

## BIODIVERSITY NET GAIN ASSESSMENT

### HyNet Carbon Dioxide Pipeline DCO

Planning Act 2008

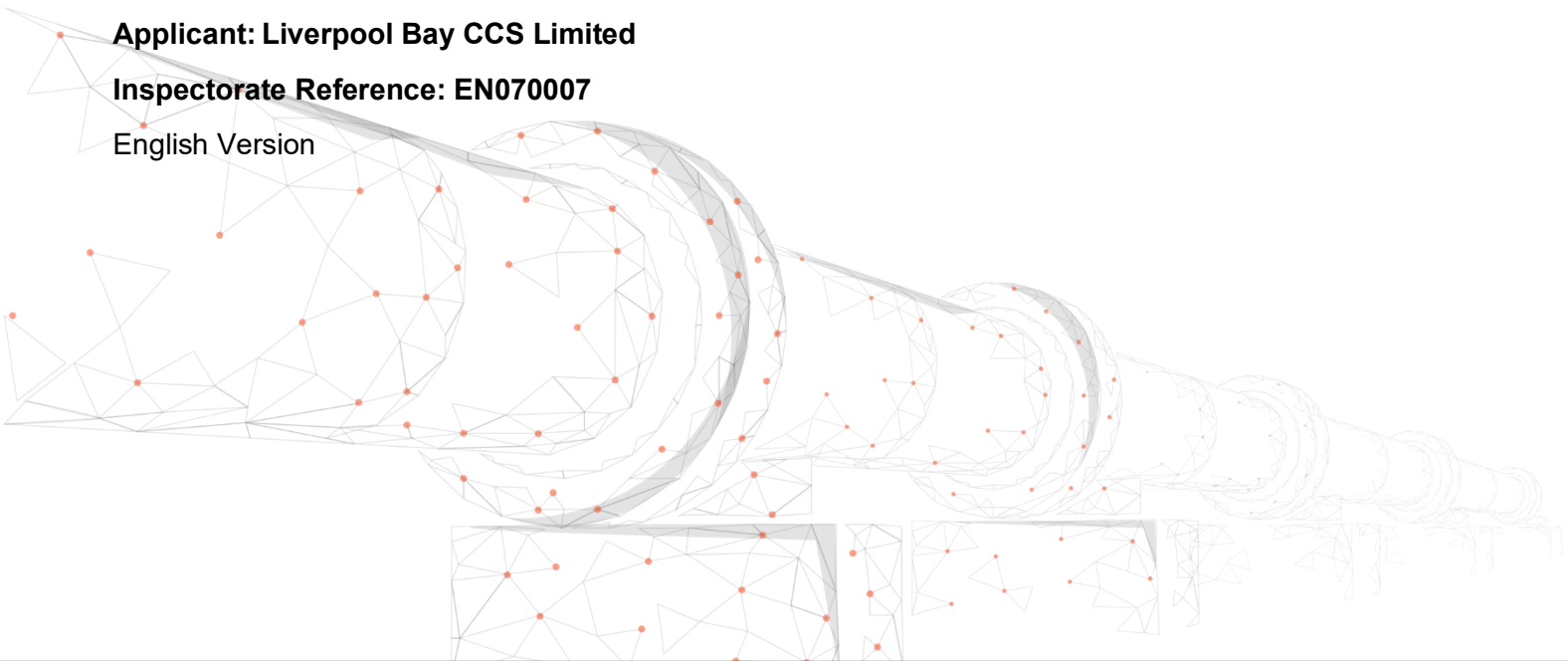
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## EXECUTIVE SUMMARY

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Biodiversity Net Gain (BNG) is the desired result of a process applied to development so that overall, there is a positive outcome for biodiversity. The process itself follows the mitigation hierarchy, which sets out that everything possible must be done to firstly avoid, secondly minimise and thirdly compensate for unavoidable impacts on or off-site. To demonstrate a positive biodiversity outcome using this process, the project is assessed against the Construction Industry Research and Information Association (CIRIA), the Chartered Institute of Ecology and Environmental Management (CIEEM), and the Institute of Environmental Management and Assessment (IEMA) Biodiversity Net Gain Good Practice Principles (hereafter referred to as ‘the BNG Good Practice Principles’).

The Applicant intends to build and operate a new underground carbon dioxide (CO<sub>2</sub>) pipeline from Cheshire, England to Flintshire, Wales with necessary Above Ground Installations (AGIs) and Block Valve Stations (BVSs). It is classed as a Nationally Significant Infrastructure Project (NSIP) and will require a Development Consent Order (DCO) under the Planning Act 2008 (‘PA2008’) granted by the Secretary of State for Business, Energy and Industrial Strategy (BEIS).

This report:

1. quantifies and compares the baseline biodiversity value of Priority Habitats and the proposed post-development biodiversity value to provide an indication of quantitative net loss, no net loss or a net gain for Priority Habitats on-site;
2. determines whether the DCO Proposed Development achieves a scheme-wide biodiversity net gain by evidencing compliance with the BNG Good Practice Principles; and
3. provides recommendations where necessary that can be implemented to promote a scheme-wide biodiversity net gain.

The aim of this assessment was to seek a minimum of 1% net gain in Priority Habitats, in line with the Natural Environment and Rural Communities (NERC) Act (2006) Section 41 (**Ref. 1**) and Section 7 of the Environment Act Wales (2016) (**Ref. 2**). This assessment therefore was undertaken considering only Priority Habitats present within the Survey Area. Non-Priority Habitats are not assessed or discussed further within this report.

The Natural England Biodiversity Metric 3.0, hereafter referred to as BM3.0, (Natural England, 2021, **Ref. 3**) has been used to quantify the biodiversity value of existing Priority Habitats present on-site and the proposed on-site retention, loss and reinstatement. The BNG assessment was applied to the ‘Survey Area’ (as referred to in this report) which is defined on **Figure 1**. The BNG assessment was undertaken separately for both the England and Wales sections of the DCO Proposed Development. Individual BM3.0 metrics were completed for each section.

The DCO Proposed Development, as assessed via this BNG assessment, currently achieves a net loss in area-based Biodiversity Units, including hedgerow and river Priority Habitats. Additional dedicated engagement with the BNG Good Practice Principles will work towards an overall positive outcome for biodiversity for the DCO Proposed Development. The Applicant is

committed to achieving at least 1% gain in Priority Habitats across the DCO Proposed Development.

The Applicant will seek to deliver this through:

- refining and therefore reducing the extent of proposed temporary impacts through detailed design;
- delivering off-site compensation to offset any remaining Biodiversity Unit deficit.

Off-site compensation scenarios have been produced in order to demonstrate indicative habitat types and areas that would be required to achieve at least 1% gain in Priority Habitats. Further enhancements will be explored that provide a greater net gain in Priority Habitats where practicable and proportionate.

BM3.0/3.1 toolkits are provided as **Annex C** separate to this report, with two for each of England and Wales (terrestrial and river). These include hypothetical compensation scenarios as outlined within this report.

Identification of offset sites is being pursued through engagement with landowners and stakeholders, using these off-site compensation scenarios based upon this BNG assessment. The Applicant intends to update this report as further progress is made throughout the DCO Application pre-examination phase, anticipated to last around 4 months from submission. The report will be updated and resubmitted to the Planning Inspectorate following confirmation of the land to be used to evidence an overall net gain position in Priority Habitats. This report will detail offset site location and relevant ecological surveys will have been undertaken, to recalculate Biodiversity Units to be delivered. Heads of terms with the relevant landowner(s) will be finalised at this point where applicable.

Additional dedicated engagement with the BNG Good Practice Principles alongside a commitment to consider the above proposals, will work towards an overall positive outcome of at least 1% for Priority Habitats for biodiversity for the DCO Proposed Development.

# 1. INTRODUCTION

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## 1.1. BACKGROUND

- 1.1.1. This Biodiversity Net Gain (BNG) Assessment has been prepared to support a Development Consent Order (DCO) Application for the construction of a new CO<sub>2</sub> pipeline (the Newbuild Carbon Dioxide Pipeline) and associated infrastructure, broadly from Stanlow, Cheshire area to a location near Flint. Additional Town and Country Planning Act (TCPA) applications will be made for proposed new and modified infrastructure associated with the underground natural gas pipelines and Point of Ayr (PoA) Terminal in Flintshire, Wales, which will be modified to operate with carbon dioxide (CO<sub>2</sub>) as part of the wider CO<sub>2</sub> pipeline transportation network and the HyNet North West Carbon Capture and Storage (CCS) Infrastructure.
- 1.1.2. The DCO Proposed Development includes installation of a Newbuild Carbon Dioxide Pipeline, six new block valve stations (BVSs) and four locations for installation of above ground infrastructure (AGIs). The majority of the DCO Proposed Development is in England, with elements located in Wales.
- 1.1.3. The 'Survey Area' considered as part of the BNG assessment for the DCO Proposed Development (**Figure 1**) comprises the Newbuild Infrastructure Boundary and includes land required on a temporary basis for construction activities, which will be reinstated following construction, and locations where there will be permanent loss associated with the new or modified infrastructure. Physical access was gained to all locations within the Survey Area unless there were specific access or health and safety restrictions.

## 1.2. ECOLOGICAL BACKGROUND

- 1.2.1. Phase 1 Habitat surveys were undertaken throughout 2020, 2021 and 2022 for the DCO Proposed Development. The habitats predominantly consisted of arable land, modified grassland, woodland and urban, developed land. Areas of scrub, neutral grassland, ponds and watercourses were also present. A small section of the DCO Proposed Development is located within the River Dee Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC).
- 1.2.2. The DCO Proposed Development is located in both England and Wales. The BNG assessment was run separately for both the English and Welsh sections in order to accurately assess the effects for the two areas individually.

- 1.2.3. While the use of a metric is not currently required through existing legislation in Wales to quantify net gain, there is a necessity to deliver evidence of providing 'net benefits' for biodiversity (Welsh Government, 2016, **Ref. 2**). Therefore, the BM3.0 was utilised as the best tool for evidencing the baseline biodiversity of the Survey Area, and for being able to show what is required to offset impacts in a quantifiable way, adopting a technical approach consistent with the English sections of the DCO Proposed Development.

### 1.3. SCOPE OF REPORT

- 1.3.1. BNG is the end result of a process applied to development so that overall, there is a positive outcome for biodiversity. The process itself follows the mitigation hierarchy, which sets out that everything possible must be done to firstly avoid, secondly minimise and thirdly restore / rehabilitate losses of biodiversity on-site. Only as a last resort, residual losses are compensated for. In addition, further enhancements can be provided using Biodiversity offsets, which are distinguished from the forms of on-site mitigation in that they fall outside of the development site and may consider further enhancement opportunities based on local Biodiversity recovery strategies and ecosystem service networks. BNG assessment reports are intended to provide a detailed insight into the adherence of a development to the BNG Good Practice Principles.
- 1.3.2. It is important to recognise that the quantification of Biodiversity Units (BU) is one of a number of factors to be considered when assessing the impact of the DCO Proposed Development on biodiversity. This BNG assessment report is focused on priority habitats. All potential impacts of the DCO Proposed Development on protected species, priority and non-priority habitats or designated sites, are dealt with within the Biodiversity Chapter of the Environmental Statement (ES) (**Chapter 9 – Biodiversity, Volume II**) following the EIA mitigation hierarchy.

### 1.4. DEVELOPMENT OF DCO BNG TARGETS

- 1.4.1. The BNG targets for the DCO Proposed Development have been developed with consideration of feedback from Statutory Consultees. Net loss calculations and net gain scenarios of 1%, 5% and 10% net gain for Priority Habitats and 'all habitats' have been developed to determine feasible net gain scenarios and these were further presented to and discussed with statutory consultees to agree an approach of BNG for Priority Habitats. This BNG assessment report

considers a minimum feasible target of 1% net gain for Priority Habitats to be applied for the DCO Proposed Development.

- 1.4.2. However, the Applicant's wishes to explore further enhancement opportunities wherever practicable and proportionate, for Priority Habitats or for a selection of Priority Habitats. It is acknowledged that there could be more difficulties with providing opportunities for creation or enhancement of linear habitats such as hedgerows or line of trees across the wider area, while opportunities for achievement of a higher percentage BNG, up to 10% net gain, across area and river habitats are expected to be more feasible and will be further discussed through consultation with landowners.

## 1.5. RELEVANT LEGISLATION, POLICY AND STRATEGY

- 1.5.1. This BNG assessment has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in England and Wales.

- UK Government's 25 Year Environmental Plan (DEFRA, 2018) **(Ref. 4)**;
- Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services (DEFRA, 2011) **(Ref. 5)**;
- The Environment Act (HMSO, 2021) **(Ref. 6)**;
- Environment (Wales) Act 2016 (Welsh Government, 2016) **(Ref. 2)**;
- Planning Policy Wales: Edition 11 (Welsh Government, 2021) **(Ref. 7)**;
- Planning Act 2008: Changes to Development Consent Orders (Department for Communities and Local Government, 2015) **(Ref. 8)**
- National Planning Policy Framework (NPPF) (DCLG, 2021) **(Ref. 9)**;
- The Natural Environment and Rural Communities (NERC) Act (HMSO, 2006) **(Ref. 1)**;
- Cheshire West and Chester Local Plan Part 1 (2015) **(Ref. 10)**, and Part Two (2019) **(Ref. 11)**; and
- Flintshire Unitary Development Plan (2011) **(Ref. 12)**.

## 2. METHODOLOGY

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### 2.1. BNG ASSESSMENT

2.1.1. This BNG assessment was undertaken with reference to the following industry recognised best practice methodologies:

- CIEEM, IEMA & CIRIA (2016). Biodiversity Net Gain Good Practice Principles for Development (**Ref. 13**);
- CIEEM, IEMA & CIRIA (2019). Biodiversity Net Gain. Good Practice Principles for Development. A Practical Guide (**Ref. 14**);
- CIEEM (2022). Welsh Government's Approach to Net Benefits for Biodiversity and the DECCA Framework in the Terrestrial Planning System. CIEEM Briefing Paper. (**Ref. 15**)
- Natural England (2021). The Biodiversity Metric 3.0 (JP039) auditing and accounting for biodiversity user guide (**Ref. 16**);
- Natural England (2021). The Biodiversity Metric 3.0 (JP039) Technical Supplement (**Ref. 17**); and
- British Standards Institute (BSI) (2021). BS8683: 2021: Process for designing and implementing Biodiversity Net Gain Specification (**Ref. 18**).

2.1.2. This report uses the Principles and BM3.0 to produce an assessment report that:

1. Establishes the total number of baseline Biodiversity Units (BU) for Priority Habitats within the Survey Area for both England and Wales. The two sections will be evaluated separately;
2. Establishes the total number of BU in Priority Habitats which will be retained, reinstated, enhanced and created under the current plans of the DCO Proposed Development;
3. Determines whether the DCO Proposed Development will result in a quantitative net loss, no net loss or a net gain for biodiversity in Priority Habitats within the Survey Area;
4. Determines whether the DCO Proposed Development achieves a net gain for biodiversity in Priority Habitats within either the England or Wales section of the DCO Proposed Development, by evidencing compliance with the BNG Good Practice Principles; and
5. Provides recommendations to help inform the landscape plan for the DCO Proposed Development, or the



creation/enhancement of off-site habitats, to work towards achieving net gain.

- 2.1.3. Strategic significance refers to another attribute within BM3.0 which factors in the spatial context of each habitat, and assigns a multiplier based upon whether they are in ecologically connected locations. With respect to strategic significance, the following approach has been taken to identify the relevant category for each individual habitat 'parcel' occurring within the Survey Area:

**Table 2.1 - Method for assigning strategic significance**

<b>Strategic significance</b>	<b>Method</b>
Within an area formally identified in local strategy	Habitats are assigned this category where the following criteria are met: <ul style="list-style-type: none"><li>- It is located within an area identified as a statutory designated site<sup>1</sup> or non-statutory designated site<sup>2</sup> or within a relevant local strategy<sup>3</sup> and</li><li>- Habitats are specified in relation to the identified area <i>or</i></li><li>- Where specific details on relevant habitats to the identified site are unknown, all habitats which sit within the formally identified area are assigned to this level.</li></ul>
Location ecologically desirable but not in location strategy	Professional judgement will be applied to determine if the location is deemed ecologically desirable for a particular habitat type. This decision will take account of the proximity of formally identified areas and ecological connectivity (i.e., if the habitat forms a strategic corridor) to the Site.
Area not in a local strategy	Any habitats which do not fall into either of the above categories will be assigned this level of strategic significance.

## **2.2. SOURCES OF HABITAT DATA**

- 2.2.1. The BNG assessment is informed by:

1. Field surveys were undertaken in 2020, 2021 and continued into 2022, by experienced ecologists, to provide a baseline habitat

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<sup>1</sup> To include Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar, Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNRS)

<sup>2</sup> To include Local Nature Reserves (LNRs)

database, which details habitat types present within the Survey Area, their area (ha) and their geographic distribution (**Figure 1**). Classification of habitats was undertaken using Joint Nature Conservation Committee (JNCC) Phase 1 methodology (**Ref. 19**) following best practice guidance. The JNCC habitat types were later translated into UK Habitat Classification (UKHab) (**Ref. 20**) types, using the 'G-9 Translation Phase 1' tab within the BM3.0, along with professional judgement from a suitably experienced ecologist. In BM3.0, 'distinctiveness' (referring to the relative scarcity of a habitat as well as its intrinsic value) is pre-assigned within BM3.0 for each habitat based upon the UKHab system. Where gaps were present (2.74ha, or 0.6% of the Survey Area) within the habitat data, aerial mapping and pre-classified remote sensing data was used (see **Section 2.4**).

2. Concurrently with Phase 1 Habitat surveys, the Applicant undertook a Habitat Condition Assessment (HCA) of all habitats within the Survey Area. The HCA followed conditions present in the Natural England (NE) Farm and Environment Plan (FEP) manual (**Ref. 21**), as the surveys were started during 2020 prior to the release of a condition assessment associated with the BM3.0. Where HCA data was not collected in the field at the time of survey, due to access or health and safety reasons, a retrospective HCA was undertaken (see **Section 2.4**).

- 2.2.2. The quantitative outcomes of the BNG assessment calculations can then be categorised as achieving one of the outcomes listed in **Table 2** below.

**Table 2.2 - Quantitative Outcomes of BNG Calculations**

Post-development biodiversity value	Predicted Scheme-wide outcome
Less than 100% of the baseline value	Net Loss of biodiversity
100% of baseline value	No Net Loss of biodiversity
101% or more of baseline value	Biodiversity Net Gain

- 2.2.3. The quantitative outcomes of the calculations are one component of the BNG assessment and associated BNG Good Practice Principles (**Annex A**). A BNG assessment also requires the collation of qualitative evidence on the application of the mitigation hierarchy, stakeholder engagement and post-development habitat management.

Collectively, these quantitative outcomes and qualitative evidence are used to inform the outcomes of the BNG assessment.

## 2.3. IRREPLACEABLE HABITATS AND HABITATS OF PRINCIPAL IMPORTANCE

- 2.3.1. Following best practice guidance, Baker *et al* 2019 (**Ref. 22**) irreplaceable habitats and statutory designated sites were excluded from BNG calculations. Net gain or no net loss cannot be achieved for a DCO Proposed Development as a whole if there is a negative impact on an irreplaceable habitat (see Principle two of the BNG Good Practice Principles). Where such impacts persist, bespoke mitigation measures must be agreed, but gains can still be sought and assessed for the remaining habitats. Any habitat that cannot be recreated elsewhere, within a reasonable timeframe, is considered to be an irreplaceable habitat.
- 2.3.2. Publicly available datasets for Habitats of Principal Importance (HPI) were overlaid with the Survey Area. Ancient Woodland Inventory (AWI) and statutory designated sites also were overlaid for their exclusion from the BNG assessment.
- 2.3.3. The Priority Habitat types 'Ponds (Priority Habitat)', 'Lowland mixed deciduous woodland' and 'Hedgerows (Priority Habitat)' and Priority rivers were identified within the Survey Area; no other Priority Habitats were identified.

## 2.4. ASSUMPTIONS AND LIMITATIONS

- 2.4.1. The following assumptions and limitations have been applied when using the above methodologies.

### GENERAL

- 2.4.2. Only Priority Habitats have been assessed within this assessment, reflecting the goal of achieving a feasible minimum of 1% Biodiversity net gain in Priority Habitats. The net gain approach is in line with the Natural Environment and Rural Communities (NERC) Act (2006) Section 41 (**Ref. 1**) and Section 7 of the Environment Act Wales (2016) (**Ref. 2**).
- 2.4.3. As per UKHab guidance (**Ref. 20**), all hedgerows consisting "*predominantly of at least one woody UK native species*" within the Survey Area have been considered Priority Habitats.
- 2.4.4. River habitat data to inform the river condition score have been collected by carrying out River Condition Assessment surveys on all

watercourses within the Survey Area (not deemed to be ditches or hedgerow features). As per Gurnell et al., 2020 (**Ref. 23**), baseline data has been collected for at least 20% of the length of each watercourse within the Newbuild Infrastructure Boundary. For ditches, the simple ditch survey form was completed once for each ditch within the Newbuild Infrastructure Boundary. The distinctiveness of each watercourse as a river, ditch or canal was based upon observations from a walkover survey in November 2021. For watercourses which were not accessed in November 2021, the distinctiveness was determined on site during the surveys in March and April 2022. The classification of priority habitats was informed by desk-based study, determining which rivers and streams complied with at least one of the following criteria:

- Achieving High ecological or hydromorphological status (**Ref. 24**);
- Were classed as headwaters as per Defra mapping (**Ref. 25**);
- Presence of EC Habitat Directive Annex 1 habitat (informed by fish survey data (**Appendix 9-9: Aquatic Watercourses, Volume III, Document Reference D.6.3.9.9**);
- Chalk rivers;
- Active shingle rivers;
- River Sites of Special Scientific Interest (**Ref. 26**); or
- Presence of Annex II Habitats Directive species (**Ref. 27**) (informed by fish survey data (**Appendix 9-9: Aquatic Watercourses, Volume III, Document Reference D.6.3.9.9**)).

2.4.5. BM3.0 was used to calculate the biodiversity value of terrestrial habitats, however BM3.1 was used to calculate the biodiversity value of river habitats. This was due to an error within BM3.0 which affected river calculations. It was therefore considered appropriate to use BM3.1 to produce accurate results.

2.4.6. BM3.0 (Natural England, 2021, **Ref. 3**) has been also used to quantify the biodiversity value of existing Priority Habitats present on-site and the proposed on-site retention, loss and reinstatement. The BNG assessment was applied to the 'Survey Area' (as referred to in this report) which is defined on **Figure 1**. The BNG assessment was undertaken separately for both the England and Wales sections of the DCO Proposed Development. Individual BM3.0 metrics were completed for each section.

## BASELINE BIODIVERSITY

- 2.4.7. Small gaps were present within the baseline habitat dataset, in instances where habitats were inaccessible to surveyors. For this BNG assessment, a gap analysis was undertaken, and aerial imagery was used to identify the habitats within these gaps. Due to the small number of habitats assessed via aerial imagery within the Survey Area, this assumption is not considered a significant limitation of the BNG assessment. Habitat condition was assigned retrospectively to habitat parcels assessed via aerial imagery, using the method as described below.
- 2.4.8. HCA was primarily informed by field data where possible, however, where this was not possible, and/or where HCA data was absent, the following rule was applied:
- Low distinctiveness habitats were assigned poor condition; and
  - Medium or High distinctiveness habitats were assigned moderate condition.
- 2.4.9. The River Dee and Connah's Quay Ponds and Woodlands, statutory designated sites (SAC and SSSI), are located within the footprint of the DCO Proposed Development. Due to their statutory designated status, the River Dee and Connah's Quay Ponds and Woodlands have been excluded from BNG calculations, and bespoke mitigation measures have been proposed and will be secured through the DCO Application, detailed within the ES and Habitat Regulations Assessment (HRA) for the DCO Proposed Development.
- 2.4.10. Hawarden Brook was not possible to survey due to land access restrictions. The condition of this watercourse was assumed as 'fairly poor' based on aerial imagery and condition scores of similar watercourses. Photographs have been taken for this watercourse which confirm the assumptions made from aerial imagery.

## POST-DEVELOPMENT BIODIVERSITY

- 2.4.11. For the post-development recommendations, strategic significance scores were assumed to be the same as the baseline scores, due to the same spatial context.
- 2.4.12. All habitats outside the permanent loss areas, but within the Survey Area have been classified as 'temporary loss areas', as shown in **Figure 2**. The BM3.0 considers losses to be temporary when the original baseline habitat will be recreated in the same or better condition, within two years from the date of the impact occurring (**Ref. 16**).

- 2.4.13. Due to the short-term, temporary, localised nature of the DCO Proposed Development, all habitats within permanent loss areas were considered to be completely lost and habitats within temporary loss areas were assessed using the methodology laid out in **paragraph 2.4.14.**
- 2.4.14. The Working Width for the DCO Proposed Development is expected to be maximum 32m along the Newbuild Carbon Dioxide Pipeline Route, with exceptions made for AGIs and Block Valve Stations. The Survey Area for the DCO Proposed Development extends further than this 32m buffer, to accommodate possible further refinement of the Newbuild Carbon Dioxide Pipeline Route during Detail Design. For this reason, the Survey Area contains more habitat area than the one that would be potentially affected from the DCO Proposed Development. In order to make the assessment more accurate and proportionate, the following calculation method was utilised:
1. The total area was calculated for all temporary loss areas within the Survey Area.
  2. The total area was also calculated for a 32m buffer within the temporary loss areas.
  3. The total area was then divided by the area covered by the 32m construction buffer.
  4. The result of this calculation was a ratio by which all Priority Habitats within the temporary loss areas were divided by.
  5. The resulting number was treated as the 'lost' area for that habitat. The remaining area was then treated as 'retained'.
  6. This was all calculated separately for the England and Wales sections of the DCO Proposed Development.
- 2.4.15. By using this method, the assessment produced a realistic result proportionate to likely impacts, which takes into account an average 32m corridor being affected by the DCO Proposed Development within the entire Survey Area.
- 2.4.16. All habitats considered to be 'lost' within the temporary loss areas were treated as 'reinstated' where reasonably possible. In some circumstances due to limitations from utilities etc., it will not be possible to reinstate certain habitats, and they were therefore treated as lost entirely. The habitat type 'Lowland mixed deciduous woodland' was considered unlikely to be recreated on-site without the confirmation of long-term management commitments and was

therefore conservatively treated as lost, even though the area could be replanted with a lower distinctiveness woodland or native scrub species where utilities do not allow for woodland planting.

- 2.4.17. The above assumptions, based on temporary loss areas, are considered to be a proportionate approach due to detailed construction information not being available at the time of writing. This report will be updated during the pre-examination phase, whereby any further revisions to these assumptions to reduce the extent of habitat loss will be reflected. At detailed design stage, further refinement of construction information will provide a more accurate result.
- 2.4.18. For hedgerows, an average of 13m of hedgerow length is likely to be lost from each hedgerow within the Survey Area, in order to accommodate the DCO Proposed Development. Therefore, during the assessment, 13m of each hedgerow was treated as 'lost' and then 'reinstated' within the on-site Creation tab. The remaining length of each hedgerow was treated as retained.
- 2.4.19. For the off-site compensation scenarios, a baseline habitat type of 'Developed land – sealed surface' was used in order to accurately estimate the habitat area required for Priority Habitats. It is assumed that this habitat type will be made up of 'Grassland – Modified grassland' or similar, where new Priority Habitat is proposed to be created. Due to this not being a Priority Habitat, it was therefore not included within the calculations as to remain consistent and to display clarity in the Priority Habitat results.
- 2.4.20. It is assumed that watercourses which are impacted by open cut crossing techniques and would likely return to baseline condition within 2 years only have temporary losses, and therefore no permanent loss is recorded within BM3.1. The watercourses where this is likely to occur have been based on professional judgement.
- 2.4.21. For watercourses which are not likely to return to baseline condition within 2 years a scenario test has been carried out to determine if river condition is likely to change. In situations where river condition is reduced, a length of 32m is marked as lost from the existing condition. Then, a length of watercourse, first recorded as 0m at a lower condition, is then enhanced by an additional 32m to the condition concluded in the scenario testing.
- 2.4.22. A 32m working width is assumed so any predicted losses to watercourses from open cut method would see permanent impacts recorded on a 32m stretch of the watercourse.

- 2.4.23. For watercourses where there is a permanent change to the watercourse, this is recorded as lost and then new river habitat is created at a lower condition.
- 2.4.24. At Alltami Brook a 16m working width is assumed for loss of riparian vegetation whilst 4m of permanent loss is recorded based on the maximum working width committed to in the **Register of Environmental Actions and Commitments (Document reference D.6.5.1)**. There will be additional riparian planting along East Central Drain, near Ince AGI.
- 2.4.25. The post-development condition of impacted watercourses is determined by running scenarios through Cartographer (**Ref. 28**). Actual River Condition Assessment (RCA) survey results have been manipulated to reflect what would likely be recorded in a survey post-development to derive a future condition score.



## 3. RESULTS

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### 3.1. OVERVIEW

- 3.1.1. A summary of the BNG assessment calculation quantitative outcomes is presented in the results section. Results are presented individually for both England and Wales, as separate BM3.0/3.1 toolkits were completed for each area to allow for an overall BU score to be determined for each. The separate BM3.0/3.1 toolkits are provided as **Annex C** separate to this report, with two for each of England and Wales (terrestrial and river).

### 3.2. ENGLAND

#### **Baseline Biodiversity**

- 3.2.1. The total footprint of area-based Priority Habitats within the DCO Proposed Development for England covers an area of 1.49ha with a value of 19.93 Habitat Units (HU).
- 3.2.2. The total linear hedgerow Priority Habitats within the DCO Proposed Development totalled 34.55km with a value of 279.78 Hedgerow Units (HeU).
- 3.2.3. The total linear river Priority Habitats within the DCO Proposed Development totalled 0.66km with a value of 8.25 River Units (RU).

#### **Post-Development Biodiversity**

- 3.2.4. Retained, area-based Priority Habitats totalled 0.39ha, with a value of 5.01HU. Retained linear Priority Habitat hedgerows totalled 25.59km, with a value of 211.96HeU. Retained linear river Priority Habitats totalled 0.66km, with a value of 8.25RU.
- 3.2.5. Reinstated area-based Priority Habitats totalled 0.4ha with a value of 3.36HU. Reinstated and newly created linear hedgerow Priority Habitats totalled 8.74km, with a value of 46.48HeU.

#### **Quantitative Assessment**

- 3.2.6. **Table 3.1** below summarises the current overall change in biodiversity value between the baseline and post-development.

**Table 3.1- Summary of the Quantitative BNG Assessment Results**

Habitat type	Baseline value	Post-development value	Change in units	Quantitative outcome
Area-based Priority Habitats	19.93	8.52	-11.41	<b>-57.25%</b>
Linear hedgerow Priority Habitats	279.78	258.44	-21.34	<b>-7.63%</b>
Linear river Priority Habitats	8.25	8.25	0.00	<b>0.00%</b>

**Compensation Scenario**

- 3.2.7. Using the BM3.0, a compensation scenario was run to calculate the amount of off-site created habitat that would be necessary to achieve a minimum 1% net gain in Priority Habitats. This scenario is laid out in **Table 4**, below.
- 3.2.8. The following assumptions and limitations were applied to the compensation calculations:
- This scenario involves gaining units in Priority Habitat via new creation of habitats only. It will be possible to gain required units through a blend of this and enhancement of existing Priority Habitat, or through achieving uplifts in distinctiveness of non-priority habitat to meet criteria for Priority Habitat. Under any future scenario, a greater total area of each Priority Habitat type will be created than that lost within the order limit baseline.
  - The target condition of created habitats was assumed to be Good, based on the assumption that appropriate management plans will be in place.
  - An off-site baseline habitat type of 'Developed land – sealed surface' was used due it scoring a baseline value of 0BU, this was in order to accurately estimate the habitat area required for Priority Habitats. It is assumed that this habitat type will be made up of 'Grassland – Modified grassland' or similar. Due to this not being a Priority Habitat, it was therefore not included within the calculations and instead a habitat was used that does not score biodiversity units, as to remain consistent and to display clarity in the Priority Habitat results.

- For river habitats, no Priority Habitat is lost in England, however enhancements should be implemented in order to achieve the 1% net gain targets for Priority Habitats. Assuming that no enhancements can be carried out on site, enhancements would need to be implemented off-site to offset the impacts of the development. Based on the assumptions of the development's impacts to rivers and streams, it is calculated that 0.05km of priority habitat river in England would need to be improved from Fairly Poor to Moderate (major riparian encroachment reduced to no encroachment) to achieve a minimum of 1% net gain target for Priority Habitats.
- It may be possible to achieve the river net gain targets onsite through enhancing watercourses within the Survey Area. This could include Enhanced riparian planting on Friars Park Ditch, Backford Brook and Finchetts Gutter Tributary.

**Table 3.2 - Off-site Priority Habitat Compensation Scenarios for England**

Habitat Type	Proposed Habitats	Target Condition	Area (ha) /length (km)	Units created (HU/HeU/RU)	Overall Change in Units per Habitat	Overall Percentage Change
Area-based	Ponds (Priority habitat)	Good	0.27 ha	2.72	+0.06	+1.23%
	Woodland – Lowland mixed deciduous woodland	Good	4.7 ha	8.93	+0.19	
Linear – hedgerows	Native species rich hedgerow with trees	Good	2.75 km	24.27	+2.93	+1.05%
Linear - rivers	Priority Habitat	Moderate	0.05 km	0.76	+0.42	+5.04%

### 3.3. WALES

#### **Baseline Biodiversity**

- 3.3.1. The River Dee and Connah's Quay Ponds and Woodlands SSSI (SAC and SSSI) were recorded within the DCO Proposed Development for Wales. However as previously mentioned in **Section 2.5**, were not included within BNG calculations.
- 3.3.2. The total footprint of area-based Priority Habitats within the DCO Proposed Development for Wales covers an area of 1.11ha with a value of 10.36 Habitat Units (HU).
- 3.3.3. The total linear hedgerow Priority Habitats within the DCO Proposed Development totalled 49.34km with a value of 345.60 Hedgerow Units (HeU).
- 3.3.4. The total linear river Priority Habitats within the DCO Proposed Development totalled 2.474km with a value of 32.13 River Units (RU).

#### **Post-Development Biodiversity**

- 3.3.5. Retained, area-based Priority Habitats totalled 0.34ha, with a value of 4.14HU. Retained linear Priority Habitat hedgerows totalled 36.93km, with a value of 264.34HeU. Retained linear river Priority Habitats totalled 2.458km, with a value of 31.82RU.
- 3.3.6. Reinstated linear hedgerow Priority Habitats totalled 11.81km, with a value of 57.59HeU. Reinstated linear river Priority Habitats totalled 0.004km, with a value of 0.00RU.

#### **Quantitative Assessment**

- 3.3.7. **Table 3.15** below summarises the current overall change in biodiversity value between the baseline and post-development.

**Table 3.3- Summary of the Quantitative BNG Assessment Results**

Habitat type	Baseline value	Post-development value	Change in units	Quantitative outcome
Area-based Priority Habitats	10.36	4.14	-6.22	-60.05%
Linear hedgerow Priority Habitats	345.60	321.93	-23.67	-6.85%

Habitat type	Baseline value	Post-development value	Change in units	Quantitative outcome
Linear river Priority Habitats	32.13	31.91	-0.22	-0.69%

### **Compensation Scenario**

3.3.8. Using the BM3.0, a compensation scenario was run to calculate the amount of off-site created habitat that would be necessary to achieve a minimum 1% net gain in Priority Habitats. This scenario is laid out in **Table 6**, below.

3.3.9. The following assumptions and limitations were applied to the compensation calculations:

- The target condition of created habitats was assumed to be Good, based on the assumption that appropriate management plans will be in place.
- An off-site baseline habitat type of 'Developed land – sealed surface' was used due it scoring a baseline value of 0BU, this was in order to accurately estimate the habitat area required for Priority Habitats..
- For river habitats, the DCO Proposed Development will result in a loss of priority river habitat at Alltami Brook. It is not possible to improve the condition of the Alltami Brook elsewhere within the Newbuild Infrastructure Boundary. Enhancement or creation should be focussed within the Wepre Brook WFD water body. Assuming that no enhancements can be carried out on site, enhancements would need to be implemented off-site to offset the impacts of the development and to achieve 1% net gain in priority habitats. Based on the assumptions of the development's impacts to rivers and streams, it is calculated that 0.1km of priority habitat in Wales would need to be improved from Fairly Poor to Moderate (major riparian encroachment reduced to no encroachment) to achieve a minimum of 1% net gain target for Priority Habitats.
- It may be possible to achieve the river net gain targets onsite through enhancing watercourses within the Survey Area. This could include bank top floodplain scrapes on Sealand Main Drain, and riparian enhancements along Mancot Brook and Wepre Brook, including livestock fencing, riparian planting, bank reprofiling and bed material augmentation. These opportunities are to be investigated and, where feasible, developed and secured through the examination period and detailed design.

**Table 3.4 - Off-site Priority Habitat Compensation Scenarios for Wales**

Habitat Type	Proposed Habitats	Target Condition	Area (ha) / length (km)	Units created (HU/HeU)	Overall Change in Units per Habitat	Overall Percentage Change
Area-based	Ponds (Priority habitat)	Good	0.01 ha	0.10	+0.10	+1.97%
	Woodland – Lowland mixed deciduous woodland	Good	3.33 ha	6.33	+0.10	
Linear – hedgerows	Native species rich hedgerow with trees	Good	3.1 km	27.36	+3.69	+1.07%
Linear - rivers	Priority Habitat	Moderate	0.1 km	1.52	+0.62	+1.90%

### 3.4. QUALITATIVE ASSESSMENT

- 3.4.1. **Table 7** below discusses the adherence of the DCO Proposed Development to each of the BNG Good Practice Principles. Adherence of the DCO Proposed Development to these BNG Good Practice Principles is based on the current stage of the BNG process. These BNG Good Practice Principles have been assessed against the Priority Habitats of the DCO Proposed Development only.



**Table 3.5 - Summary of the Qualitative BNG Assessment Results**

Principle	Description	Evidence	Current Outcome
<b>1. Apply the mitigation hierarchy</b>	Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.	The design and route of the DCO Proposed Development has been designed to avoid high value habitats wherever possible, for example by avoiding veteran trees and ancient woodland where possible. However, it has not been possible to avoid all high value habitats within the Survey Area. Where losses have been unavoidable, habitats are proposed to be reinstated like for like within 2 years of their removal. For habitats where this is not possible, and for the remaining required compensation, off-site mitigation will be sought to offset the remaining losses, on a like for like basis. Reinstatement of habitats within 2 years will depend on specific actions for each habitat which will be drawn up and adhered to as part of the Landscape and Ecological Management Plan (LEMP). These will include ground preparation, planting methodologies and initial maintenance and monitoring.	Achieved
<b>2. Avoid losing biodiversity that cannot be offset by gains elsewhere</b>	Avoid impacts on irreplaceable biodiversity – these impacts cannot be offset to achieve no net loss or net gain.	The River Dee and Connah's Quay Ponds and Woodlands, any internationally and nationally designated statutory sites, ancient woodland, and veteran trees located within the Survey Area associated with the DCO Proposed Development have been excluded from the BNG calculations. For these, a bespoke compensation has been addressed within the Environmental Impact Assessment and associated Habitat Regulations Assessment concerned with the DCO Proposed Scheme where impacts could not be avoided.	Not achieved
<b>3. Be inclusive and equitable</b>	Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to net gain. Achieve net gain in partnership with stakeholders where possible and share the benefits fairly among stakeholders.	Engagement with stakeholders has been undertaken including Natural England, Natural Resources Wales and Flintshire County Council.	Achieved
<b>4. Address risks</b>	Mitigate difficulty, uncertainty and other risks to achieving net gain. 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.	The BNG assessment has used industry recognised risk multipliers from the BM3.0 and BM3.1.	Achieved
<b>5. Make a measurable Net Gain contribution</b>	Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.	The BNG assessment does not currently achieve a quantitative net gain in area-based, hedgerow, or river habitats within England or Wales. However, <b>Sections 3.2</b> and <b>3.3</b> lay out potential off-site compensation scenarios which will be investigated further by identifying potential offset sites.	To be achieved
<b>6. Achieve the best outcomes for biodiversity</b>	Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when: <ul style="list-style-type: none"> <li>Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses;</li> <li>Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation;</li> <li>Achieving net gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels;</li> <li>Enhancing existing or creating new habitat;</li> <li>Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity.</li> </ul>	At the time of writing, this BNG assessment used the most recent data and followed a rigorous method and QA process. For area-based, hedgerow and river Priority Habitats, net gain has not yet been achieved.  During the pre-examination phase ecological surveys of identified offset sites will have occurred to collate baseline data for input into the Biodiversity Metric. An updated report will be submitted before conclusion of this phase, which will detail offset site locations, relevant surveys undertaken, as well as a recalculation of Biodiversity Units to be delivered.	To be achieved

Principle	Description	Evidence	Current Outcome
<b>7. Be additional</b>	Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e., do not deliver something that would occur anyway).	This BNG assessment does not currently achieve additionality as it does not achieve a net gain. However, if the compensation scenarios laid out in <b>Sections 3.2</b> and <b>Section 3.3</b> are followed, then additionality can be achieved. A target of at least 1% net gain in Priority Habitats has been committed to and this report will be updated with details of offsetting during the pre-examination phase of the DCO Application. Further enhancements will be explored that provide a greater net gain in Priority Habitats where practicable and proportionate.	To be achieved
<b>8. Create a Net Gain legacy</b>	<p>Ensure net gain generates long-term benefits by:</p> <ul style="list-style-type: none"> <li>Engaging stakeholders and jointly agreeing practical solutions that secure net gain in perpetuity;</li> <li>Planning for adaptive management and securing dedicated funding for long-term management;</li> <li>Designing net gain for biodiversity to be resilient to external factors, especially climate change;</li> <li>Mitigating risks from other land uses;</li> <li>Avoiding displacing harmful activities from one location to another; and</li> <li>Supporting local-level management of net gain activities.</li> </ul>	<p>At this stage of the development, detailed construction plans are not available and therefore no management plans are in place. Habitats will be reinstated where they are temporarily lost to facilitate the DCO Proposed Development in the same location that they are removed wherever possible. Where this is not possible (e.g., due to existing), woodland will be re-instated in other locations within the Newbuild Infrastructure Boundary over existing Low distinctiveness habitat, as close as possible to the location where they have been removed.</p> <p>An outline strategy for habitat management will be developed and submitted in consultation with the relevant LPAs. Following that consultation, the need for a further requirement will be reviewed.</p>	To be achieved
<b>9. Optimise sustainability</b>	Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.	<p>This BNG assessment is being used to inform the DCO Proposed Development's design to provide better outcomes for biodiversity. The designs will take into account the BNG requirements as well as sustainability requirements and aim to address the two so that they are delivered together.</p> <p>Any habitat offsetting also provides an opportunity to realise wider environmental benefits within the local area.</p>	To be achieved
<b>10. Be transparent</b>	Communicate all net gain activities in a transparent and timely manner, sharing the learning with all stakeholders.	The BNG outcome is being shared with relevant stakeholders at the appropriate time, and the results will be updated to include offset site information when available.	Achieved

## 4. CONCLUSIONS

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- 4.1.1. The DCO Proposed Development as assessed in England would result in a net loss in HU of area-based Priority Habitats, HeU, and no net loss in RU.
- 4.1.2. The DCO Proposed Development as assessed in Wales would result in a net loss in HU of area-based Priority Habitats, HeU and RU.
- 4.1.3. At the time of writing, the DCO Proposed Development has not yet achieved a quantifiable net gain against the target of at least 1% net gain in Priority Habitat.
- 4.1.4. The quantitative outcomes of the assessment are a singular element of the BNG assessment and compliance with the BNG Good Practice Principles (**Annex A**), is also discussed within **Table 7**.
- 4.1.5. The DCO Proposed Development has achieved four out of the ten BNG Good Practice Principles to date.

### DISCUSSION

- 4.1.6. A net gain in biodiversity is quantifiably achievable by implementing the following points within the next stage of development:
  - Optimising HU, HeU and RU within the Survey Area through influencing the detailed design and compensating for any residual net loss with off-site compensation. This can be achieved through the proposed compensation scenarios laid out within this report.
  - The habitats retained/reinstated and created within the Order Limits are subject to long term management and monitoring as part of the LEMP, wherever possible. Unacceptable loss of habitats are adequately mitigated / compensated for outside of the BNG process.
  - Off-site habitat creation and enhancement.
- 4.1.7. The current assessment presents modelled compensation scenarios required to achieve a minimum of 1% net gain of Priority Habitats across the DCO Proposed Development. Where proportionate and practicable, delivery of a higher net gain up to 10% on all Priority Habitats or a selection of Priority Habitats will be further explored. Identification of suitable offset sites has begun and will continue through further engagement with landowners and stakeholders. These will be further developed from the point of DCO Application submission and will be progressed through the pre-examination phase (anticipated to run for 4 months from DCO Application submission).
- 4.1.8. During the pre-examination phase ecological surveys of identified offset sites will have occurred to collate baseline data for input into the Biodiversity Metric. An updated report will be submitted before conclusion of

this phase, which will detail offset site locations, relevant surveys undertaken, as well as a recalculation of Biodiversity Units to be delivered. Heads of terms with the relevant landowner(s) will be finalised at this point where applicable.


- 4.1.9. Further to the updated report, an outline strategy will be developed and submitted in consultation with the relevant LPAs. Following that consultation, the need for a further requirement will be reviewed.

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# ANNEX A

## GOOD PRACTICE PRINCIPLES



# Biodiversity Net Gain

## Good practice principles for development

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Biodiversity Net Gain is development that leaves biodiversity in a better state than before. It is also an approach where developers work with local governments, wildlife groups, land owners and other stakeholders in order to support their priorities for nature conservation. These ten principles set out good practice for achieving Biodiversity Net Gain and must be applied all together, as one approach.

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### Principle 1. Apply the Mitigation Hierarchy

Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.

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### Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere

Avoid impacts on irreplaceable biodiversity - these impacts cannot be offset to achieve No Net Loss or Net Gain.

### Principle 3. Be inclusive and equitable

Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to Net Gain. Achieve Net Gain in partnership with stakeholders where possible, and share the benefits fairly among stakeholders.

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### Principle 4. Address risks

Mitigate difficulty, uncertainty and other risks to achieving Net Gain. 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.

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### Principle 5. Make a measurable Net Gain contribution

Achieve a measurable, overall gain<sup>1</sup> for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.

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<sup>1</sup> Net Gain has been described as a measurable target for development projects where impacts on biodiversity are outweighed by a clear mitigation hierarchy approach to first avoid and then minimise impacts, including through restoration and / or compensation. Adhering to these Net Gain principles (i.e. pursuing all principles together) will help in under-pinning good practice for achieving and sustaining Net Gain.

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**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

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**Principle 7. Be additional**

Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. do not deliver something that would occur anyway).

**Principle 8. Create a Net Gain legacy**

Ensure Net Gain generates long-term benefits by:

- Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity<sup>2</sup>
- Planning for adaptive management and securing dedicated funding for long-term management
- 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

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**Principle 9. Optimise sustainability**

Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.

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**Principle 10. Be transparent**

Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

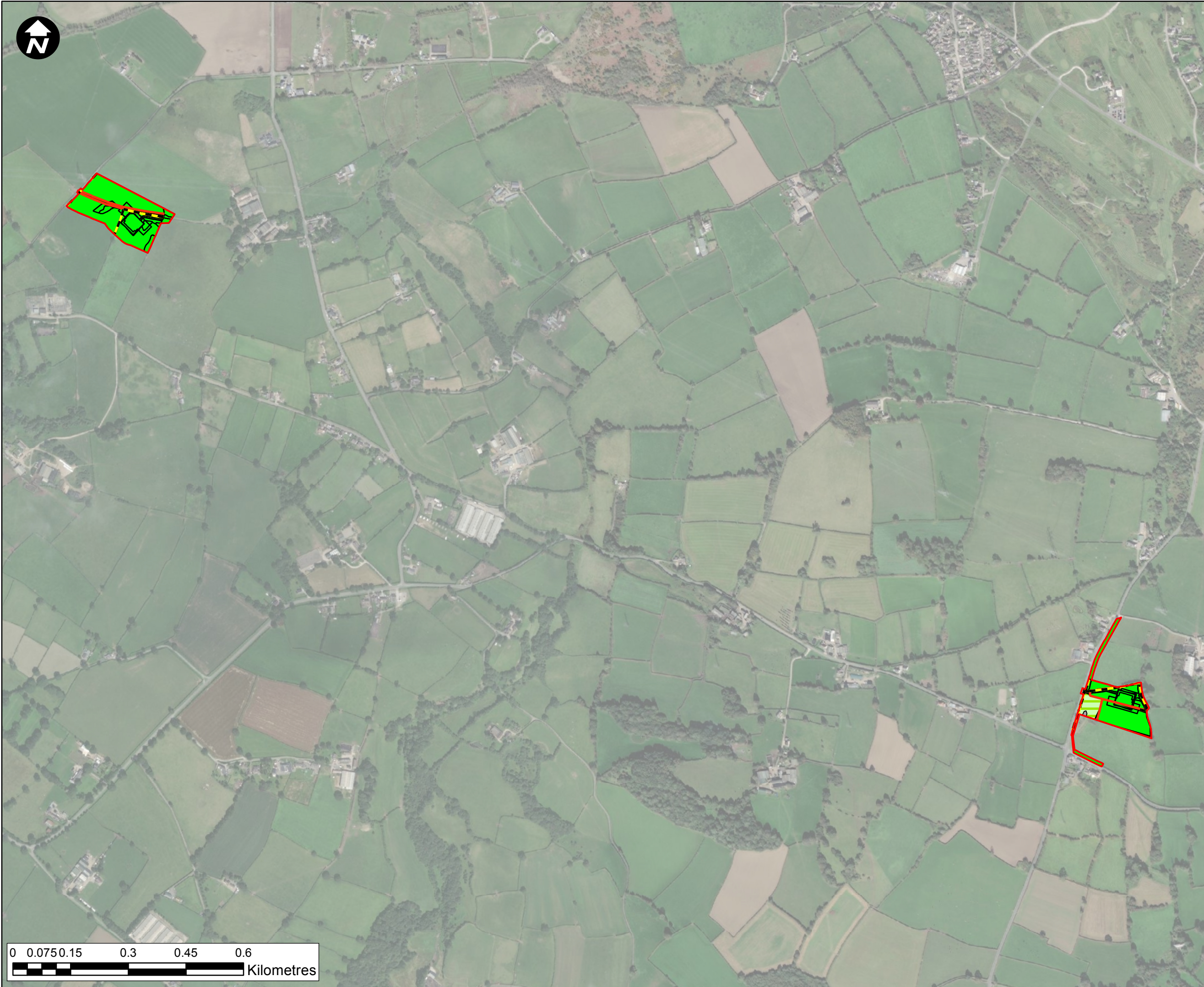
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<sup>2</sup> Biodiversity compensation should be planned for a sustained Net Gain over the longest possible timeframe. For development in the UK, the expectation is that compensation sites will be secured for at least the lifetime of the development (e.g. often 25-30 years) with the objective of Net Gain management continuing in the future.

# ANNEX B

## FIGURES





**Key:**

Survey Area

**UKHab Habitat Types**

- c1c - cereal crops
- g1c - bracken
- g3c - other neutral grassland
- g4 - modified grassland
- h3h - mixed scrub
- r1 - standing open water and canals
- s - sparsely vegetated land
- u - urban
- u1b - developed land, sealed surface
- u1c - artificial unvegetated unsealed surface
- w1f - lowland mixed deciduous woodland
- w1g - other woodland, broadleaved
- w1g6 - line of trees
- w1h - other woodland, mixed
- w2c - other coniferous woodland
- g3c - other neutral grassland
- w1g6 - line of trees
- h2 - hedgerow
- h2a - hedgerow (priority habitat)
- h2b - other hedgerows
- f2d - aquatic marginal vegetation
- u1e - built linear features
- r1e - canals or ditch

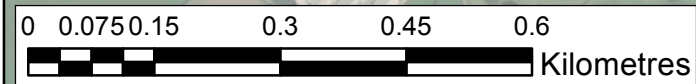
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**HyNet North West**

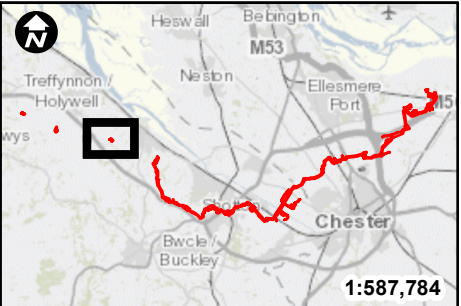
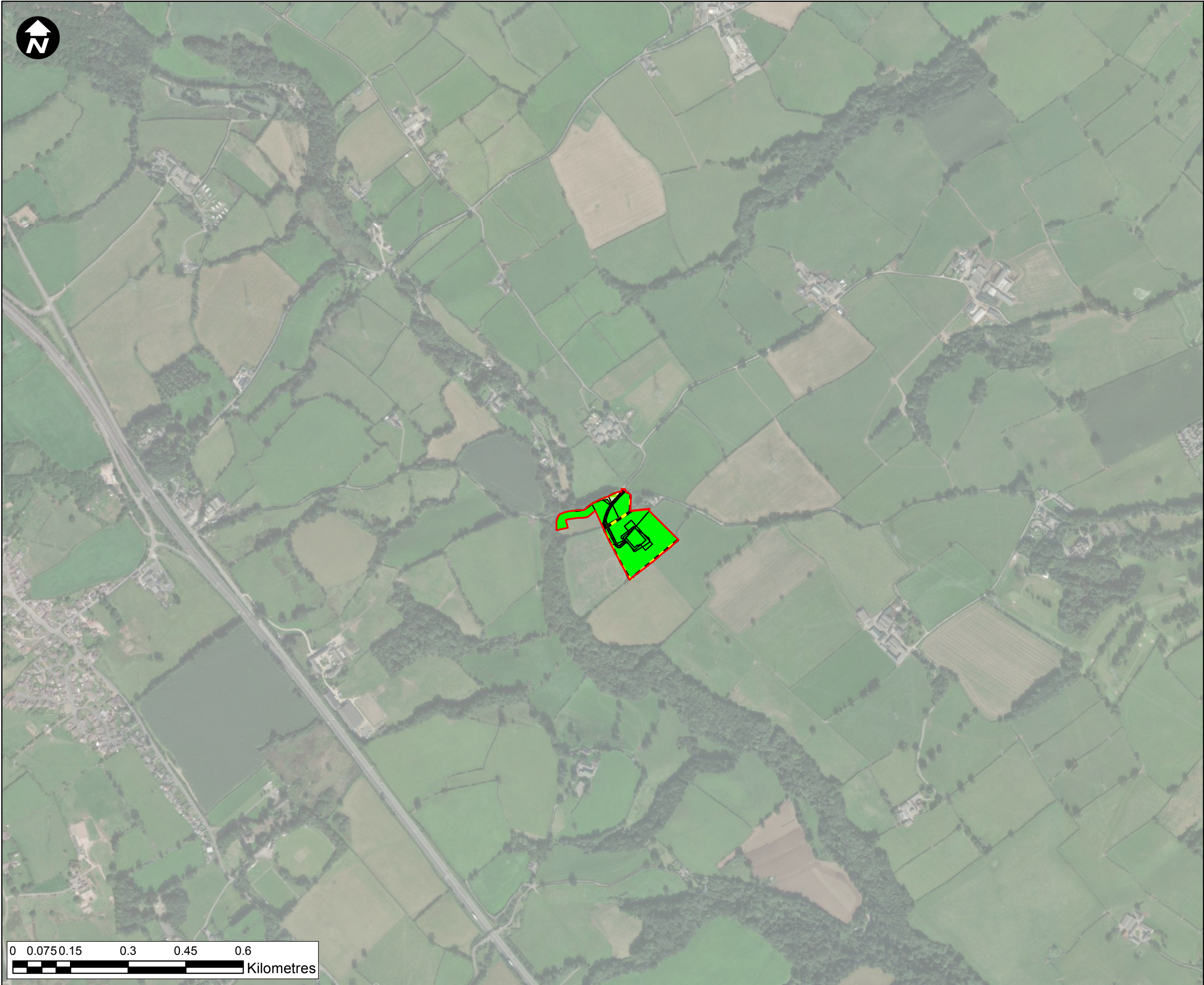
PROJECT TITLE  
**HyNet CO2 Pipeline DCO**

DRAWING TITLE  
**Figure X.X.X - Baseline Habitat Map**

DRAWING STATUS			
FOR INFORMATION			
DRAWN ST	CHECKED LH	APPROVED DC	AUTHORISED TB
SCALE @ A3 SIZE 1:9,000		DATE 07/09/2022	REVISION P01
DRAWING NUMBER EN070007-APP-ES-X.X.X Sheet 1			







**Key:**

Survey Area

**UKHab Habitat Types**

- c1c - cereal crops
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- g3c - other neutral grassland
- g4 - modified grassland
- h3h - mixed scrub
- r1 - standing open water and canals
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- u - urban
- u1b - developed land, sealed surface
- u1c - artificial unvegetated unsealed surface
- w1f - lowland mixed deciduous woodland
- w1g - other woodland, broadleaved
- w1g6 - line of trees
- w1h - other woodland, mixed
- w2c - other coniferous woodland
- g3c - other neutral grassland
- w1g6 - line of trees
- h2 - hedgerow
- h2a - hedgerow (priority habitat)
- h2b - other hedgerows
- f2d - aquatic marginal vegetation
- u1e - built linear features
- r1e - canals or ditch

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## HyNet North West

PROJECT TITLE

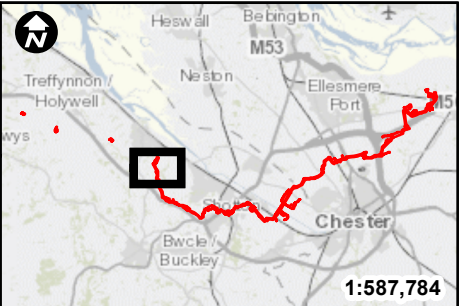
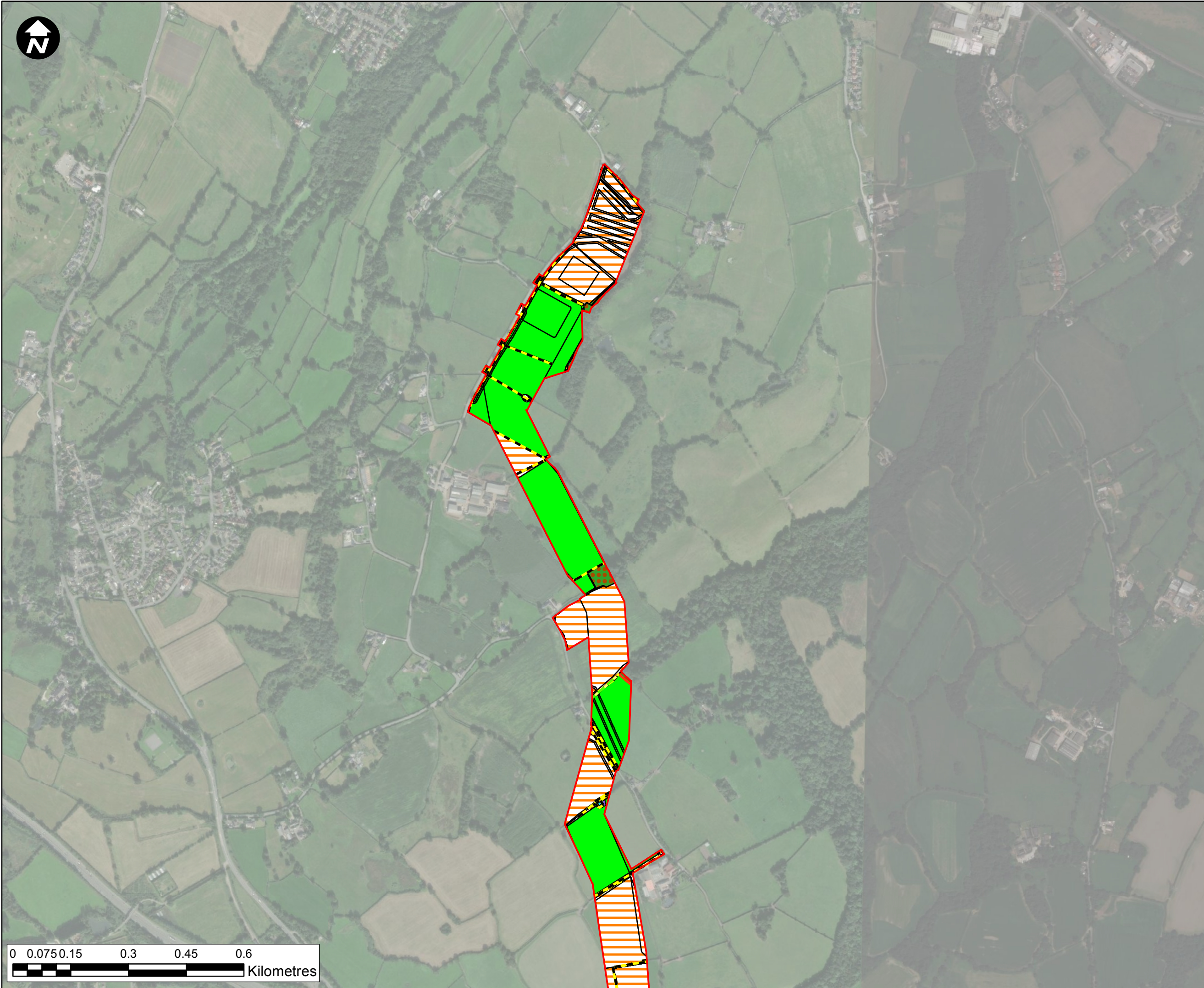
**HyNet CO2 Pipeline DCO**

DRAWING TITLE

Figure X.X.X - Baseline Habitat Map

DRAWING STATUS			
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EN070007-APP-ES-X.X.X Sheet 2			





**Key:**

	Survey Area
<b>UKHab Habitat Types</b>	
	c1c - cereal crops
	g1c - bracken
	g3c - other neutral grassland
	g4 - modified grassland
	h3h - mixed scrub
	r1 - standing open water and canals
	s - sparsely vegetated land
	u - urban
	u1b - developed land, sealed surface
	u1c - artificial unvegetated unsealed surface
	w1f - lowland mixed deciduous woodland
	w1g - other woodland, broadleaved
	w1g6 - line of trees
	w1h - other woodland, mixed
	w2c - other coniferous woodland
	g3c - other neutral grassland
	w1g6 - line of trees
	h2 - hedgerow
	h2a - hedgerow (priority habitat)
	h2b - other hedgerows
	f2d - aquatic marginal vegetation
	u1e - built linear features
	r1e - canals or ditch

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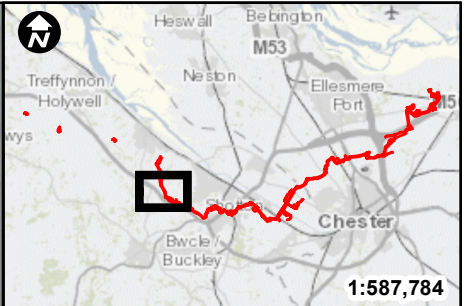
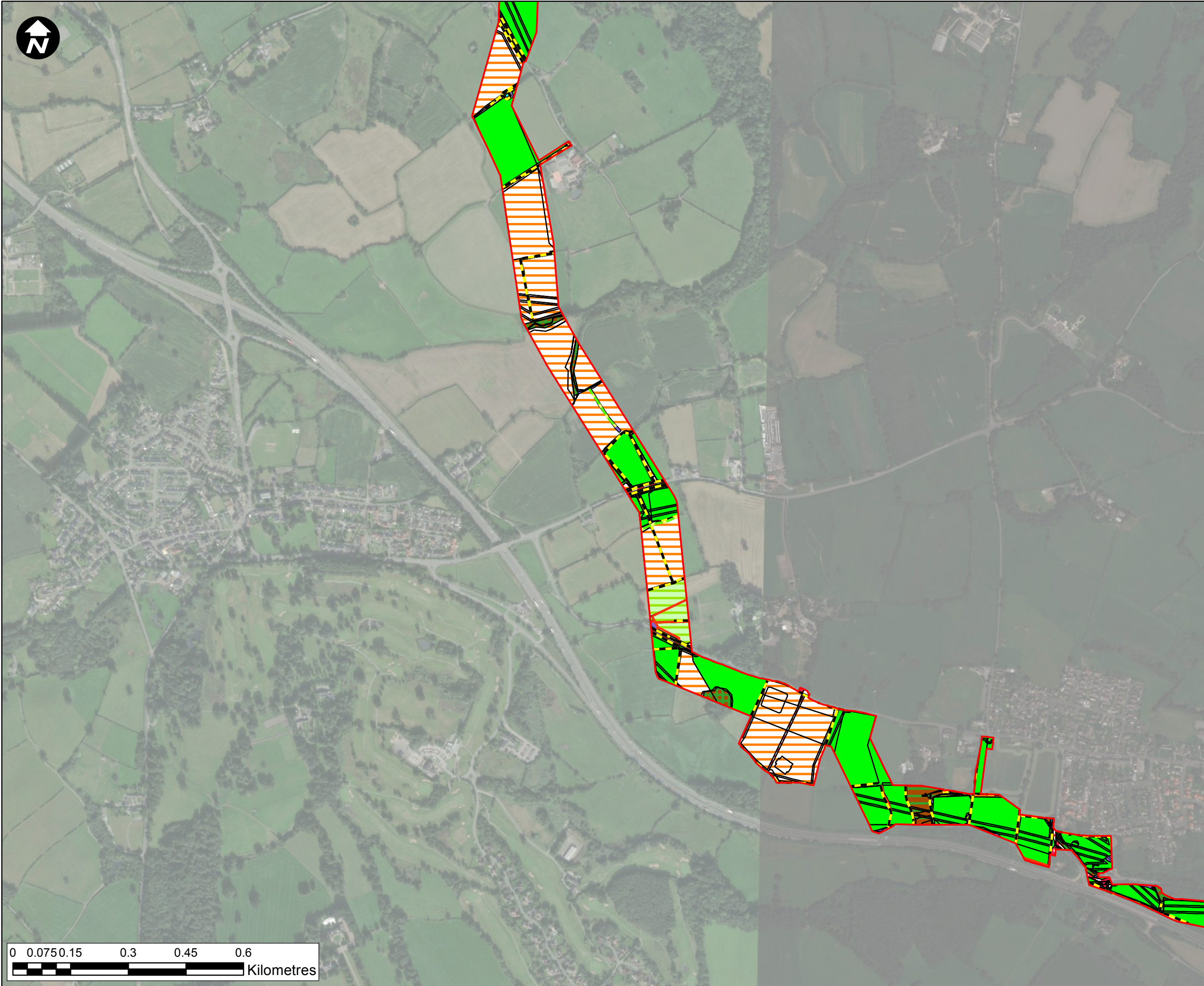
**HyNet North West**

PROJECT TITLE  
**HyNet CO2 Pipeline DCO**

DRAWING TITLE  
**Figure X.X.X - Baseline Habitat Map**

DRAWING STATUS			
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**Key:**

	Survey Area
<b>UKHab Habitat Types</b>	
	c1c - cereal crops
	g1c - bracken
	g3c - other neutral grassland
	g4 - modified grassland
	h3h - mixed scrub
	r1 - standing open water and canals
	s - sparsely vegetated land
	u - urban
	u1b - developed land, sealed surface
	u1c - artificial unvegetated unsealed surface
	w1f - lowland mixed deciduous woodland
	w1g - other woodland, broadleaved
	w1g6 - line of trees
	w1h - other woodland, mixed
	w2c - other coniferous woodland
	g3c - other neutral grassland
	w1g6 - line of trees
	h2 - hedgerow
	h2a - hedgerow (priority habitat)
	h2b - other hedgerows
	f2d - aquatic marginal vegetation
	u1e - built linear features
	r1e - canals or ditch

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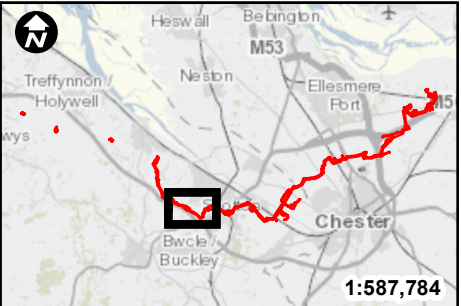
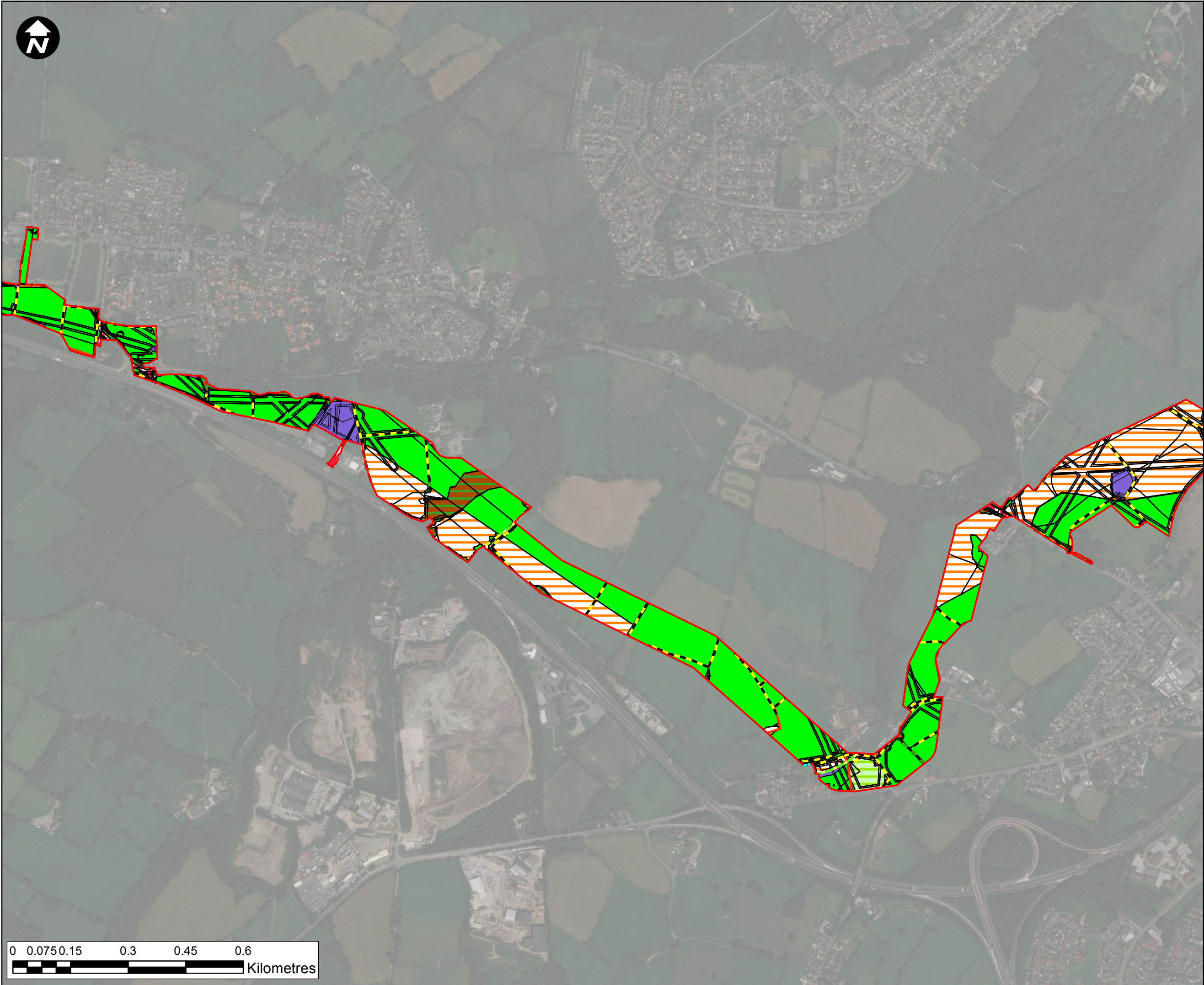
## HyNet North West

PROJECT TITLE  
**HyNet CO2 Pipeline DCO**

DRAWING TITLE  
**Figure X.X.X - Baseline Habitat Map**

DRAWING STATUS			
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SCALE @ A3 SIZE 1:9,000		DATE 07/09/2022	REVISION P01
DRAWING NUMBER EN070007-APP-ES-X.X.X Sheet 4			





<b>Key:</b>	
	Survey Area
<b>UKHab Habitat Types</b>	
	c1c - cereal crops
	g1c - bracken
	g3c - other neutral grassland
	g4 - modified grassland
	h3h - mixed scrub
	r1 - standing open water and canals
	s - sparsely vegetated land
	u - urban
	u1b - developed land, sealed surface
	u1c - artificial unvegetated unsealed surface
	w1f - lowland mixed deciduous woodland
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	w1g6 - line of trees
	w1h - other woodland, mixed
	w2c - other coniferous woodland
	g3c - other neutral grassland
	w1g6 - line of trees
	h2 - hedgerow
	h2a - hedgerow (priority habitat)
	h2b - other hedgerows
	f2d - aquatic marginal vegetation
	u1e - built linear features
	r1e - canals or ditch

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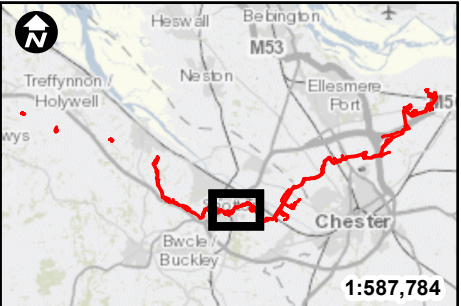
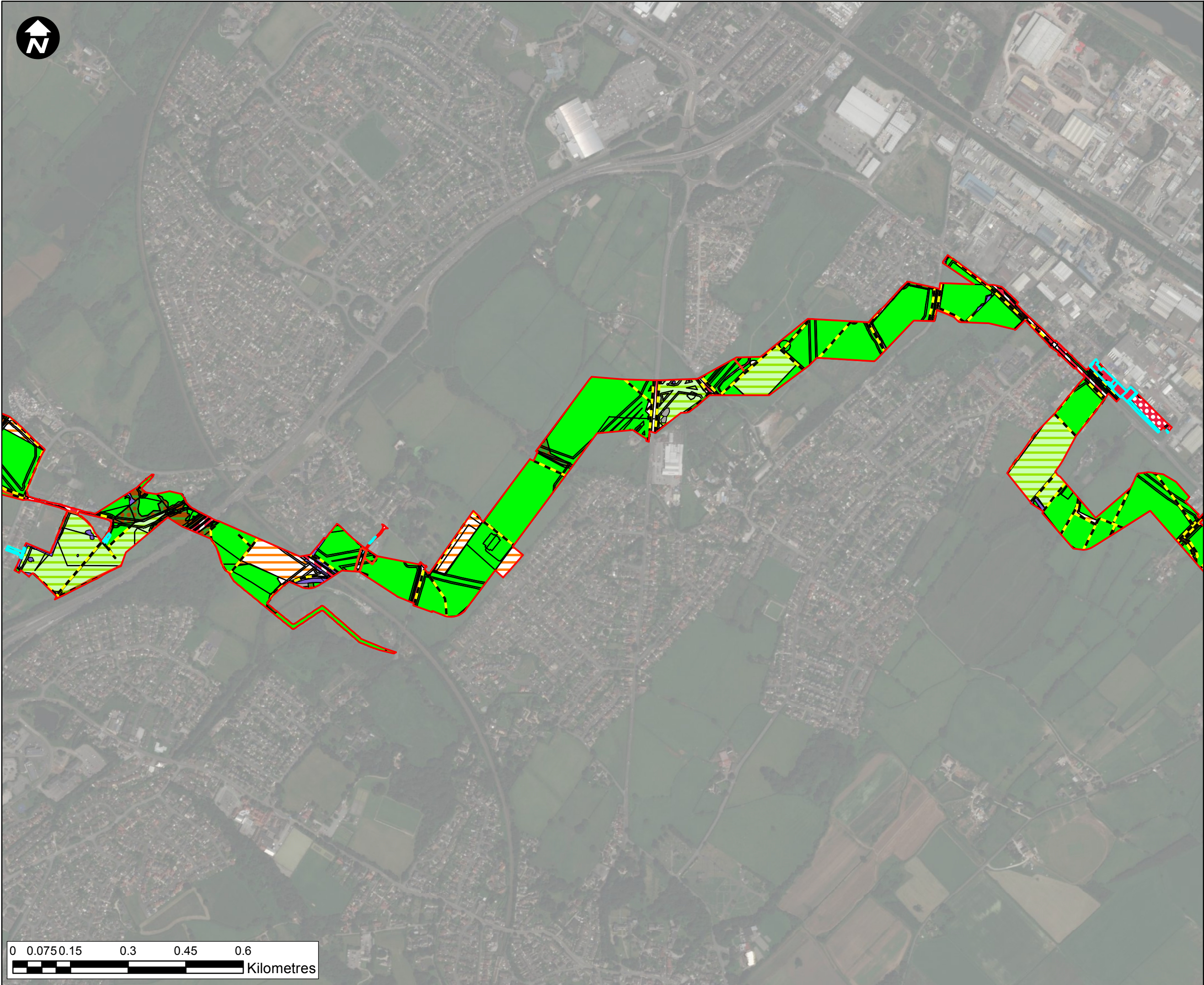
**HyNet North West**

PROJECT TITLE  
**HyNet CO2 Pipeline DCO**

DRAWING TITLE  
**Figure X.X.X - Baseline Habitat Map**

DRAWING STATUS			
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EN070007-APP-ES-X.X.X Sheet 5			





**Key:**

Survey Area

**UKHab Habitat Types**

- c1c - cereal crops
- g1c - bracken
- g3c - other neutral grassland
- g4 - modified grassland
- h3h - mixed scrub
- r1 - standing open water and canals
- s - sparsely vegetated land
- u - urban
- u1b - developed land, sealed surface
- u1c - artificial unvegetated unsealed surface
- w1f - lowland mixed deciduous woodland
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- w1g6 - line of trees
- w1h - other woodland, mixed
- w2c - other coniferous woodland
- g3c - other neutral grassland
- w1g6 - line of trees
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- h2a - hedgerow (priority habitat)
- h2b - other hedgerows
- f2d - aquatic marginal vegetation
- u1e - built linear features
- r1e - canals or ditch

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## HyNet North West

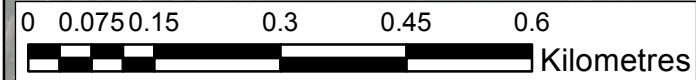
PROJECT TITLE

**HyNet CO2 Pipeline DCO**

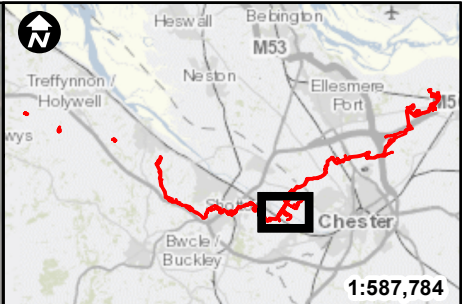
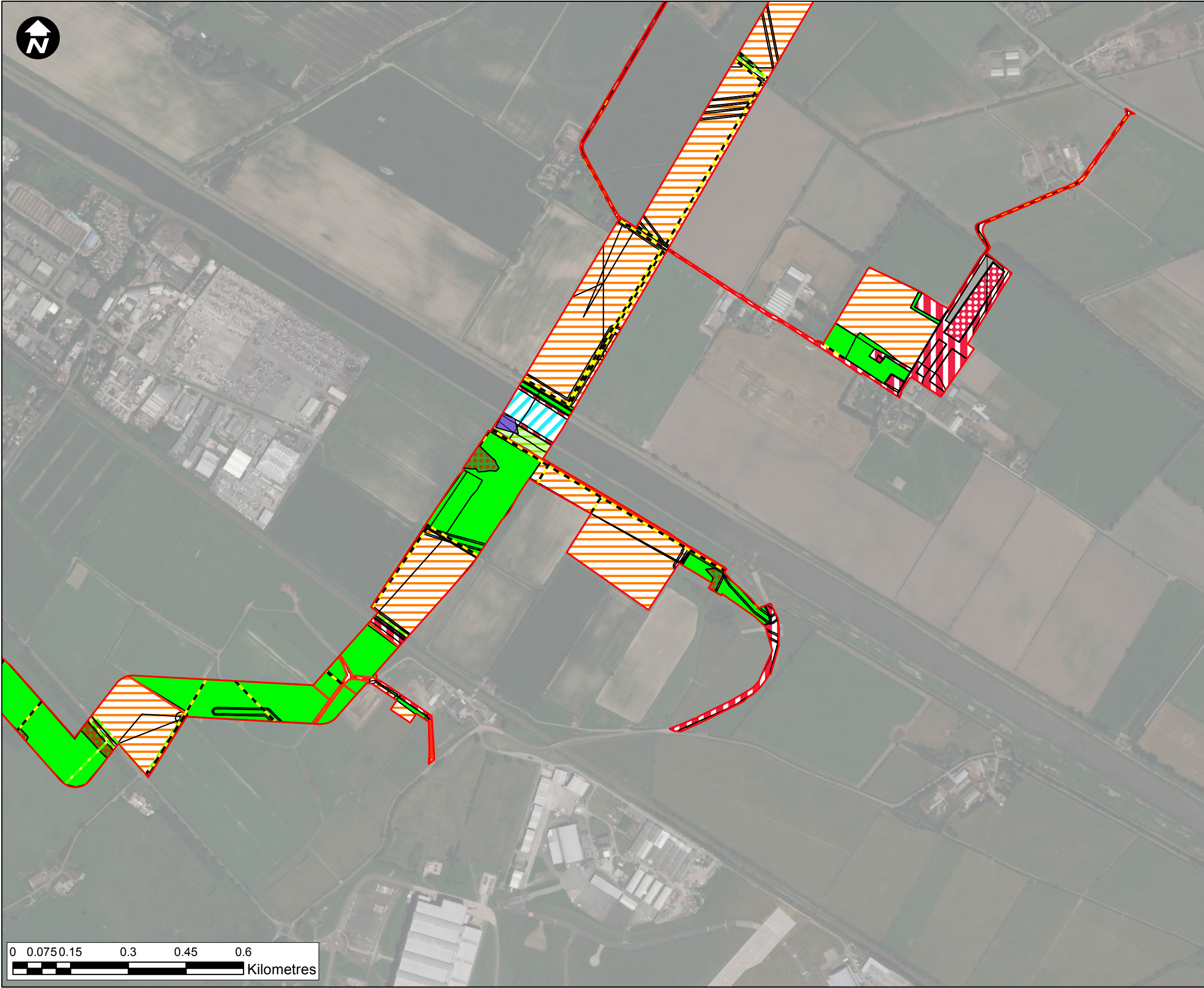
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Figure X.X.X - Baseline Habitat Map

DRAWING STATUS			
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DRAWING NUMBER			
EN070007-APP-ES-X.X.X Sheet 6			







**Key:**

**Survey Area**

**UKHab Habitat Types**

- c1c - cereal crops
- g1c - bracken
- g3c - other neutral grassland
- g4 - modified grassland
- h3h - mixed scrub
- r1 - standing open water and canals
- s - sparsely vegetated land
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- w1g6 - line of trees
- w1h - other woodland, mixed
- w2c - other coniferous woodland
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- h2a - hedgerow (priority habitat)
- h2b - other hedgerows
- f2d - aquatic marginal vegetation
- u1e - built linear features
- r1e - canals or ditch

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## HyNet North West

PROJECT TITLE

**HyNet CO2 Pipeline DCO**

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**Figure X.X.X - Baseline Habitat Map**

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SCALE @ A3 SIZE		DATE	REVISION
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DRAWING NUMBER			
EN070007-APP-ES-X.X.X Sheet 7			