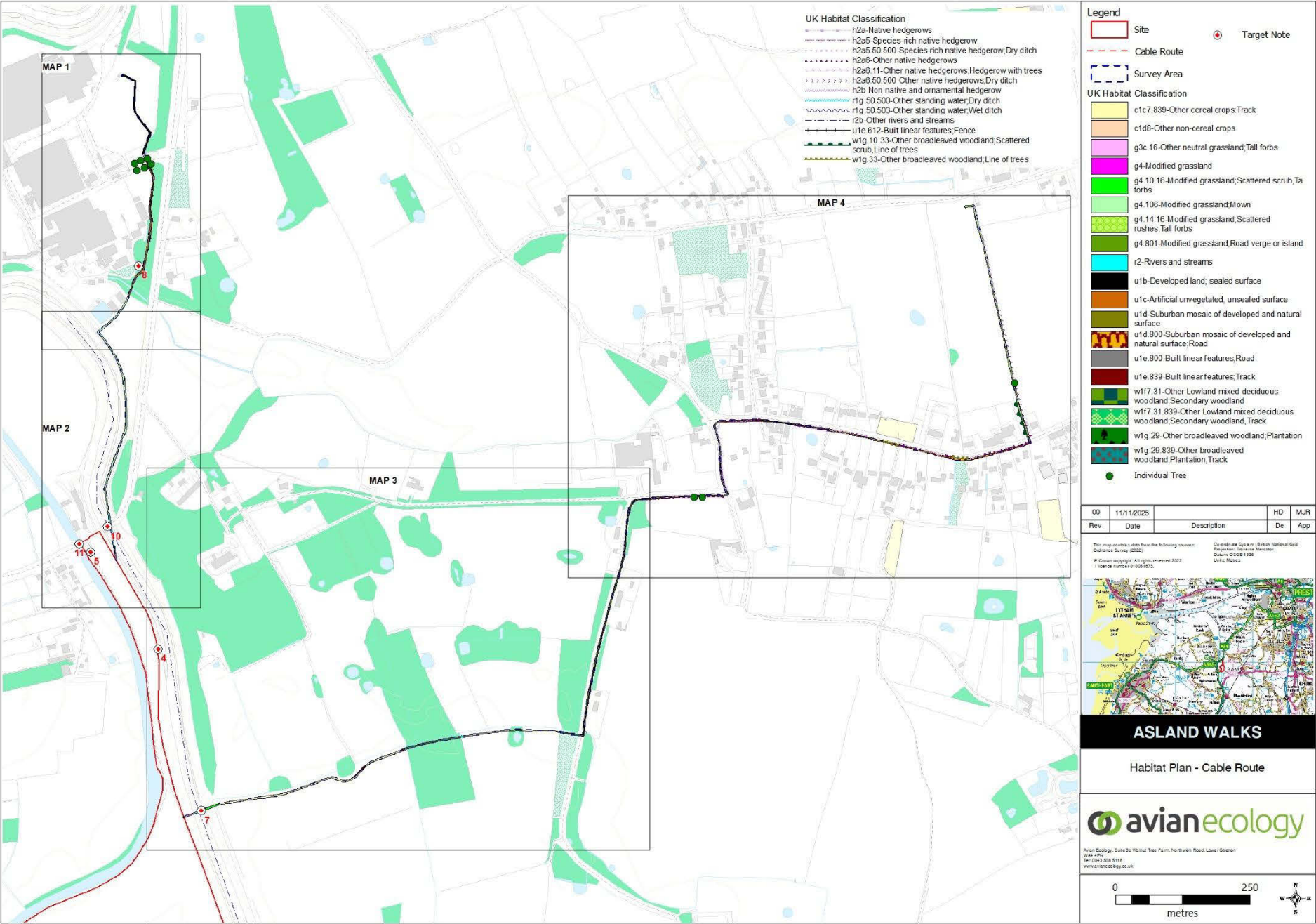


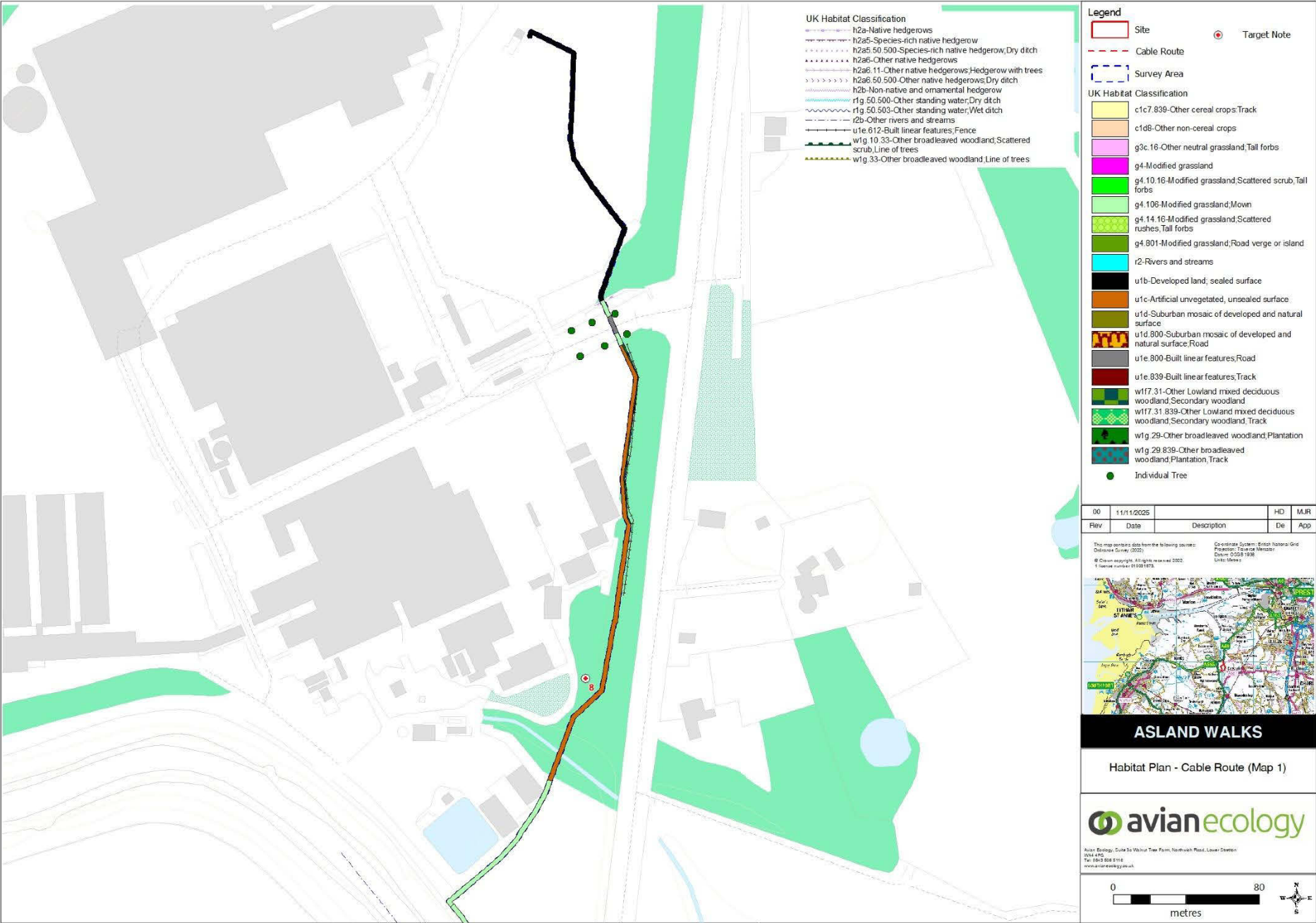
FIGURE 2: MORPH SURVEY MODULE LOCATION PLAN



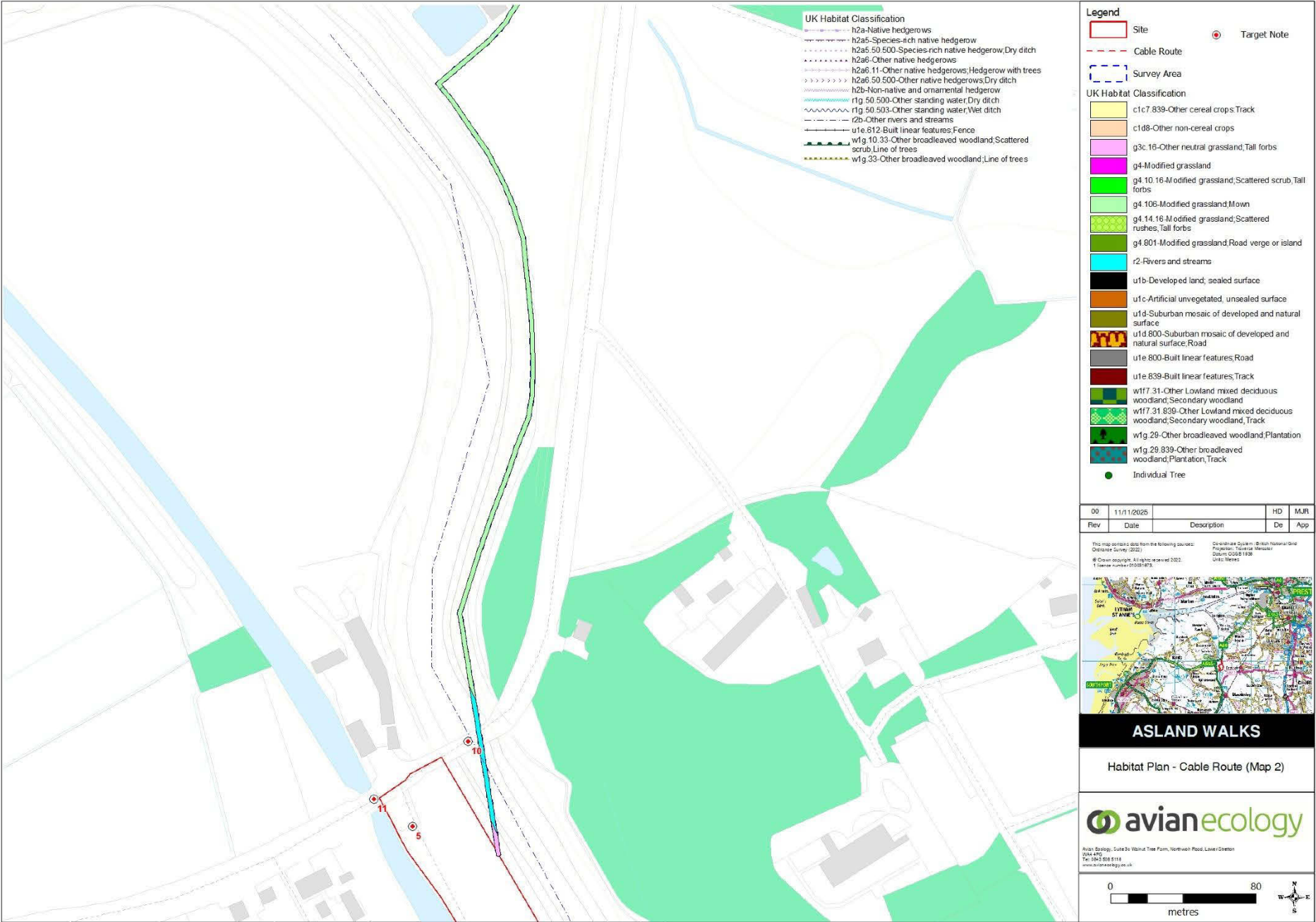
FIGURES 3A-E: BASELINE HABITATS- 2025 CABLE ROUTES



FIGURES 3A-E: BASELINE HABITATS- 2025 CABLE ROUTES



FIGURES 3A-E: BASELINE HABITATS- 2025 CABLE ROUTES



FIGURES 3A-E: BASELINE HABITATS- 2025 CABLE ROUTES



FIGURES 3A-E: BASELINE HABITATS- 2025 CABLE ROUTES

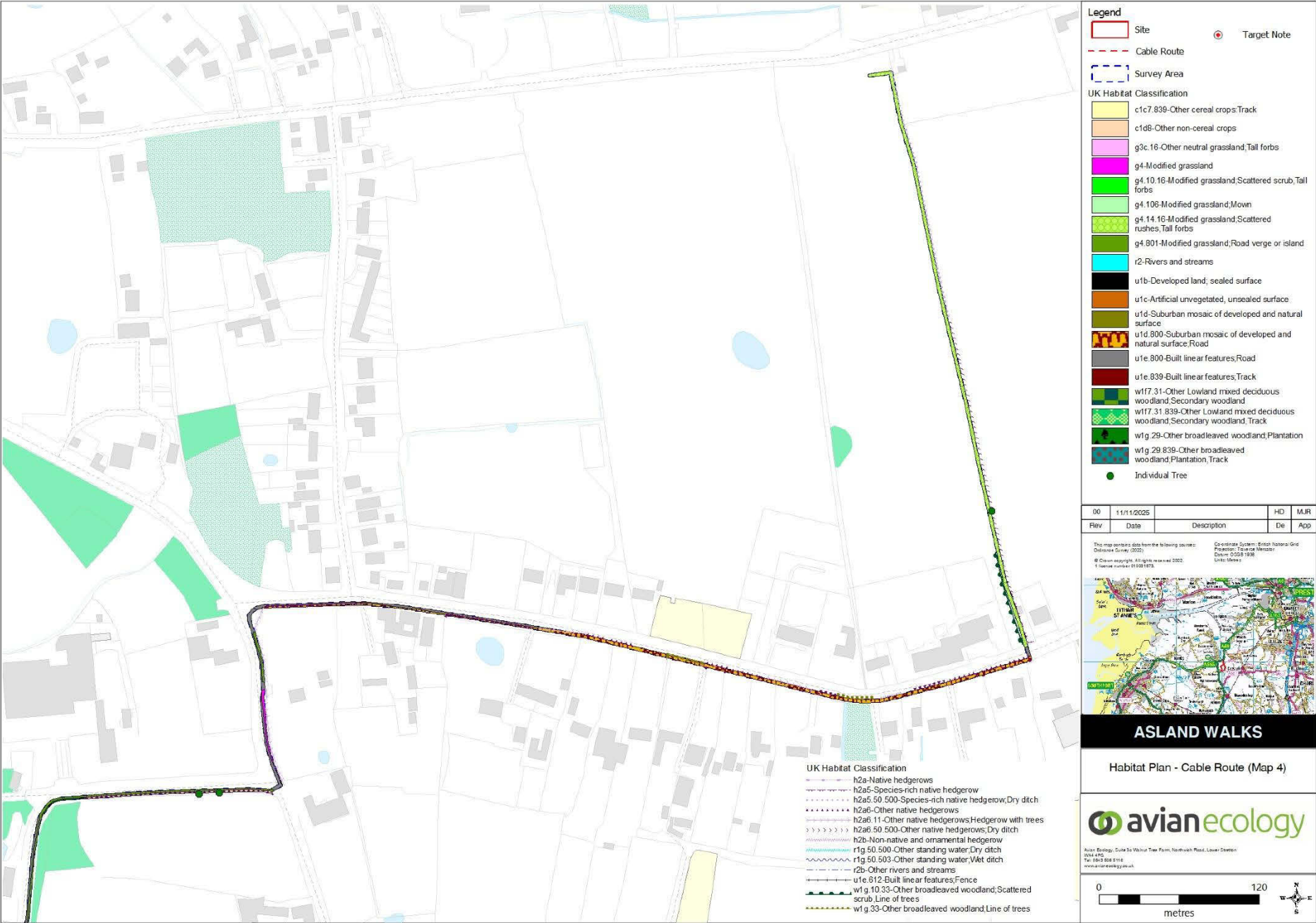
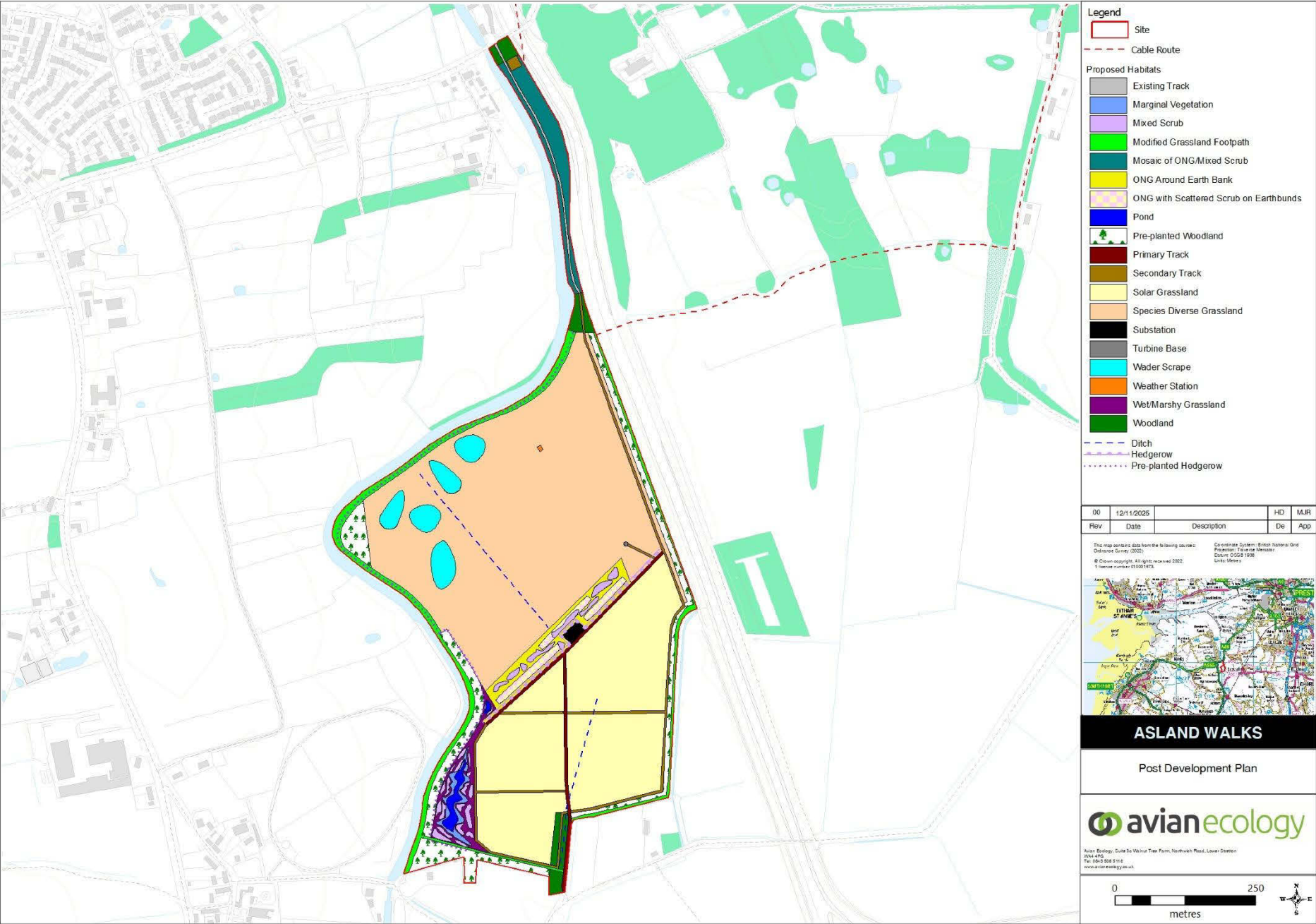


FIGURE 4: POST DEVELOPMENT HABITATS PLAN- MAIN SITE



ANNEX 1: SUMMARY OF MORPH SURVEY RESULTS

| River Type | |
|--|------|
| River Douglas | K |
| Leeds and Liverpool Canal (Rufford Branch) | K |
| Condition Thresholds - River Type K | |
| Best | 2.4 |
| Good | 1.9 |
| Fairly Good | 1.2 |
| Moderate | 0.2 |
| Fairly poor | -1 |
| Worst | -2.5 |

Key:

| |
|------------------------------|
| Positive indicator (0 to +4) |
| Negative indicator (0 to -4) |

| Assessment criteria | | Survey Reach | | | | |
|---------------------------------|-----|--------------|-------|------|------|------|
| | | RD1 | RD1.2 | LLC1 | LLC2 | LLC3 |
| Vegetation Structure | B1 | 1 | 1 | 1 | 1 | 1 |
| Tree Feature Richness | B2 | 1 | 0 | 0 | 0 | 0 |
| Water Related Features | B3 | 0 | 0 | 0 | 0 | 0 |
| NNIPS cover | B4 | 0 | 0 | -2 | 0 | 0 |
| Managed Ground Cover | B5 | -1 | 0 | -1 | -1 | -4 |
| Riparian vegetation structure | C1 | 1 | 1 | 1 | 2 | 1 |
| Tree feature richness | C2 | 0 | 0 | 0 | 1 | 1 |
| Natural bank profile extent | C3 | 2 | 2 | 3 | 2 | 2 |
| Natural bank profile richness | C4 | 1 | 1 | 2 | 3 | 4 |
| Natural bank material richness | C5 | 1 | 1 | 1 | 1 | 1 |
| Bare sediment extent | C6 | 1 | 0 | 0 | 1 | 0 |
| Artificial bank profile extent | C7 | -3 | -3 | 0 | 0 | 0 |
| Reinforcement extent | C8 | 0 | 0 | 0 | 0 | 0 |
| Reinforcement material severity | C9 | 0 | 0 | 0 | 0 | 0 |
| NNIPS cover | C10 | 0 | 0 | -3 | -4 | -4 |
| Aquatic vegetation extent | D1 | 0 | 3 | 4 | 4 | 4 |

| Assessment criteria | | Survey Reach | | | | |
|------------------------------|-----|--------------|-------------|-------------|-------------|-------------|
| | | RD1 | RD1.2 | LLC1 | LLC2 | LLC3 |
| Aquatic morphotype richness | D2 | 0 | 1 | 2 | 2 | 2 |
| Physical feature extent | D3 | 2 | 2 | 0 | 0 | 2 |
| Physical feature richness | D4 | 1 | 1 | 0 | 0 | 1 |
| Artificial features | D5 | 0 | 0 | 0 | 0 | 0 |
| Aquatic morphotype richness | E1 | 0 | 0 | 2 | 2 | 2 |
| Tree Feature Richness | E2 | 0 | 0 | 0 | 0 | 0 |
| Hydraulic feature richness | E3 | 0 | 0 | 0 | 0 | 0 |
| Natural features extent | E4 | 0 | 0 | 0 | 0 | 0 |
| Natural features richness | E5 | 0 | 0 | 0 | 0 | 0 |
| Material richness | E6 | 2 | 2 | 2 | 2 | 2 |
| Siltation | E7 | -4 | -4 | -4 | -4 | -4 |
| Reinforcement extent | E8 | 0 | 0 | 0 | 0 | 0 |
| Reinforcement severity | E9 | 0 | 0 | 0 | 0 | 0 |
| Artificial features severity | E10 | 0 | 0 | 0 | 0 | 0 |
| NNIPS extent | E11 | 0 | 0 | -2 | -2 | -3 |
| Filamentous algae extent | E12 | 0 | 0 | -3 | -3 | -2 |
| Positive Index Average | | 0.68421054 | 0.7894737 | 0.94736844 | 1.1052631 | 1.2105263 |
| Negative Index Average | | -0.61538464 | -0.53846157 | -1.1538461 | -1.0769231 | -1.3076923 |
| Condition Score | | 0.0688259 | 0.2510122 | -0.2064777 | 0.0283401 | -0.09716599 |
| Condition | | Fairly poor | Moderate | Fairly poor | Fairly poor | Fairly poor |