

BIODIVERSITY NET GAIN ASSESSMENT

HyNet Carbon Dioxide Pipeline DCO

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 –
Regulations 5(2)(a)

Document Reference Number D.6.5.12

Applicant: Liverpool Bay CCS Limited

Inspectorate Reference: EN070007

English Version

REVISION: B

DATE: May 2023

DOCUMENT OWNER: WSP UK Ltd

PUBLIC

QUALITY CONTROL

| | | | | | |
|---------------------------|-----------------|--------------------------------|---------------|--------------|-----------------|
| Document Reference | D.6.5.12 | | | | |
| Document Owner | WSP | | | | |
| Revision | Date | Comments | Author | Check | Approver |
| A | September 2022 | Submitted with DCO Application | JG | DC | NM |
| B | May 2023 | Updated for Deadline 3 | JG | DC | DM |

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EXECUTIVE SUMMARY

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 (CO₂) 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 (‘the SoS’) for Energy Security and Net Zero (‘DESNZ’).

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 for Priority Habitats 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 Newbuild infrastructure boundary (hereby referred to as the Survey Area). Non-Priority Habitats are not assessed or discussed further within this report.

The Natural England Biodiversity Metric 3.1, hereafter referred to as BM3.1, (Natural England, 2022, **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 BM3.1 metrics were completed for each section.

Without the actions outlined in the BNG Strategy Update [**REP2-042**] and as submitted at Deadline 3, involving discussions on going with a number of key stakeholders, the DCO

Proposed Development, as assessed via this BNG assessment, currently achieves a net loss in area-based and hedgerow Priority Habitats for both England and Wales. No Priority river habitats have been identified for inclusion within the assessment for either England or Wales. The River Dee, whilst qualifying as a Priority Habitat, has been excluded due to its statutory international and national site designations (the River Dee and Bala Lake/Afon Dyfrydwy a Llyn Tegid Special Area of Conservation (SAC) and River Dee / Afon Dyfrydwy Site of Special Scientific Interest (SSSI), in line with the BNG Good Practice Principles. . 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 reducing the extent of proposed temporary impacts through detailed design; and
- 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.

BM3.1 toolkits are provided as **Annex C** separate to this report, with two for each of England and Wales. These include hypothetical compensation scenarios as outlined within this report.

Identification of offset sites is being pursued through engagement with landowners and stakeholders as summarised by the BNG Strategy Update [**REP2-042**] and as submitted at Deadline 3, using these off-site compensation scenarios based upon this BNG assessment. The Applicant intends this revision of the report as an interim update and intends to publish the final BNG report at Deadline 5. The report will be updated and resubmitted to the Planning Inspectorate following confirmation of the land or specific strategies to be used to evidence an overall net gain position in Priority Habitats. This report will detail offset site locations and relevant ecological surveys will have been undertaken, where required, 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

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 CO₂ 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 have been made for proposed new and modified infrastructure associated with the underground natural gas pipelines and Point of Ayr (PoA) Terminal in Flintshire, Wales. The PoA Terminal will be modified to operate with carbon dioxide (CO₂) as part of the wider CO₂ 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 also 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 hedgerows, 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 River Dee and Bala Lake Special Area of Conservation (SAC). The Survey Area also traverses several Local Wildlife Sites (LWS) in both England and Wales, and the Cheshire West and Chester Ecological Network covers a significant proportion of the land linking these features in England.

- 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 BM3.1 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.
- 1.3.3. This report represents an updated assessment, whereby further reductions to the extent of habitat loss has been reflected where possible. At the detailed design stage, further refinement of construction information will provide an even more accurate result.

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. These have been discussed with the project team and their proportionality reviewed in light of existing policy and legislation for both England and Wales, together with the scale and nature of likely impacts resulting from the DCO Proposed Development. This BNG assessment report considers a target of 1% net gain for Priority Habitats to be applied for the DCO Proposed Development. This approach has been presented to and agreed with statutory consultees.
- 1.4.2. However, the Applicant wishes to explore further enhancement opportunities wherever practicable and proportionate (as outlined in the BNG Strategy Update **[REP2-042]** and as submitted at Deadline 3, for Priority Habitats or for a selection of Priority Habitats. The opportunities for this will be further discussed through consultation with landowners, during the DCO examination and after its completion, during the detailed design phase.

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

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 (2022). The Biodiversity Metric 3.1 (JP039) auditing and accounting for biodiversity user guide (**Ref. 16**);
- Natural England (2022). The Biodiversity Metric 3.1 (JP039) Technical Supplement (**Ref. 17**);
- British Standards Institute (BSI) (2021). BS8683: 2021: Process for designing and implementing Biodiversity Net Gain Specification (**Ref. 18**); and
- Natural England (2010). Higher Level Stewardship, Farm Environment Plan (FEP) Manual, 3rd Edition (**Ref. 21**).

2.1.2. This report uses the Principles and BM3.1 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 lost, 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 BM3.1 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

| Strategic significance | Method |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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"> - It is located within an area identified as a statutory designated site¹ or non-statutory designated site² or within a relevant local strategy³ and - Habitats are specified in relation to the identified area <i>or</i> - 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. |
| 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. |

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

² To include Local Nature Reserves (LNRs) and Local Wildlife Sites (LWS)

³ To include strategic ecological networks where referenced within Local plans

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 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 BM3.1, along with professional judgement from a suitably experienced ecologist. In BM3.1, ‘distinctiveness’ (referring to the relative scarcity of a habitat as well as its intrinsic value) is pre-assigned 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 BM3.1. 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 (see **Section 2.4** for further details). 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 ‘Coastal Floodplain and Grazing Marsh’, ‘Ponds (Priority Habitat)’, ‘Lowland mixed deciduous woodland’, and ‘Hedgerows (Priority Habitat)’ were identified from public data sets within the Survey Area; no other Priority Habitats were identified.
- 2.3.4. No Priority River habitats have been identified for inclusion within the assessment for either England or Wales. The River Dee had been incorrectly included within the original version of metric, assessment and report [**APP-231**] at DCO submission. This has been addressed appropriately within this version of the report. The River Dee, whilst qualifying as a Priority Habitat, has been excluded from the metric calculations and reporting due to its statutory international and national site designations (the River Dee and Bala Lake/Afon Dyfrydwy a Llyn Tegid SAC and River Dee / Afon Dyfrydwy Site of Special Scientific Interest (SSSI)). This approach is in accordance with the BNG Good Practice Principles for Development (**Ref. 22**) and BNG’s non-application to statutory designated sites.

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 minimum 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 (see paragraph 2.3.3 above).

2.4.5. BM3.1 (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 BM3.1 metrics were completed for each section.

BASELINE BIODIVERSITY

2.4.6. 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.

2.4.7. 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.

2.4.8. Due to their statutory designated status, the River Dee and Bala Lake has been excluded from BNG calculations, and bespoke mitigation measures have been proposed, where required, and will be secured through the DCO Application, detailed within the ES and Habitat Regulations Assessment (HRA) for the DCO Proposed Development. Connah's Quay Ponds and Woodlands SSSI is, in part, immediately adjacent to Order Limits and as such is excluded from the BNG calculations.

2.4.9. The publicly available Habitats of Principal Importance (HPI) dataset was overlaid with the Survey Area. This identified the HPI habitat 'Coastal Floodplain and Grazing Marsh' (CFGM) within the Survey Area. Following a review of desk study data and ditch networks across the Order Limits, along with consideration of the prevailing habitat and vegetation structure, CFGM status has been applied where this aligns with the CFGM HPI dataset. Specifically, where this habitat designation was overlaying a habitat parcel within the Survey Area, the following assumptions were applied:

- Where field survey data had identified a habitat as grassland or cropland habitat, it was assumed that this was confirmed to be CFGM.
- Where survey data had identified areas as habitats other than a grassland habitat type (e.g. urban – developed land or woodland), the field survey data was assumed to be most accurate and up to date and therefore CFGM was not present.

2.4.10. The publicly available HPI dataset was also used to identify HPI woodland within the Survey Area. The designation of HPI woodland was also sense-checked using field survey data. Any woodland deemed to meet criteria for HPI woodland through this field survey

sense check was assigned as lowland mixed deciduous woodland within BM3.1 and therefore assessed as a Priority habitat.

- 2.4.11. For ponds present within the Survey Area, these were assumed to all be Priority Habitat due to the assumed presence of Great Crested Newt *Triturus cristatus* as a precautionary measure (irrespective of desk and field survey results presented within Chapter 9 Biodiversity and its supporting appendices).
- 2.4.12. The classification of priority habitat for rivers and streams has been reviewed following consultation with Natural England. Following the guidance in UKBAP Priority Habitat Descriptions for Rivers (**Ref. 31**), the priority habitat is defined by either the presence of one species from criterion level A or C, or six species from criterion level B. It was identified that only the River Dee has six criterion level B species, and no watercourses have criterion level A or C species present. However, as the River Dee is designated as an SAC and SSSI it has been excluded from the metric, in line with the BNG Good Practice Principles.
- 2.4.13. The strategic significance of all Priority habitats within England were assigned as 'formally identified in local strategy'. This is due to the Ecological Network mapping associated with Cheshire West and Chester Council (CWCC) policy DM44, which includes all known Priority habitat parcels. It is acknowledged that not all hedgerows fall within the network, however, as the vast majority do, and considering priority habitat is considered a fundamental element of the network, all were assigned strategic significance as a precautionary measure.

POST-DEVELOPMENT BIODIVERSITY

- 2.4.14. For the post-development recommendations, strategic significance scores were assumed to be the same as the baseline scores, due to the same spatial context.
- 2.4.15. All habitats outside the permanent loss areas, but within the Survey Area, excluding areas where specific commitments for retention have been made, have been classified as 'temporary loss areas', as shown in **Figure 2**. The BM3.1 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**).
- 2.4.16. Due to the predominantly short-term, temporary, and 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 assessed using the methodology laid out in **paragraph 2.4.18.**

- 2.4.17. The Working Width for the DCO Proposed Development is expected to be a maximum of 32m along the Newbuild Carbon Dioxide Pipeline Route, with exceptions made for AGIs and BVSs. 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 Detailed Design. For this reason, the Survey Area contains more habitat area than that which 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.
- 2.4.18. 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.
- 2.4.19. All habitats considered to be 'lost' within the temporary loss areas were 'reinstated' where reasonably possible. In some circumstances due to limitations from utilities presence in some locations, it will not be possible to reinstate certain habitats (e.g. woodland); these were therefore treated as lost entirely and replaced by modified grassland. 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).

- 2.4.20. 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.
- 2.4.21. For hedgerows, a maximum of 15m of hedgerow length has been assumed to be lost from each hedgerow crossing within the Survey Area, in order to accommodate the DCO Proposed Development, before being replanted after construction. Therefore, during the assessment, 15m of each hedgerow crossed was treated as 'lost' and then 'reinstated' within the on-site Creation tab. The remaining length of each hedgerow was treated as retained.
- 2.4.22. Where it was confirmed through field survey data that a habitat parcel was CFGM, it was treated in the BM3.1 in accordance with the underlying habitat it was surveyed as. Therefore, a low distinctiveness grassland which overlapped with the CFGM HPI layer (and therefore was assigned as CFGM in BM3.1) was treated as retained in the toolkit, as it is assumed to be reinstated within 2 years. Medium distinctiveness grasslands which overlapped with the CFGM HPI layer were treated as lost and reinstated. This rationale reflects the fact that CFGM designation is based upon the underlying hydrology, topography, and local ditch systems, all of which would not change as a result of the DCO Proposed Development. Therefore, the intrinsic value of the underlying grassland associated with species diversity is the predominant factor which will determine whether or not this habitat type will return to its baseline value within 2 years of impacts occurring.
- 2.4.23. 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 so as to remain consistent and to display clarity in the Priority Habitat results. To remain transparent, as off-site habitat interventions are explored the baseline habitats for any identified sites will be outlined including UKHab habitat and condition where relevant.

2.4.24. The post-development condition of impacted watercourses is determined by running scenarios through Cartographer (**Ref. 30**). Actual River Condition Assessment (RCA) survey results have been estimated to reflect what would likely be recorded in a survey post-development to derive a future condition score.

3. RESULTS

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 BM3.1 toolkits were completed for each area to allow for an overall BU score to be determined for each. The separate BM3.1 toolkits are provided as **Annex C** separate to this report, with one for each of England and Wales.

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 12.91ha with a value of 132.55 Habitat Units (HU).
- 3.2.2. The total linear hedgerow Priority Habitats within the DCO Proposed Development for England totalled 18.41km with a value of 147.91 Hedgerow Units (HeU).
- 3.2.3. No river Priority Habitats were present within the DCO Proposed Development for England.

Post-Development Biodiversity

- 3.2.4. Retained, area-based Priority Habitats totalled 11.34ha, with a value of 118.20HU. Retained linear Priority Habitat hedgerows totalled 15.69km, with a value of 125.37HeU.
- 3.2.5. Reinstated area-based Priority Habitats totalled 0.71ha with a value of 1.35HU. Reinstated linear hedgerow Priority Habitats totalled 2.72km, with a value of 15.81HeU.

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 | 132.55 | 119.55 | -13.00 | -9.81% |
| Linear hedgerow Priority Habitats | 147.91 | 141.18 | -6.73 | -4.55% |
| Linear river Priority Habitats | 0.00 | 0.00 | 0.00 | 0.00% |

Compensation Scenario

3.2.7. Using the BM3.1, 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 creation of new habitats only. It will be possible to gain required units through a blend of newly created habitats and enhancement of existing Priority Habitat, or through achieving uplifts in distinctiveness of non-priority habitat to meet criteria of Priority Habitat. Under any future scenario, a greater total area of each Priority Habitat type will be created than that lost within the Survey Area baseline wherever possible.
- The target condition of created habitats was assumed to be Good, based on the assumption that appropriate management plans will be in place and secured for a minimum of 30 years.
- An off-site baseline habitat type of ‘Developed land – sealed surface’ was used due to it scoring a baseline value of 0HU. 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 but still impacting results of HU, it was therefore not included within the calculations and instead a habitat

was used that does not score biodiversity units so as to remain consistent and provide clarity in the Priority Habitat results.

- Due to an error in the BM3.1, whereby units would not generate due to the 'final time to target multiplier' box remaining blank, it was not possible to estimate the amount of lowland mixed deciduous woodland creation required to achieve a 1% net gain through the off-site tab. Therefore, the compensation required for lowland mixed deciduous woodland was modelled using the on-site tab. This is not considered to be a limitation as the multipliers applied result in the same result as would be achieved through the off-site tab.

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 | Coastal floodplain and grazing marsh | Good | 2.6 ha | 7.57 | +1.34 | +1.92% |
| | Ponds (Priority habitat) | Good | 0.3 ha | 3.03 | +0.96 | |
| | Woodland – Lowland mixed deciduous woodland | Good | 2.6 ha | 4.94 | +0.25 | |
| Linear – hedgerows | Native species rich hedgerow with trees | Good | 1.0 km | 8.83 | +2.09 | +1.42% |

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**, the sites 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 1.66ha with a value of 14.12HU.
- 3.3.3. The total linear hedgerow Priority Habitats within the DCO Proposed Development totalled 24.84km with a value of 157.07HeU.
- 3.3.4. No river Priority Habitats were present within the DCO Proposed Development for Wales.

Post-Development Biodiversity

- 3.3.5. Retained, area-based Priority Habitats totalled 0.50ha, with a value of 5.24HU. Retained linear Priority Habitat hedgerows totalled 20.91km, with a value of 132.86HeU. Retained linear river Priority Habitats totalled 0.41km, with a value of 4.83RU.
- 3.3.6. Reinstated linear hedgerow Priority Habitats totalled 3.91km, with a value of 18.61HeU.
- 3.3.7. Newly created linear hedgerow Priority Habitats totalled 0.17km, with a value of 1.14HeU.

Quantitative Assessment

- 3.3.8. **Table 3.13** 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 | 14.12 | 5.24 | -8.88 | -62.85% |
| Linear hedgerow Priority Habitats | 157.07 | 152.61 | -4.46 | -2.84% |

| Habitat type | Baseline value | Post-development value | Change in units | Quantitative outcome |
|--------------------------------|----------------|------------------------|-----------------|----------------------|
| Linear river Priority Habitats | 0.00 | 0.00 | 0.00 | +0.00% |

Compensation Scenario

3.3.9. Using the BM3.1, 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.

3.3.10. 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 and secured for a minimum of 30 years.
- An off-site baseline habitat type of ‘Developed land – sealed surface’ was used due to it scoring a baseline value of 0HU. 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 but still impacting results of HU, it was therefore not included within the calculations and instead a habitat was used that does not score biodiversity units so as to remain consistent and provide clarity in the Priority Habitat results.
- Due to an error in the BM3.1, it was not possible to estimate the amount of lowland mixed deciduous woodland creation required to achieve a 1% net gain through the off-site tab. Therefore, the compensation required for lowland mixed deciduous woodland was modelled using the on-site tab. This is not considered to be a limitation as the multipliers applied result in the same result as would be achieved through the off-site tab.

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 | Woodland – Lowland mixed deciduous woodland | Good | 3.8 ha | 7.22 | +0.14 | +1.69% |
| | Ponds (Priority habitat) | Good | 0.01 ha | 0.10 | +0.10 | |
| Linear – hedgerows | Native species rich hedgerow with trees | Good | 0.7 km | 6.18 | +1.72 | +1.09% |

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 the BNG Good Practice Principles is based on the current stage of the BNG process. The 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 |
|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 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. | 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, as well as specific commitments to avoid existing areas of Priority Habitat 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 detailed Landscape and Ecological Management Plan (LEMP). These will include ground preparation, planting methodologies, and initial maintenance. | Achieved |
| 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. | 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, bespoke compensation has been addressed, as required, within the Environmental Impact Assessment and associated Habitat Regulations Assessment concerned with the DCO Proposed Development where impacts cannot be avoided. It has been concluded that there are no likely significant effects resulting from construction and operation of the DCO Proposed Development on any international statutory designated site (document reference [REP2-023]. No Ancient Woodland is proposed to be lost as a result of the DCO Proposed Development. | Not achieved |
| 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. | Engagement with stakeholders has been undertaken including Natural England, Natural Resources Wales, Cheshire West and Chester Council and Flintshire County Council. Further engagement is underway with these stakeholders in relation to identifying viable offset locations. | Achieved |
| 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. | The BNG assessment has used industry recognised risk multipliers from the BM3.1. Furthermore, the assessment has addressed risks to reinstatement of HPI woodland habitat, associated with uncertainty over the long-term management required to ensure establishment of this habitat type. To this end, within temporary loss areas, even where this woodland is lost and will be reinstated, it has not been entered into the BM3.1. It is assumed this habitat type associated with reinstatement could only constitute medium distinctiveness woodland in the habitat creation tab and therefore should not be included within the assessment which calculates losses and gains of Priority Habitat only. The result of this means that HPI woodland will only be compensated for through off-site habitat interventions where long-term management can be ensured. | Achieved |
| 5. Make a measurable Net Gain contribution | Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities. | The BNG assessment does not currently achieve a quantitative net gain in area-based or hedgerow Priority Habitats within England or Wales, as well as river Priority Habitat in Wales. However, Sections 3.2 and 3.3 lay out potential off-site compensation scenarios which will be investigated further by identifying potential offset sites. Details of the timelines associated with evidencing this net gain is | To be achieved |

| Principle | Description | Evidence | Current Outcome |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| | | provided in earlier and subsequent sections of this report, and additionally captured within the BNG Strategy Update [REP2-042] (as updated at Deadline 3). | |
| 6. Achieve the best outcomes for biodiversity | <p>Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when:</p> <ul style="list-style-type: none"> 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. | <p>At the time of writing, this BNG assessment used the most recent data and followed a rigorous method and QA process.</p> <p>For area-based and hedgerow Priority Habitats, net gain has not yet been achieved. However, recommendations have been made for off-site compensation in which the habitat types lost will be compensated for using the like-for-like or better approach. The Survey Area spans part of the CWCC Ecological Network within England. Whilst no significant impacts are anticipated within these areas, the habitat compensation being identified off-site will, wherever feasible, contribute to the Ecological Network by providing additional areas of priority habitat within core areas, ecological stepping stones and corridors, or restoration areas.</p> <p>Discussions are on-going with CWCC around how sites can be identified which fall within these areas.</p> | To be achieved |
| 7. Be additional | Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e., do not deliver something that would occur anyway). | <p>This BNG assessment does not currently achieve additionality as it does not achieve a net gain. However, if the compensation scenarios laid out in Sections 3.2 and Section 3.3 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 examination phase of the DCO Application. Further enhancements will be explored during detailed design that provide a greater net gain in Priority Habitats where practicable and proportionate.</p> <p>Off-site net gains will be delivered as a result of the DCO Proposed Development and will be designed and implemented transparently and in accordance with the 24 principles of additionality.</p> | To be achieved |
| 8. Create a Net Gain legacy | <p>Ensure net gain generates long-term benefits by:</p> <ul style="list-style-type: none"> Engaging stakeholders and jointly agreeing practical solutions that secure net gain in perpetuity; 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; and Supporting local-level management of net gain activities. | <p>At this stage of the development, detailed construction plans are not available and therefore no management plans are in place.</p> <p>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 utilities), woodland will be reinstated 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. Following reasons set out above (see Principle 4), all woodland reinstatement within the Survey Area, regardless of location, will only be treated as medium distinctiveness habitat.</p> <p>An outline LEMP including habitat management has been submitted. A detailed LEMP will be developed and submitted for consultation with the relevant LPAs at the detailed design stage.</p> <p>Areas secured off-site as part of the BNG strategy to achieve net gain will be subject to a minimum of 30 years management and will include monitoring over this timeframe.</p> | To be achieved |
| 9. Optimise sustainability | Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy. | 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. Any habitat offsetting will also provide opportunities to realise wider environmental benefits within the local area. | To be achieved |

| Principle | Description | Evidence | Current Outcome |
|---------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 10. Be transparent | 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. Results will be updated to include offset site information when available and a revised report submitted at Deadline 5. | Achieved |

4. CONCLUSIONS

- 4.1.1. The DCO Proposed Development as assessed in England would result in a net loss in HU of area-based and HeU Priority Habitats.
- 4.1.2. The DCO Proposed Development as assessed in Wales would result in a net loss in HU of area-based Priority Habitats and HeU.
- 4.1.3. At the time of writing, the DCO Proposed Development has taken significant steps in securing Priority Habitat offsets (see BNG Strategy Update **[REP2-042]** as updated at Deadline 3). However, this does not yet deliver a quantifiable net gain against the target of at least 1% net gain in Priority Habitat. A final BNG assessment and report will be submitted at Deadline 5 capturing further progress in securing offset site locations.
- 4.1.4. The quantitative outcomes of the assessment are a singular element of the BNG assessment and should be considered alongside compliance with the BNG Good Practice Principles (**Annex A**) as presented within **Table 3.5**.
- 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 Survey Area are subject to long term management and monitoring as part of the LEMP, wherever possible. Unacceptable loss of habitats is adequately mitigated / compensated for outside of the BNG process.
- 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 net gains in excess of 1% for Priority Habitats will be explored during the detailed design development. Identification of suitable offset sites has begun and will continue through further engagement with landowners and stakeholders, as summarised by the BNG Strategy Update **[REP2-042]** as resubmitted at deadline 3. The Applicant intends this revision of the report as an interim update and intends to publish the final BNG report at Deadline 5. The report will be updated and resubmitted to the Planning Inspectorate following confirmation of the land or specific strategies to be used to evidence an overall net gain position in Priority Habitats.

- 4.1.8. During the examination phase, ecological surveys of identified offset sites will have occurred, where required, to collate baseline data for input into the Biodiversity Metric. The updated report submitted at Deadline 5 will detail offset site locations, relevant surveys undertaken (where required), 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. It is acknowledged that the legislative and policy landscape in Wales differs from England. Therefore, whilst the BNG assessment has remained consistent between both countries, the specific means to securing net gains in biodiversity are being discussed having regard to relevant local stakeholder engagement. For England, securing net gains is driven by use of BM3.1. For Wales, the particular forms of gain or benefit to be provided in each case are being developed to seek to deliver the most impactful benefits for biodiversity that the DCO Proposed Development can contribute towards. Where there are demonstrable net benefits to biodiversity, and these support local stakeholders wider strategic ambitions, compensation that is qualitative rather than quantitative may be explored where the net benefits are anticipated to outweigh those through an approach to achieving net gain which is consistent with England.

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ANNEX A

GOOD PRACTICE PRINCIPLES

Biodiversity Net Gain

Good practice principles for development

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.

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.

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.

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.

Principle 5. Make a measurable Net Gain contribution

Achieve a measurable, overall gain¹ for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.

¹ 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.

Principle 6. Achieve the best outcomes for biodiversity

Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when:

- Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses
- Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation
- Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels
- Enhancing existing or creating new habitat
- Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity

Principle 7. Be additional

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 perpetuity²
- 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

Principle 9. Optimise sustainability

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

Principle 10. Be transparent

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

² 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

Figure 1 - Baseline Habitat Map

Figure 2 – Areas of Temporary and Permanent Loss

Figure 3 - Designated Site Map



- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost



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HyNet North West

PROJECT TITLE
HyNet CO2 Pipeline DCO

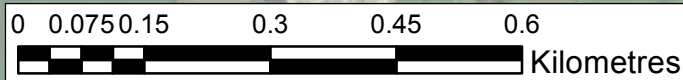
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Figure 2 - Areas of Temporary
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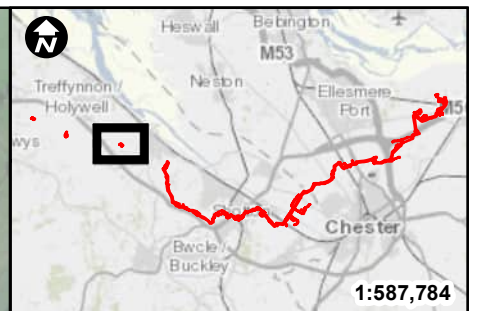
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- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost

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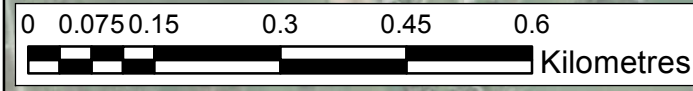
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Figure 2 - Areas of Temporary
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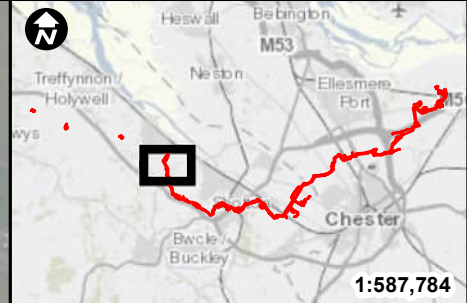
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- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost



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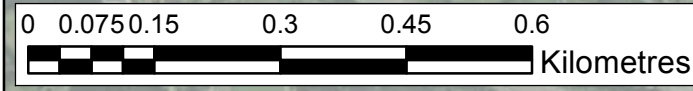
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Figure 2 - Areas of Temporary
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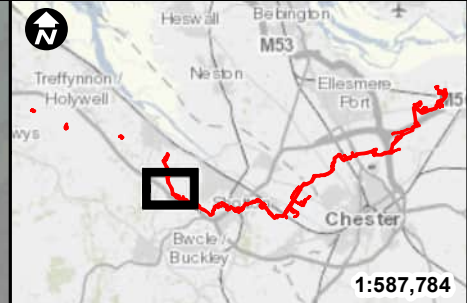
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- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost

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PROJECT TITLE
HyNet CO2 Pipeline DCO

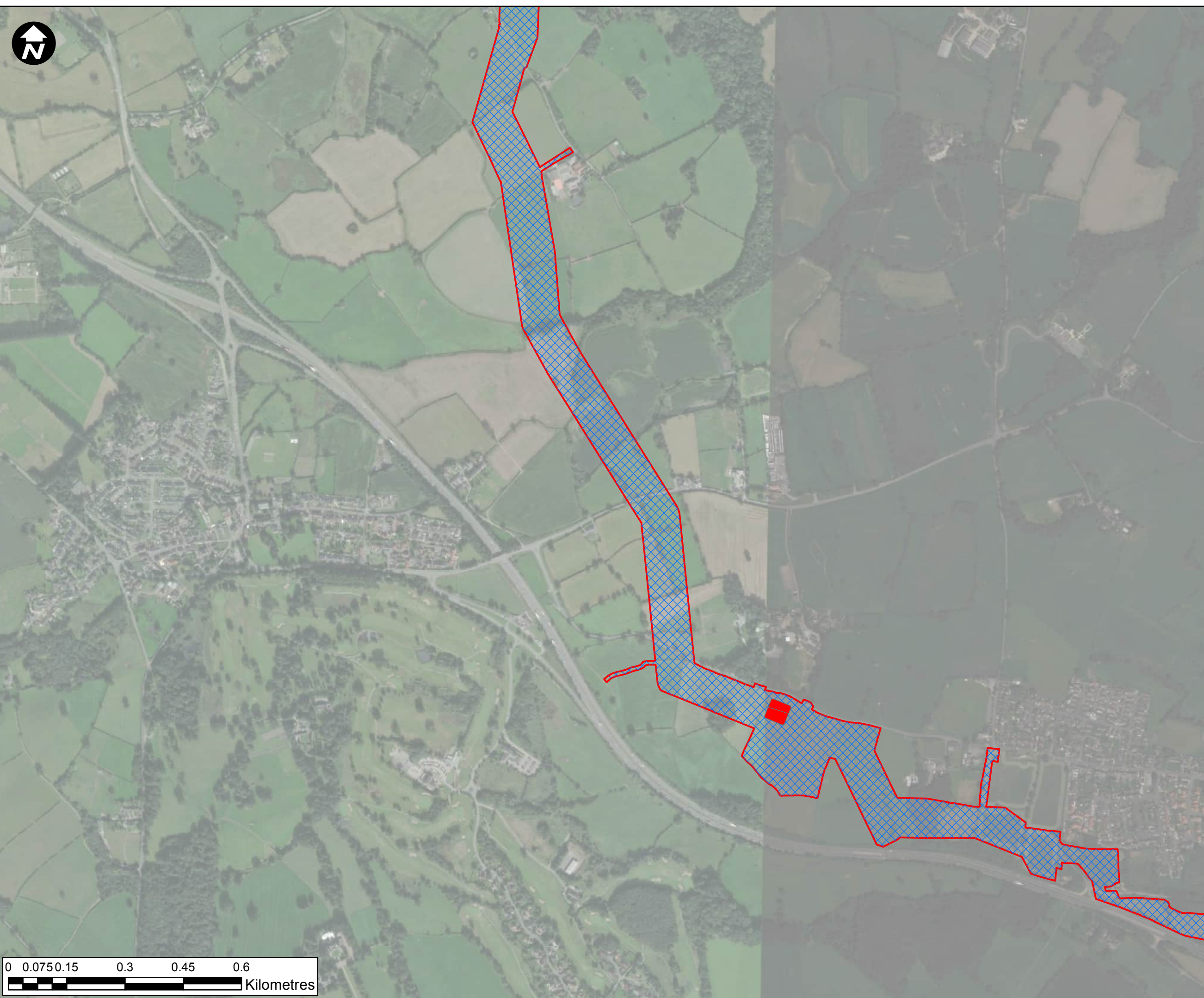
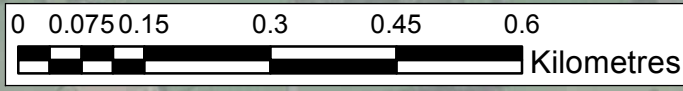
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Figure 2 - Areas of Temporary
and Permanent Loss

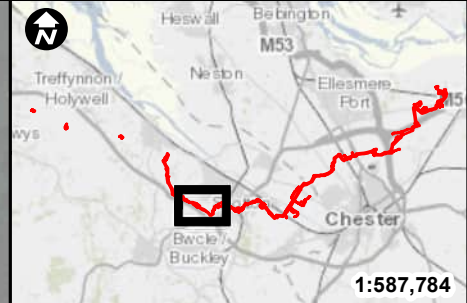
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- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost



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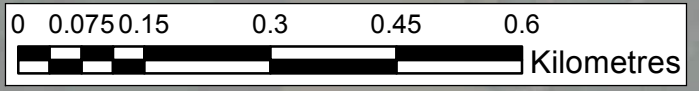
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Biodiversity Net Gain Assessment
Figure 2 - Areas of Temporary
and Permanent Loss

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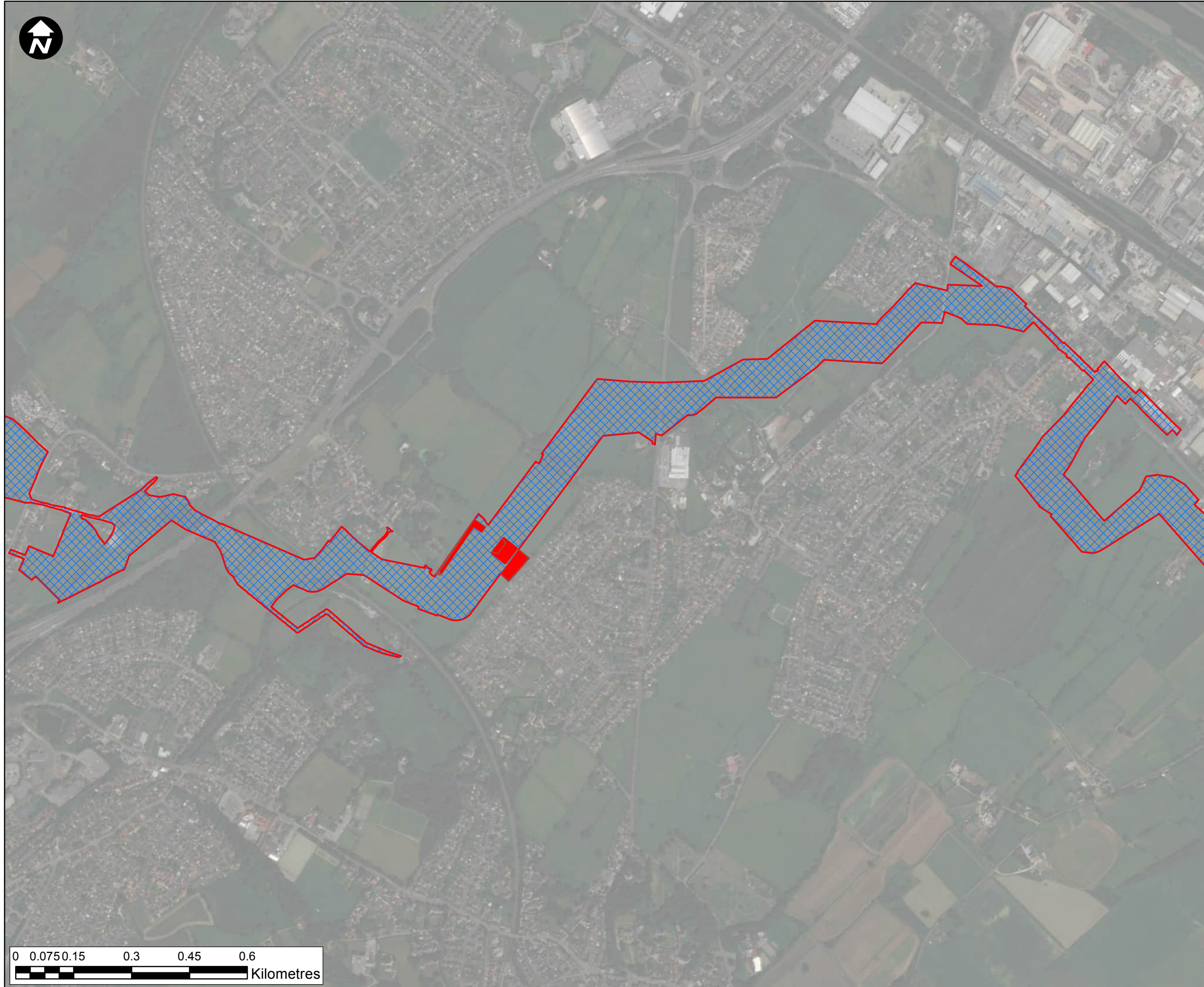
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- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost



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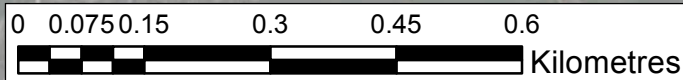
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Figure 2 - Areas of Temporary
and Permanent Loss

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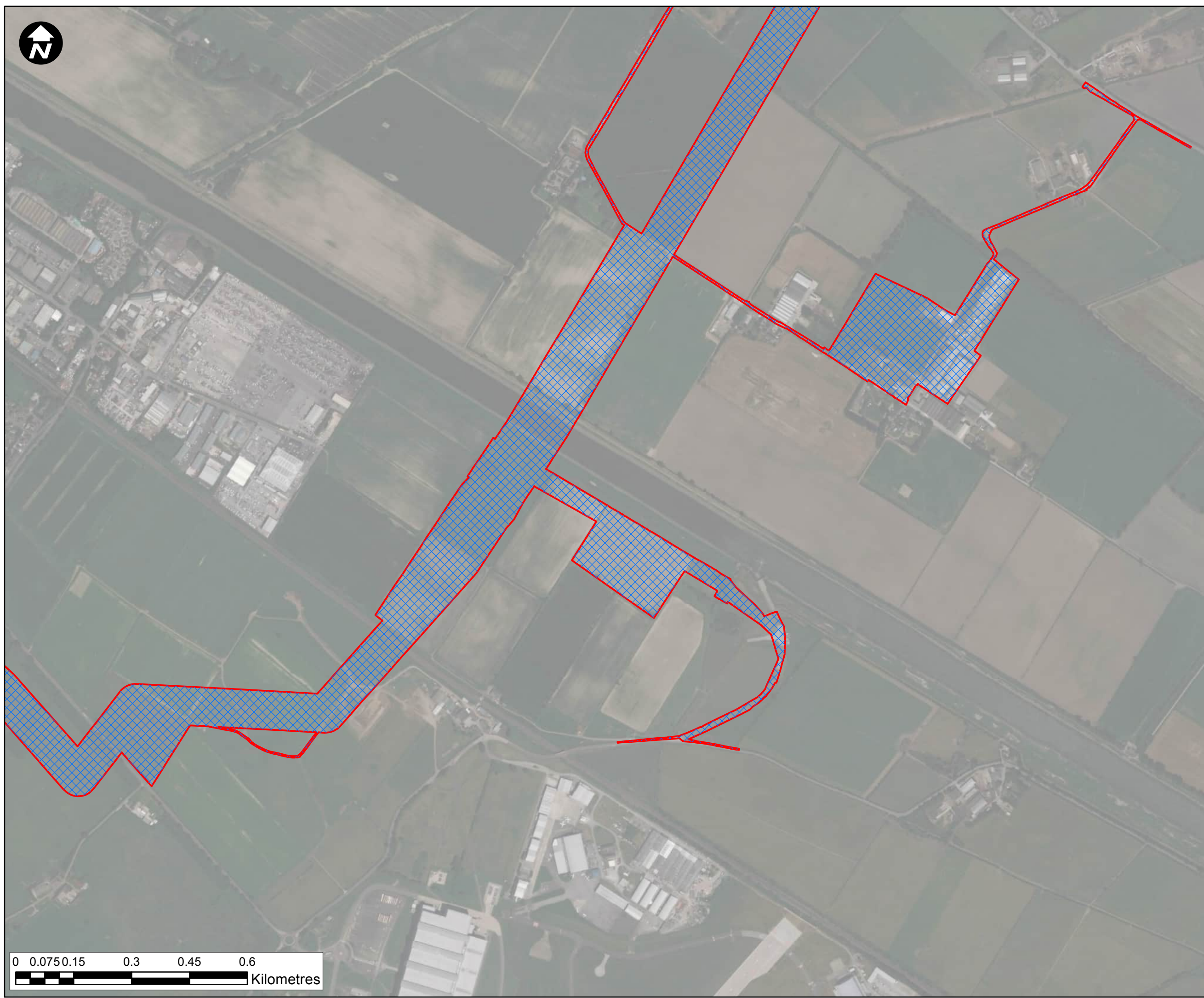
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- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost



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PROJECT TITLE
HyNet CO2 Pipeline DCO

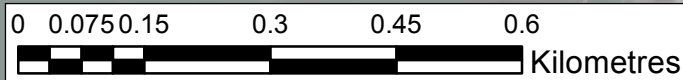
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Figure 2 - Areas of Temporary
and Permanent Loss

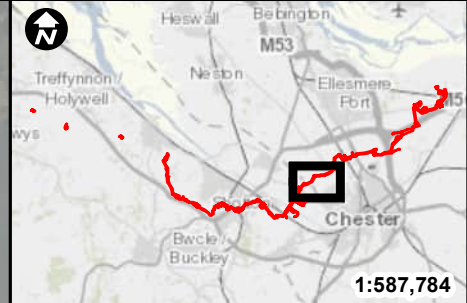
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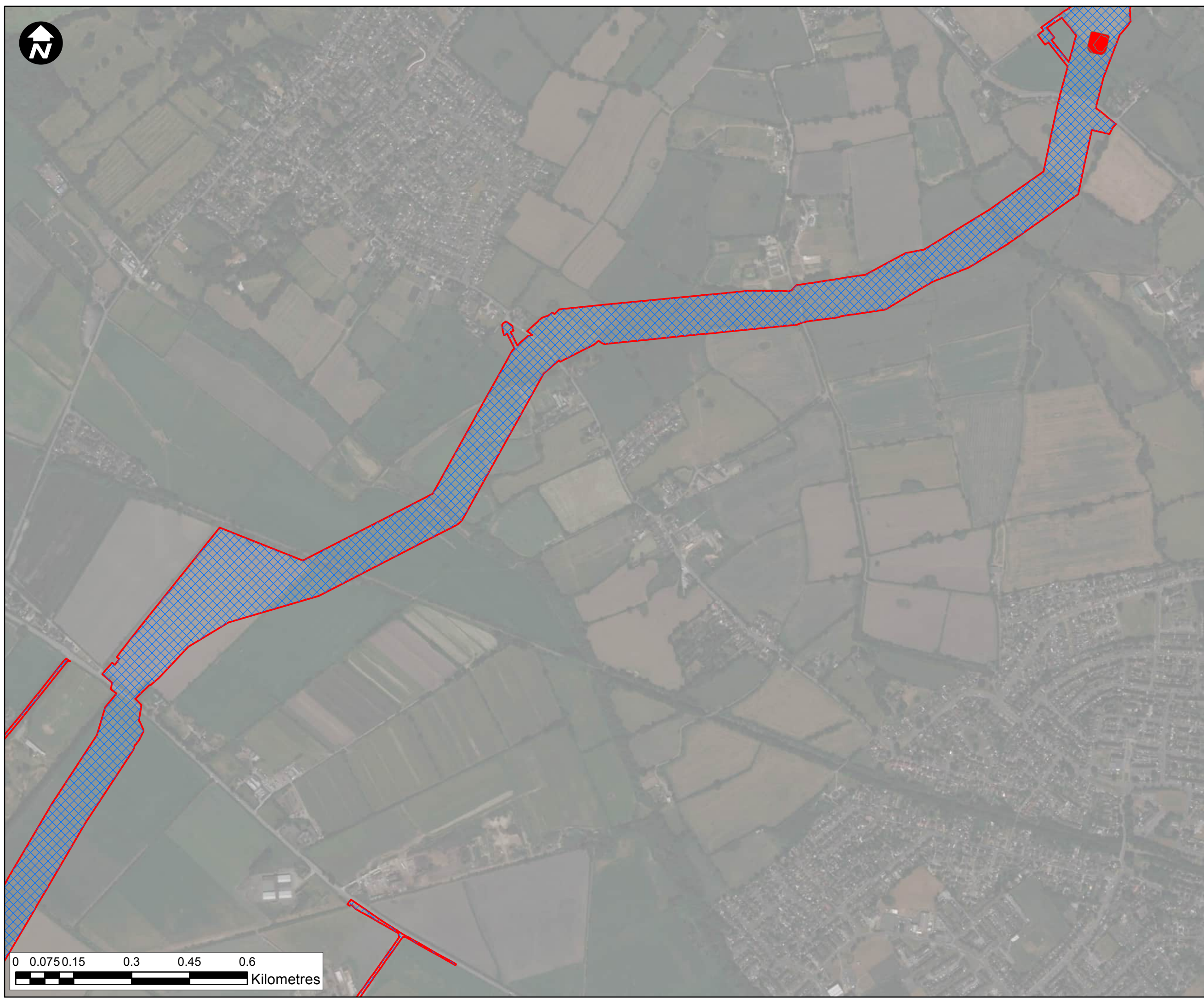
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- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost



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HyNet CO2 Pipeline DCO

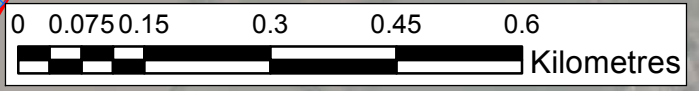
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Figure 2 - Areas of Temporary
and Permanent Loss

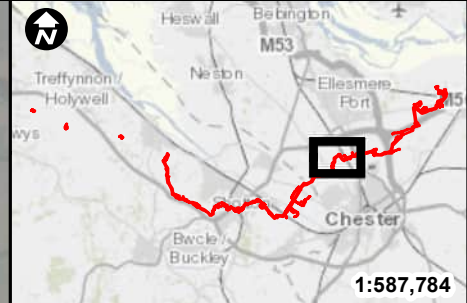
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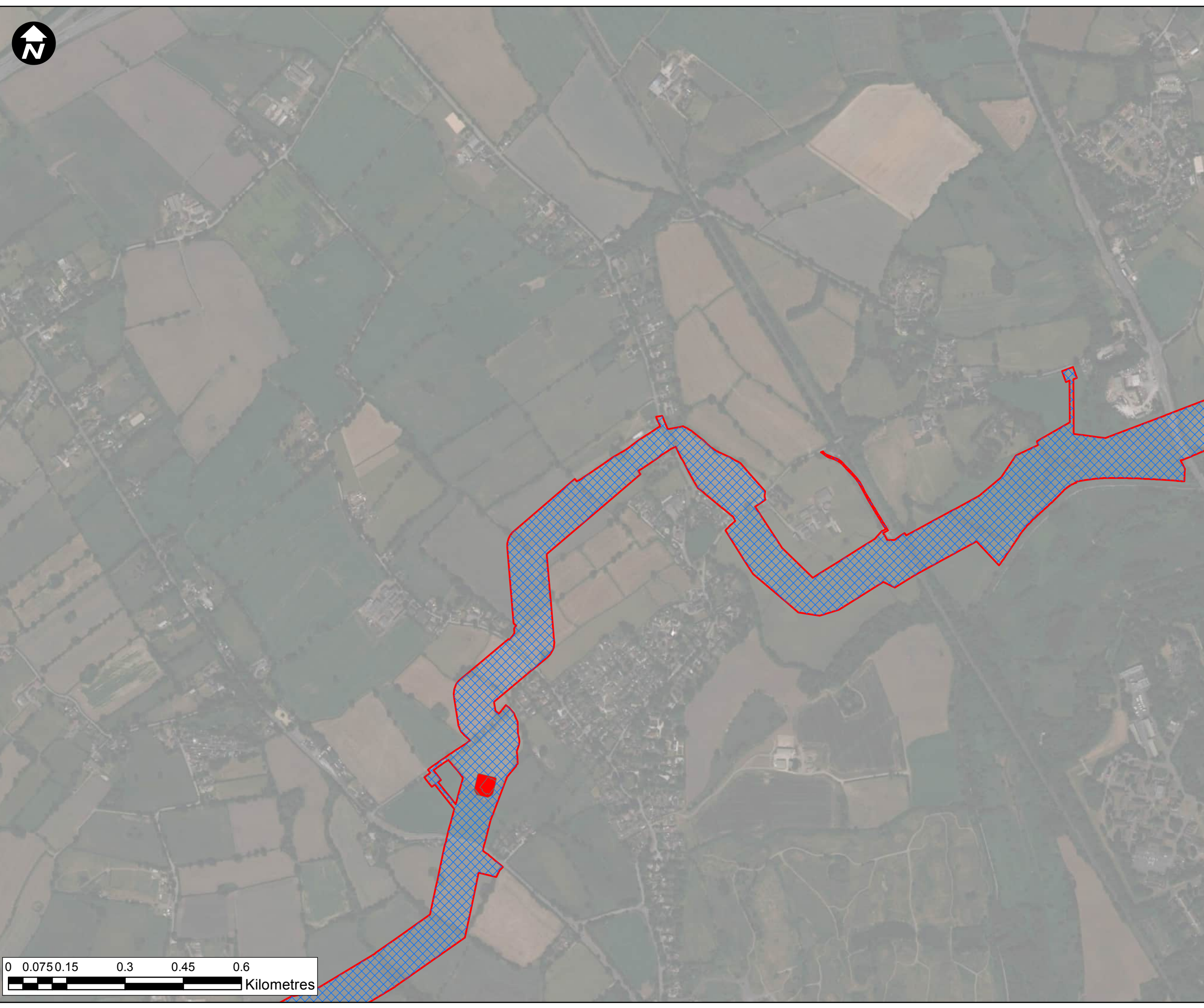
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- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost



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HyNet CO2 Pipeline DCO

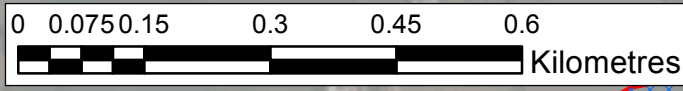
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Figure 2 - Areas of Temporary
and Permanent Loss

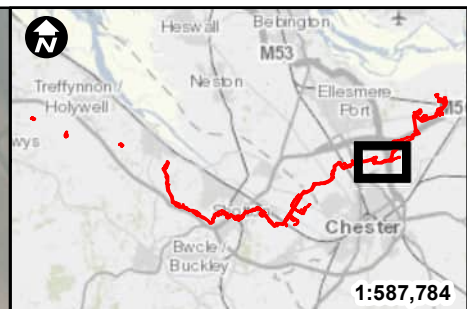
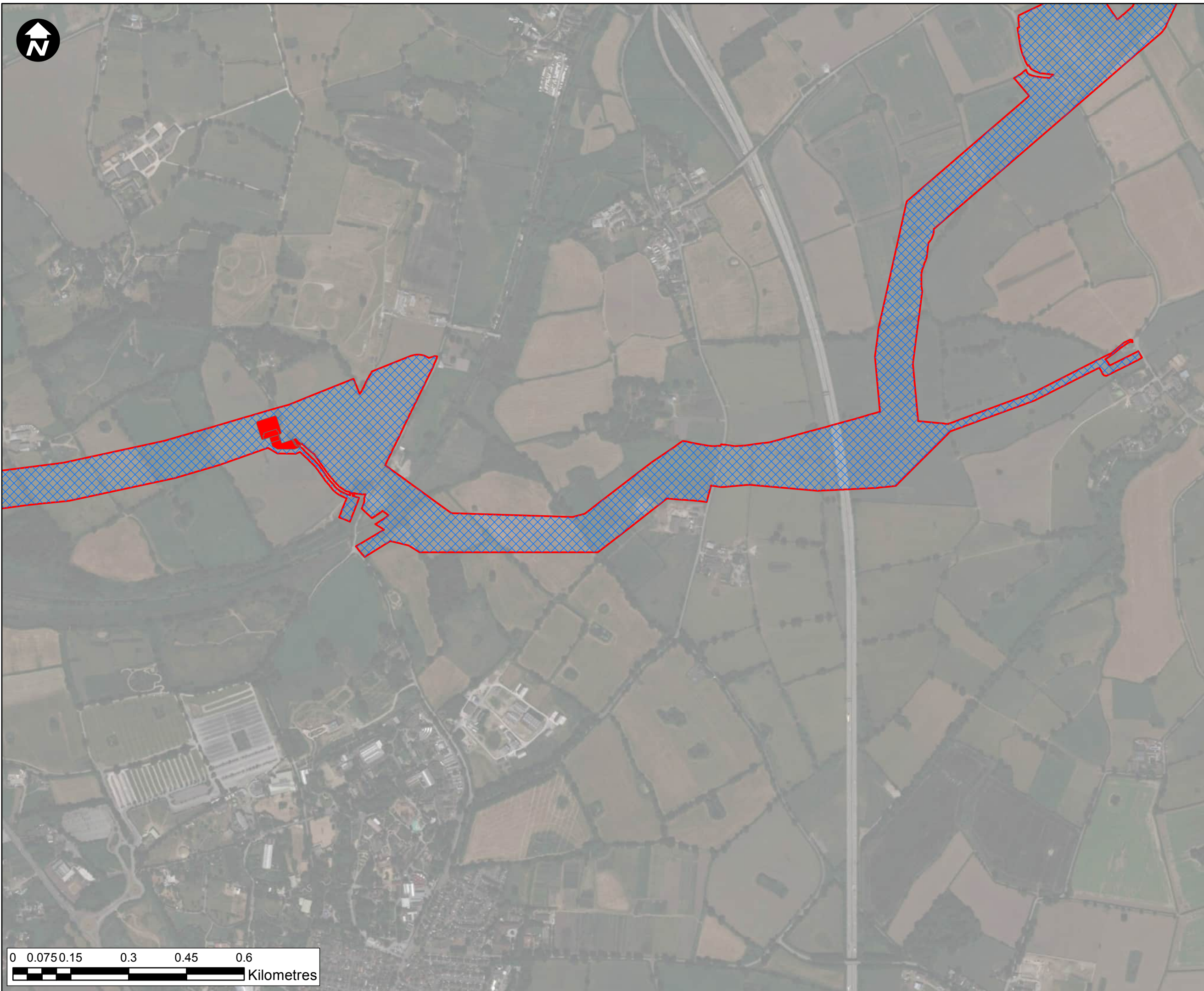
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- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost

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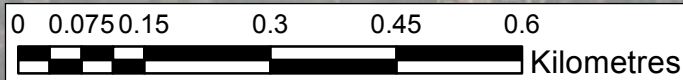
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Figure 2 - Areas of Temporary
and Permanent Loss

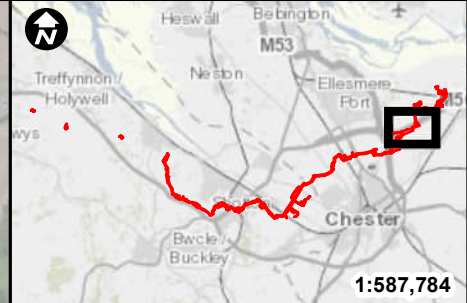
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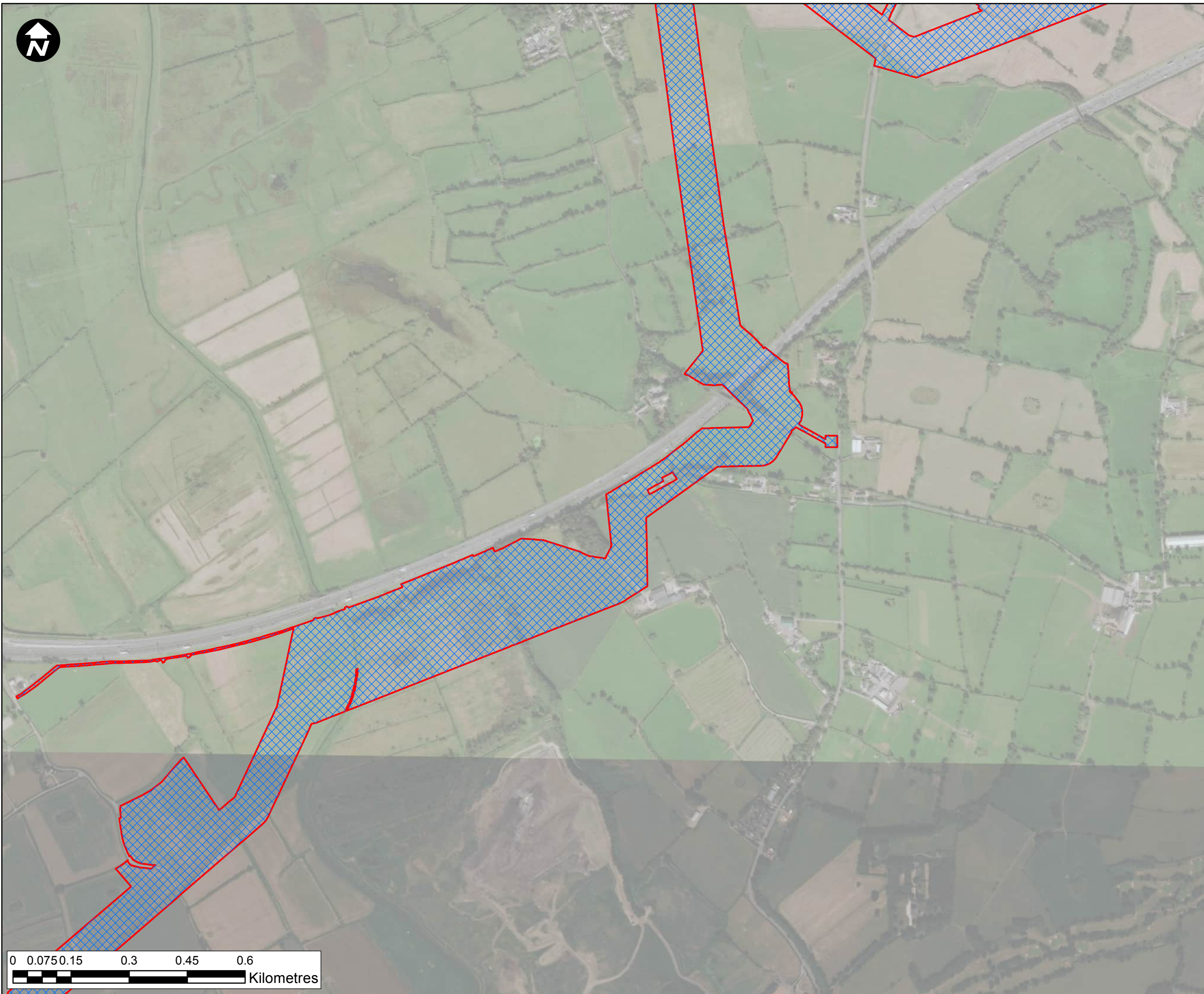
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- Key:**
-  Newbuild Infrastructure Boundary
 -  Permanent loss
 -  Scheme boundary that includes area of habitats that will be temporarily lost



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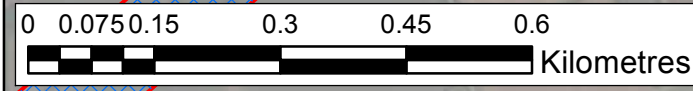
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Figure 2 - Areas of Temporary
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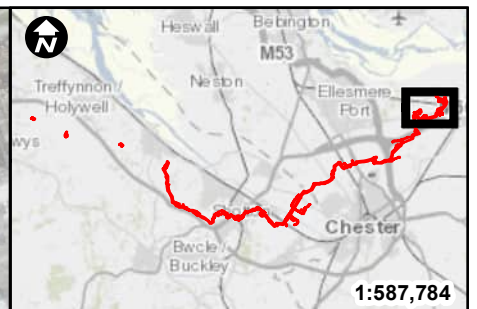
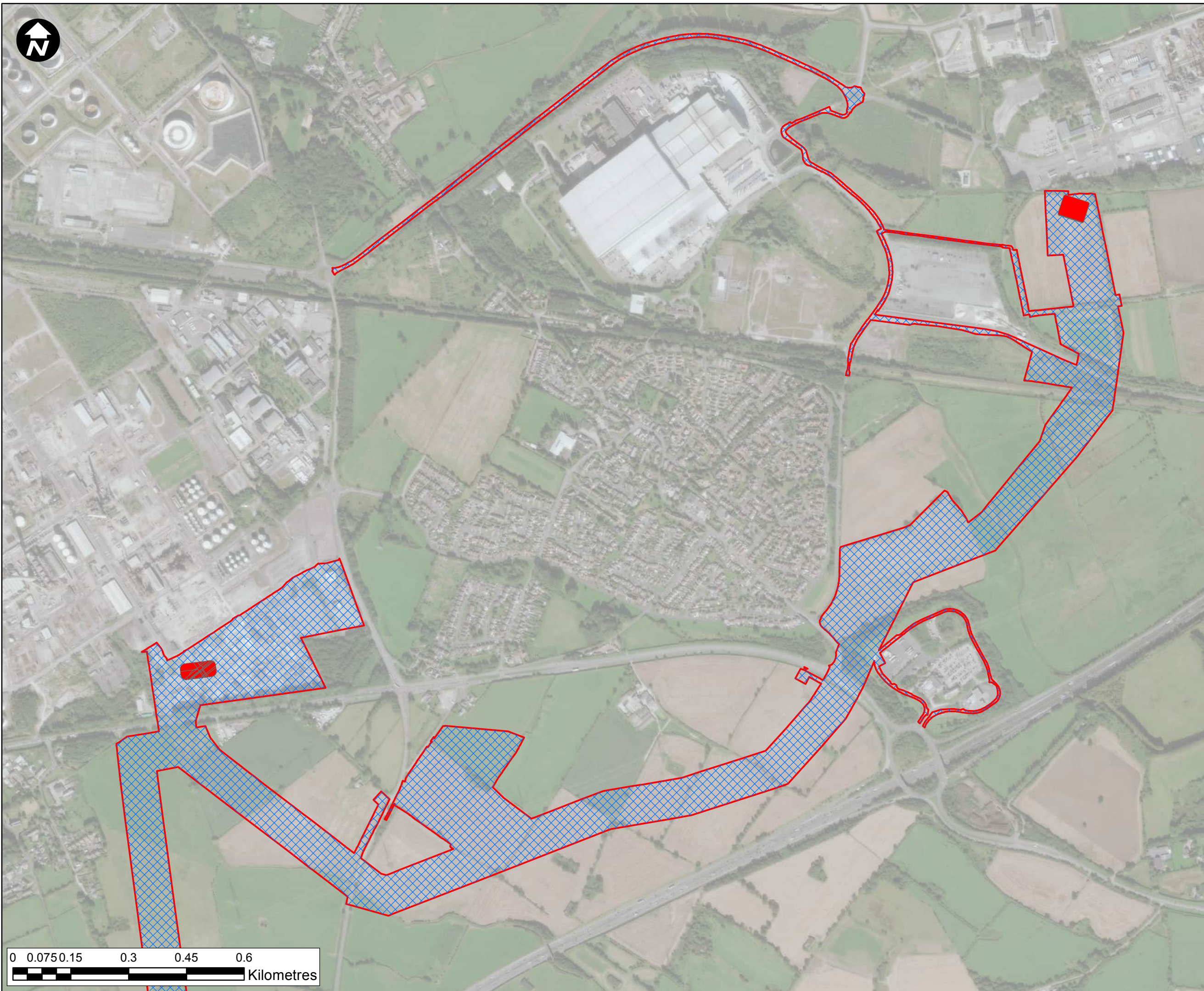
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- Key:**
- Newbuild Infrastructure Boundary
 - Permanent loss
 - Scheme boundary that includes area of habitats that will be temporarily lost

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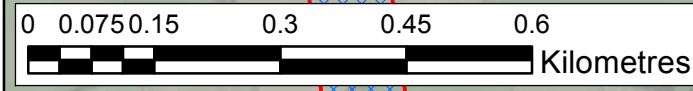
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 Figure 2 - Areas of Temporary and Permanent Loss

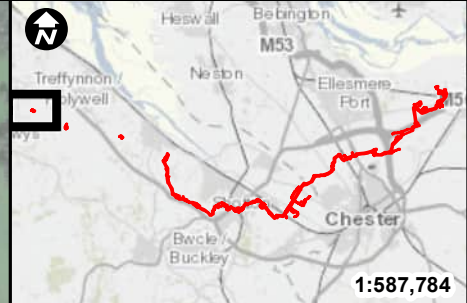
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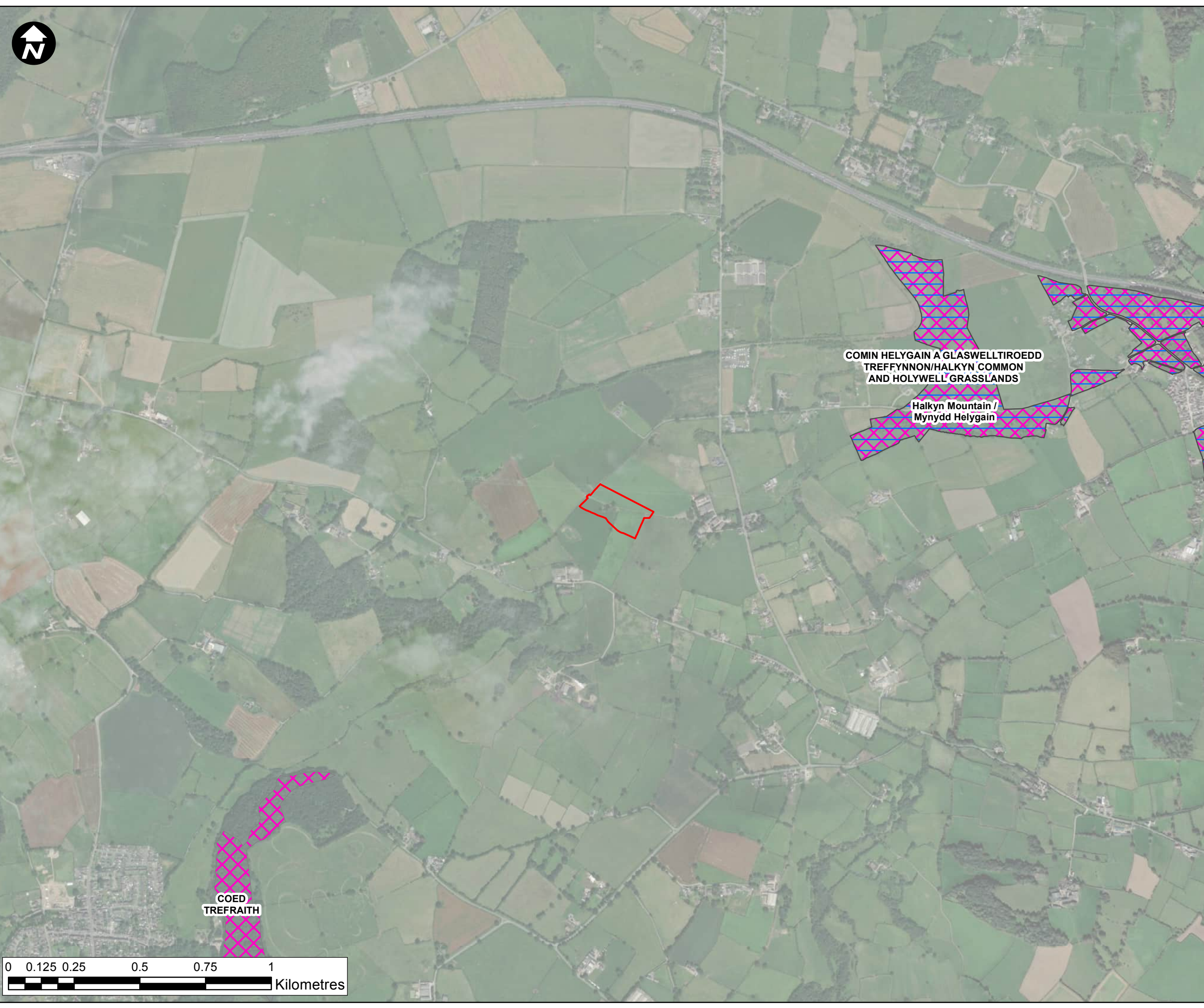
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- Key:**
- Newbuild Infrastructure Boundary
 - Special Area of Conservation (SAC)
 - Site of Special Scientific Interest (SSSI)



COMIN HELYGAIN A GLASWELLTIROEDD
TREFFYNNON/HALKYN COMMON
AND HOLYWELL GRASSLANDS

Halkyn Mountain /
Mynydd Helygain

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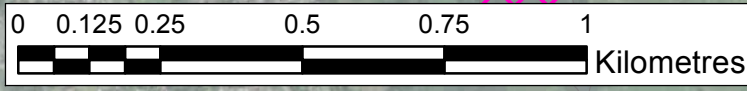
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Biodiversity Net Gain Assessment
Figure 3 - Designated Site Map

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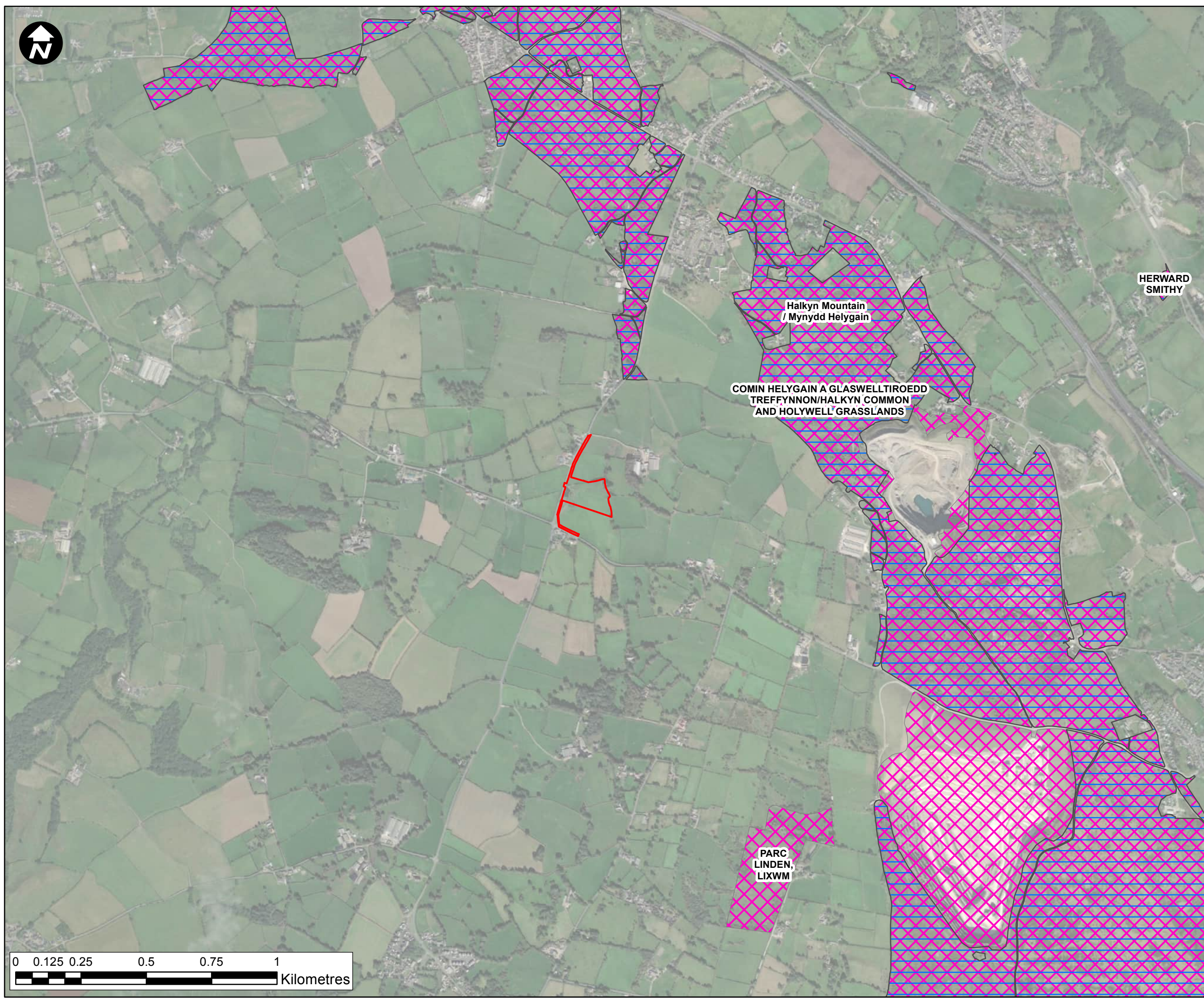
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- Key:**
- Newbuild Infrastructure Boundary
 - Special Area of Conservation (SAC)
 - Site of Special Scientific Interest (SSSI)



Halkyn Mountain / Mynydd Helygain
 COMIN HELYGAIN A GLASWELLTROEDD
 TREFFYNNON/HALKYN COMMON
 AND HOLYWELL GRASSLANDS

HERWARD SMITHY

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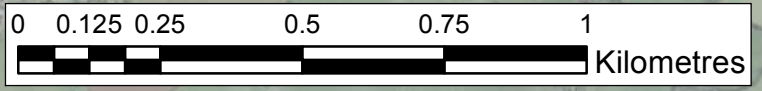
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 Biodiversity Net Gain Assessment
 Figure 3 - Designated Site Map

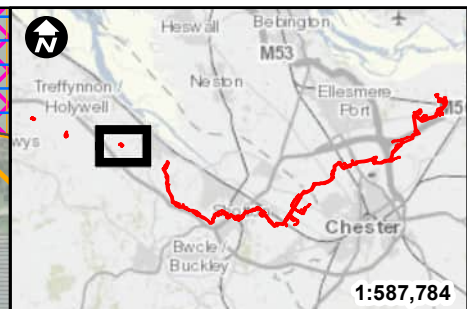
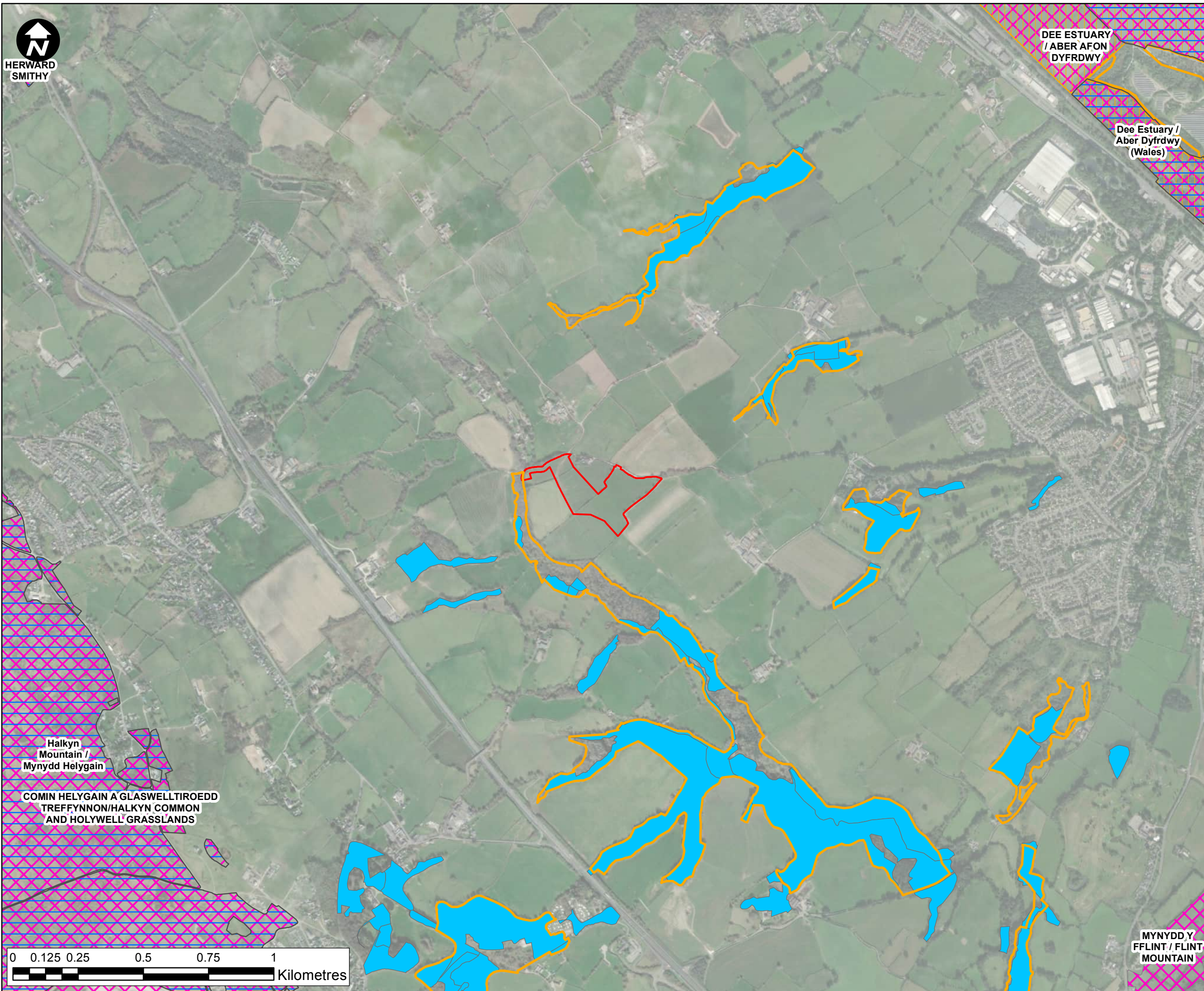
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 EN070007-APP-ES-D.6.5.12.3 Sheet 2





Key:

- Newbuild Infrastructure Boundary
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- Local Wildlife Site (LWS)
- Ancient Woodland

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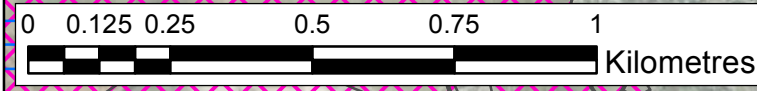
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Biodiversity Net Gain Assessment
Figure 3 - Designated Site Map

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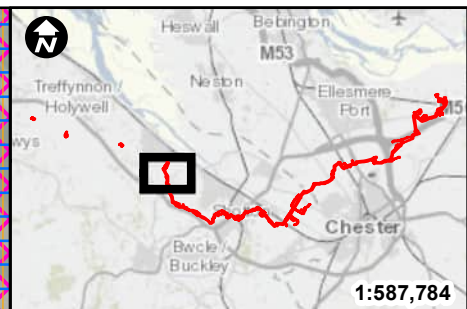
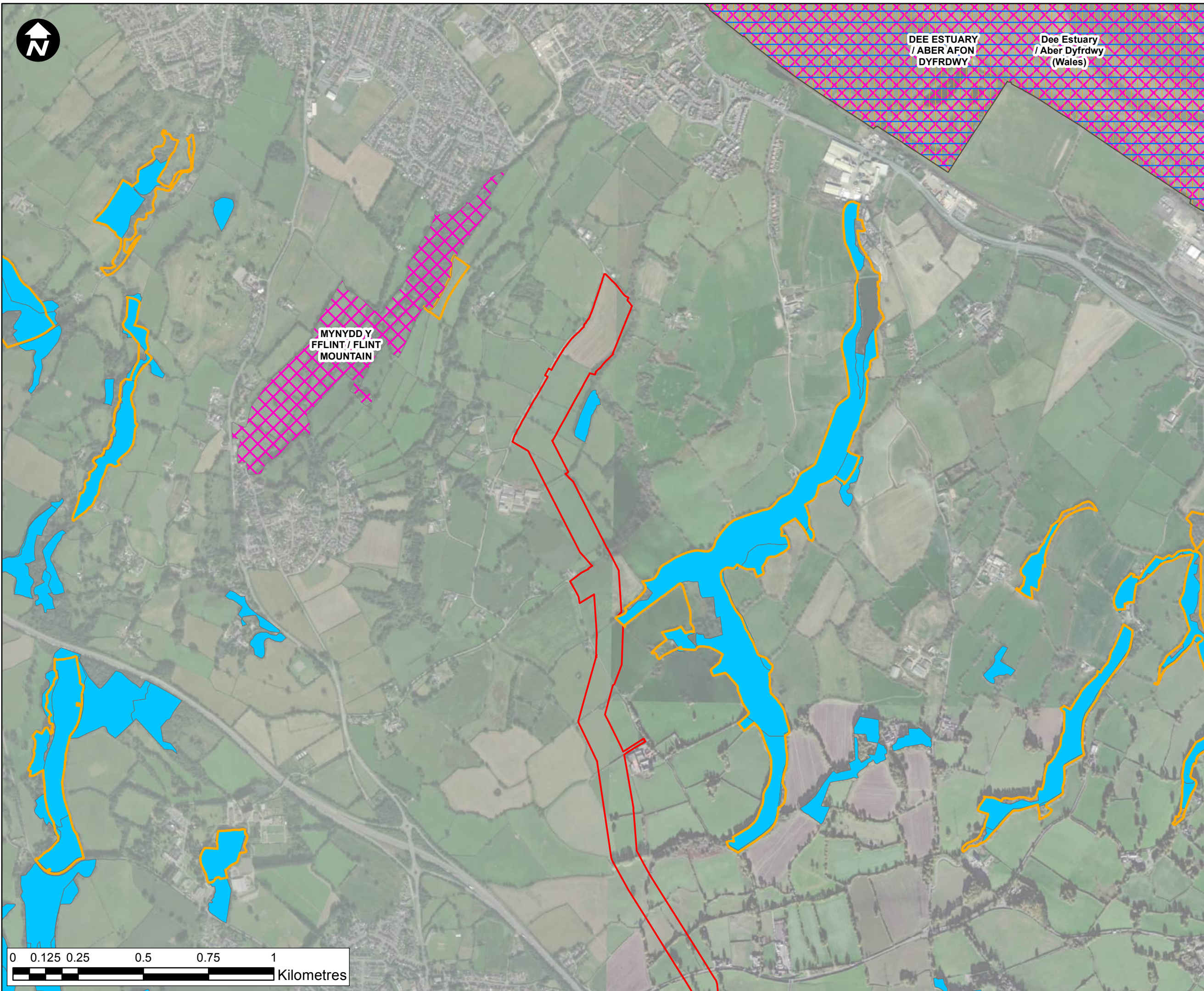
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MYNYDD Y
FFLINT / FLINT
MOUNTAIN



- Key:**
- Newbuild Infrastructure Boundary
 - Special Area of Conservation (SAC)
 - Special Protection Area (SPA)
 - Site of Special Scientific Interest (SSSI)
 - Local Wildlife Site (LWS)
 - Ancient Woodland

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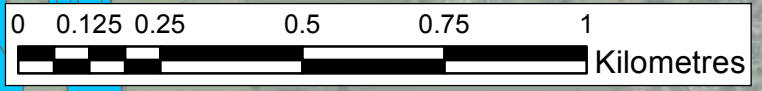
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Biodiversity Net Gain Assessment
Figure 3 - Designated Site Map

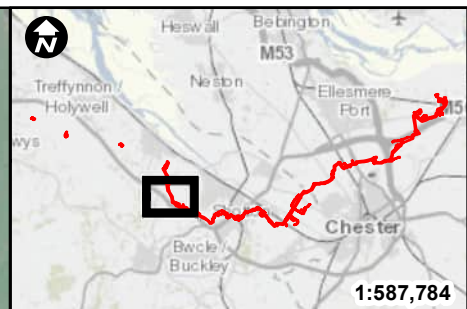
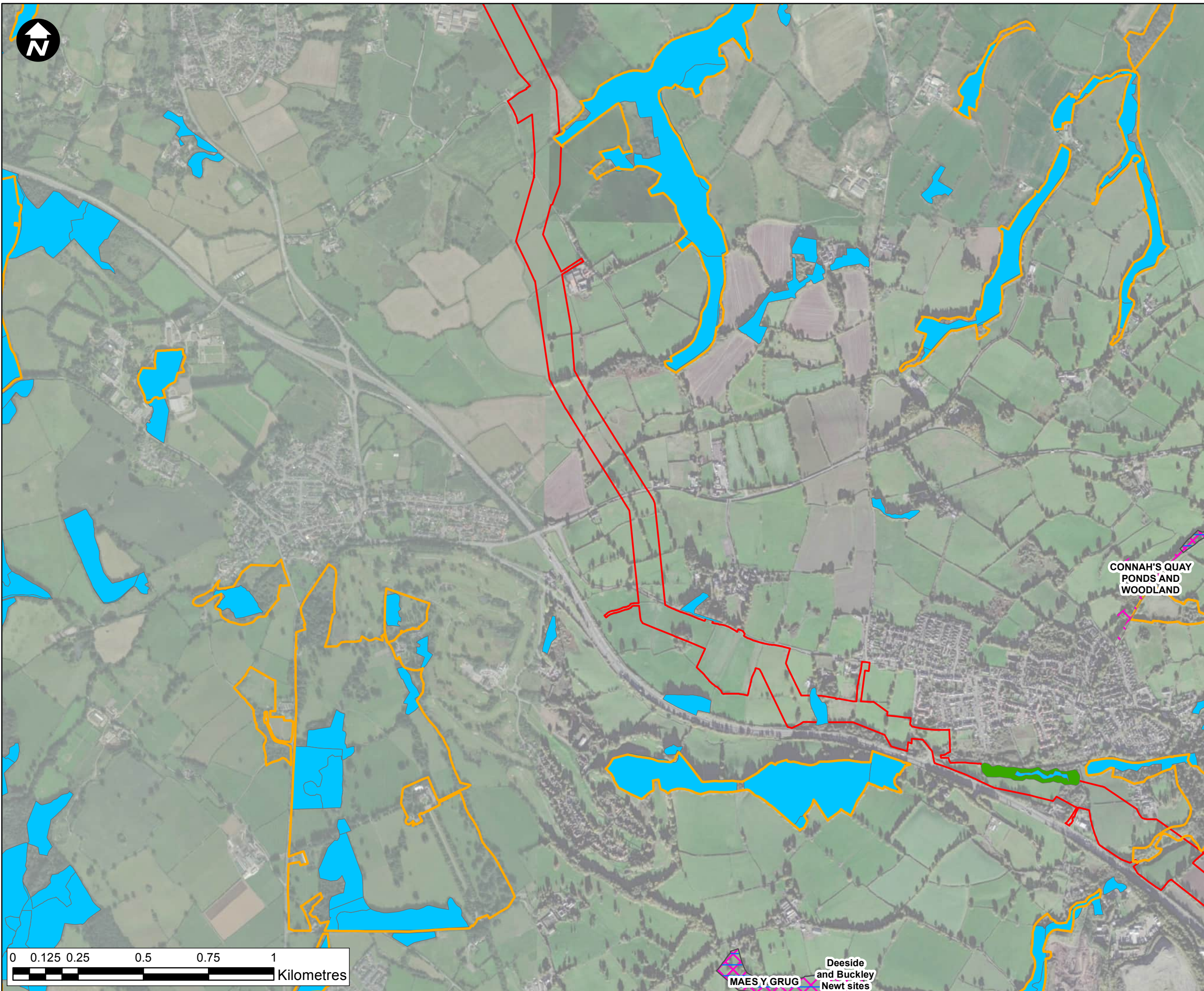
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- Key:**
- Newbuild Infrastructure Boundary
 - Special Area of Conservation (SAC)
 - Site of Special Scientific Interest (SSSI)
 - Local Wildlife Site (LWS)
 - Ancient Woodland
 - Veteran tree groups

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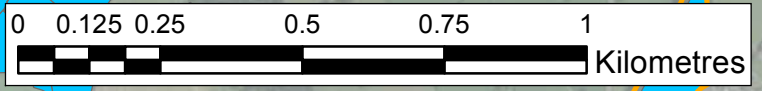
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Biodiversity Net Gain Assessment
Figure 3 - Designated Site Map

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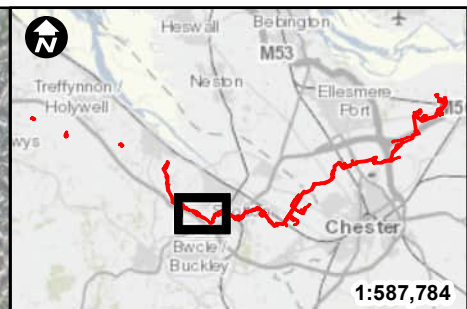
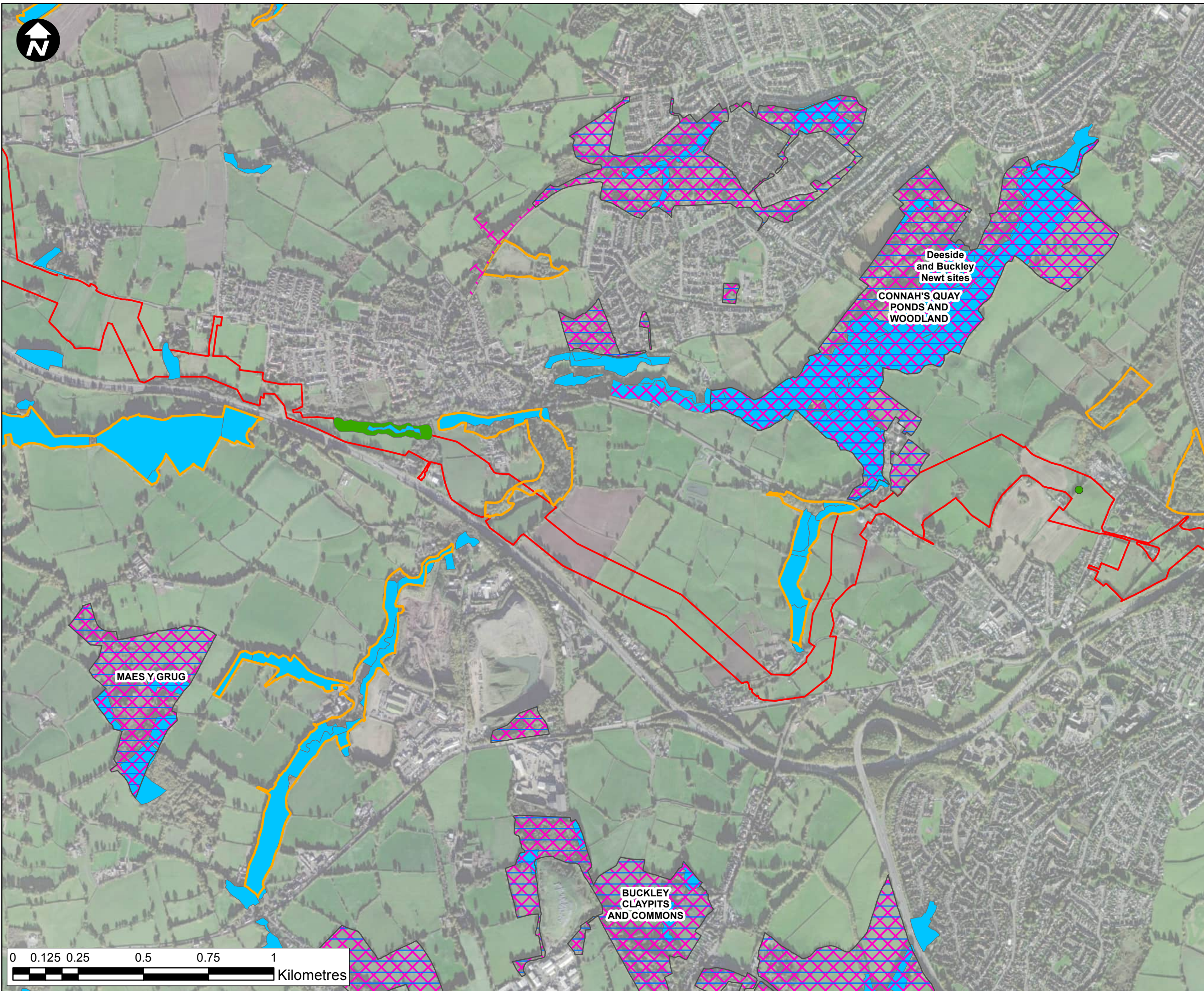
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Deeside and Buckley
Newt sites



Key:

- Newbuild Infrastructure Boundary
- Special Area of Conservation (SAC)
- Site of Special Scientific Interest (SSSI)
- Local Wildlife Site (LWS)
- Ancient Woodland
- Veteran tree groups
- Veteran tree points

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HyNet North West

PROJECT TITLE
HyNet CO2 Pipeline DCO

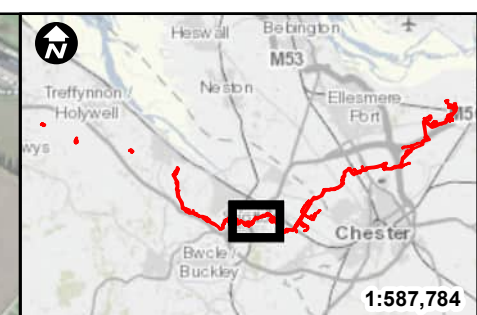
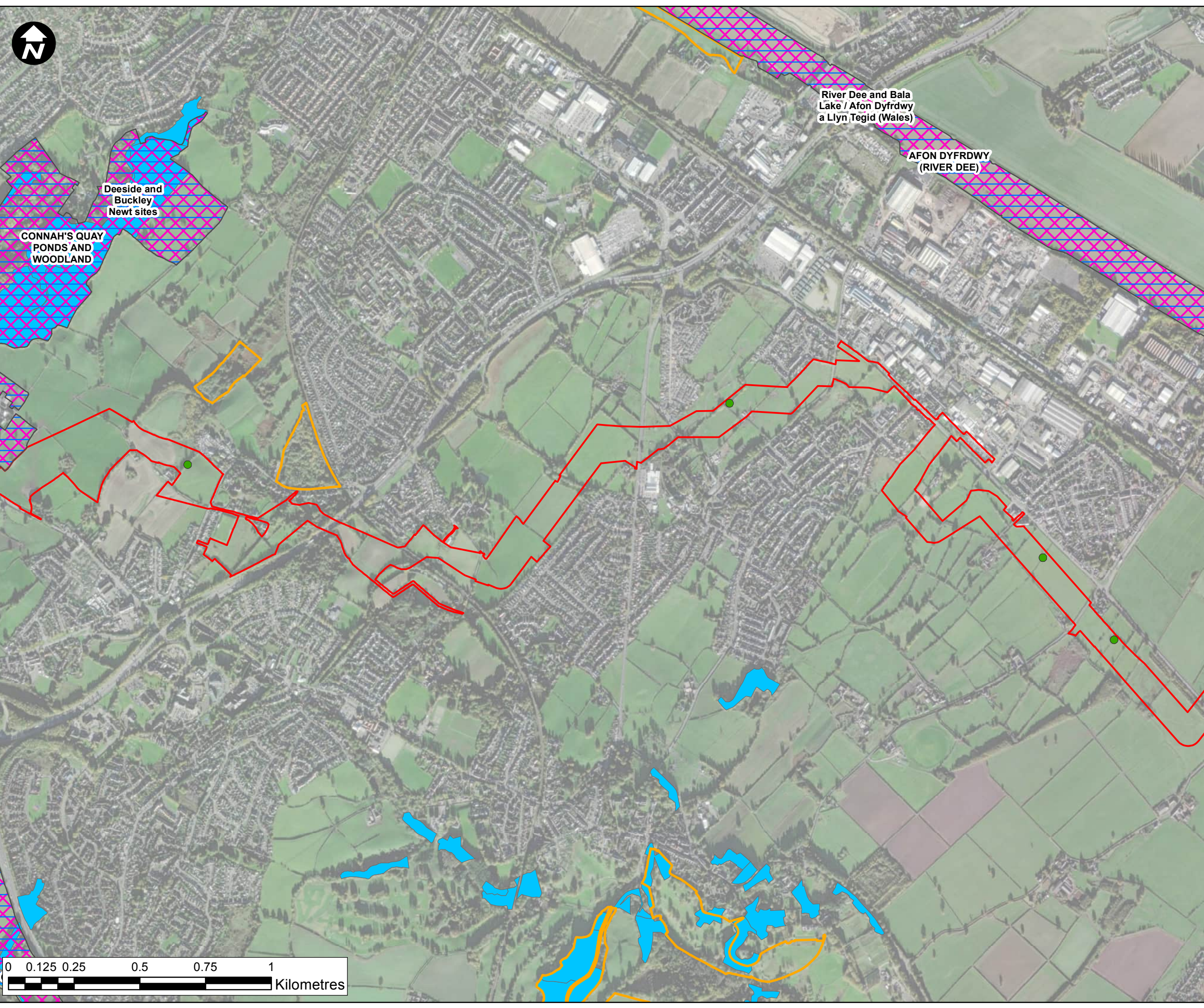
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Figure 3 - Designated Site Map

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- Key:**
- Newbuild Infrastructure Boundary
 - Special Area of Conservation (SAC)
 - Site of Special Scientific Interest (SSSI)
 - Local Wildlife Site (LWS)
 - Ancient Woodland
 - Veteran tree points

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PROJECT TITLE
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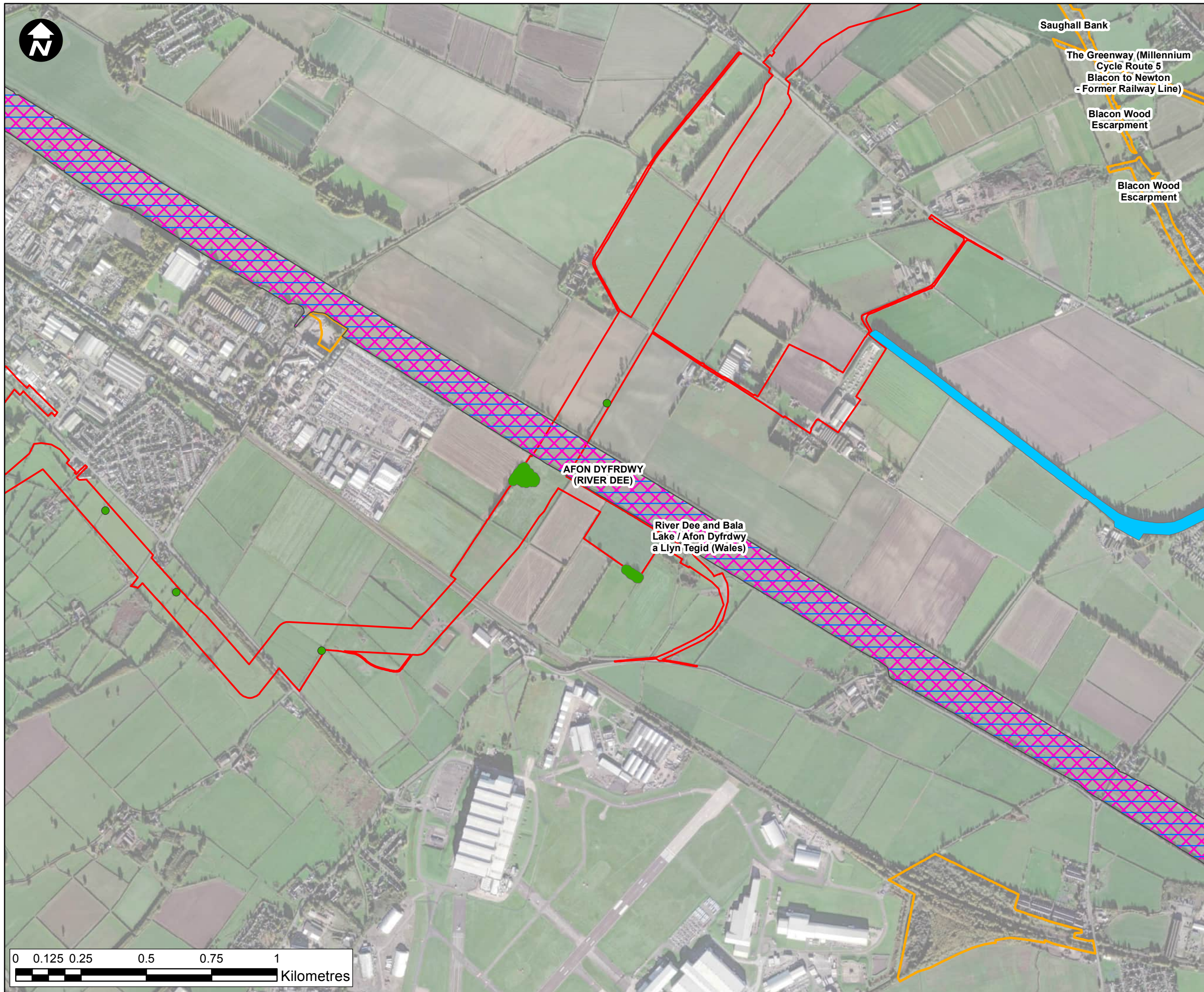
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Figure 3 - Designated Site Map

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- Key:**
- Newbuild Infrastructure Boundary
 - Special Area of Conservation (SAC)
 - Site of Special Scientific Interest (SSSI)
 - Local Wildlife Site (LWS)
 - Ancient Woodland
 - Veteran tree groups
 - Veteran tree points

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PROJECT TITLE
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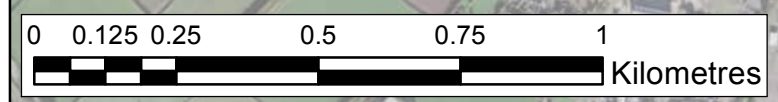
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Figure 3 - Designated Site Map

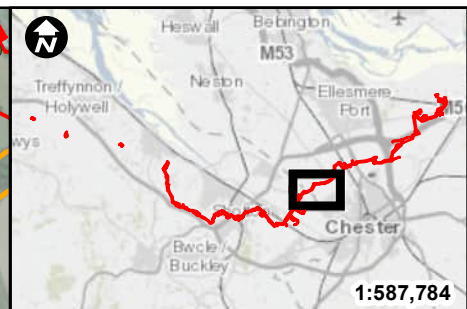
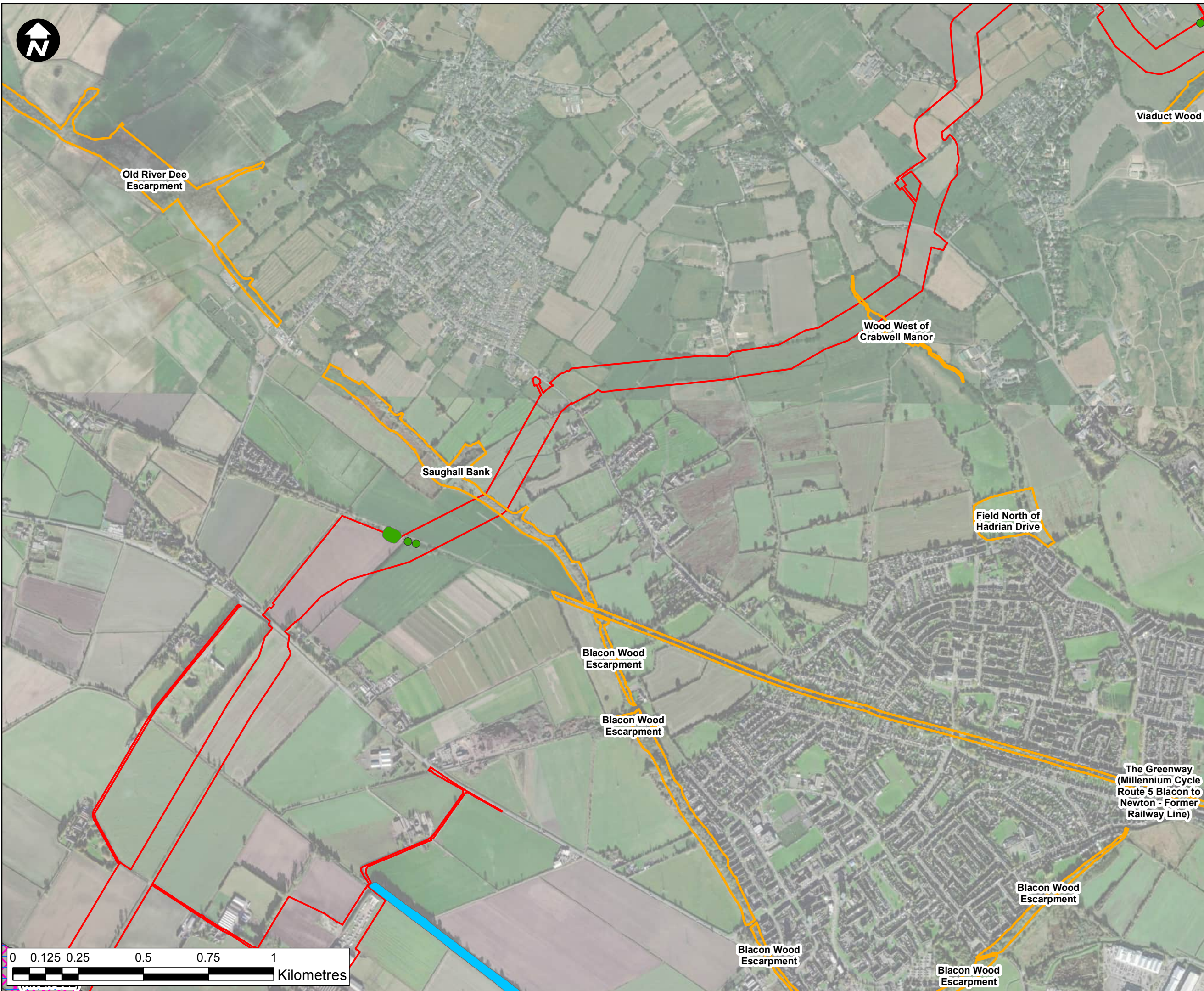
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- Key:**
- Newbuild Infrastructure Boundary
 - Special Area of Conservation (SAC)
 - Site of Special Scientific Interest (SSSI)
 - Local Wildlife Site (LWS)
 - Ancient Woodland
 - Veteran tree groups
 - Veteran tree points

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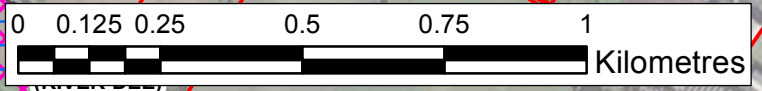
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Biodiversity Net Gain Assessment
Figure 3 - Designated Site Map

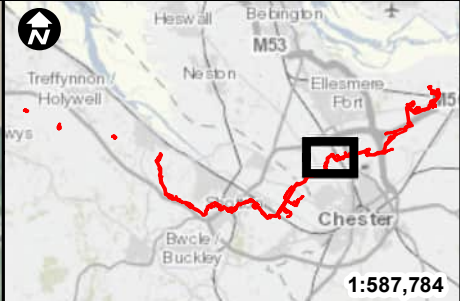
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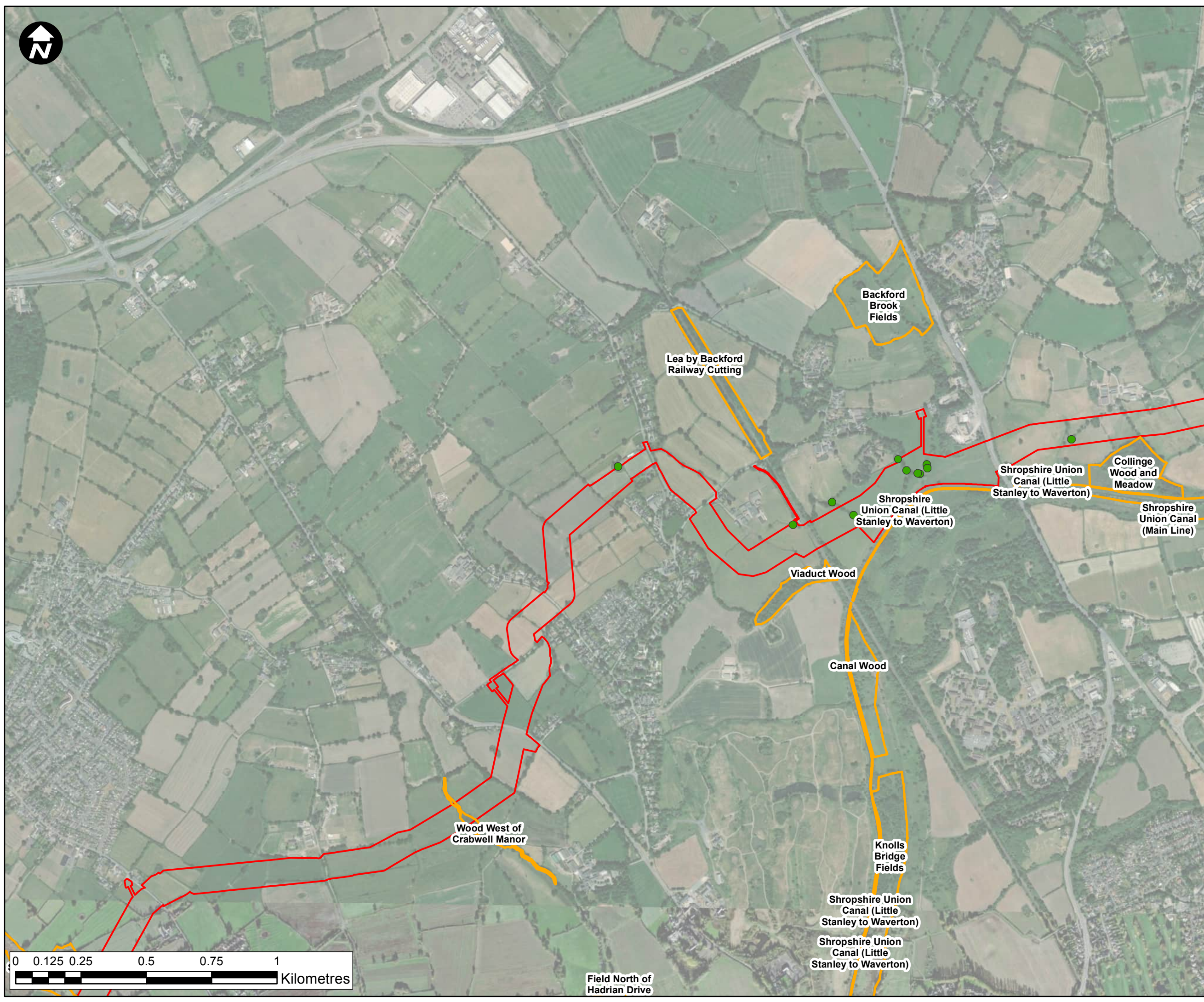
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- Key:**
- Newbuild Infrastructure Boundary
 - Local Wildlife Site (LWS)
 - Veteran tree points



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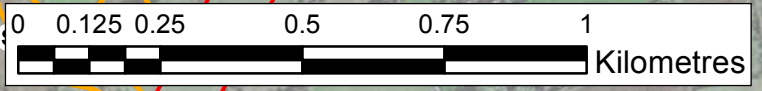
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Biodiversity Net Gain Assessment
Figure 3 - Designated Site Map

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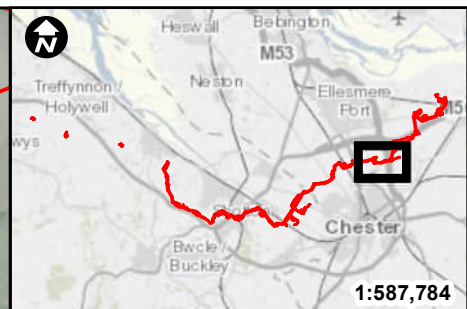
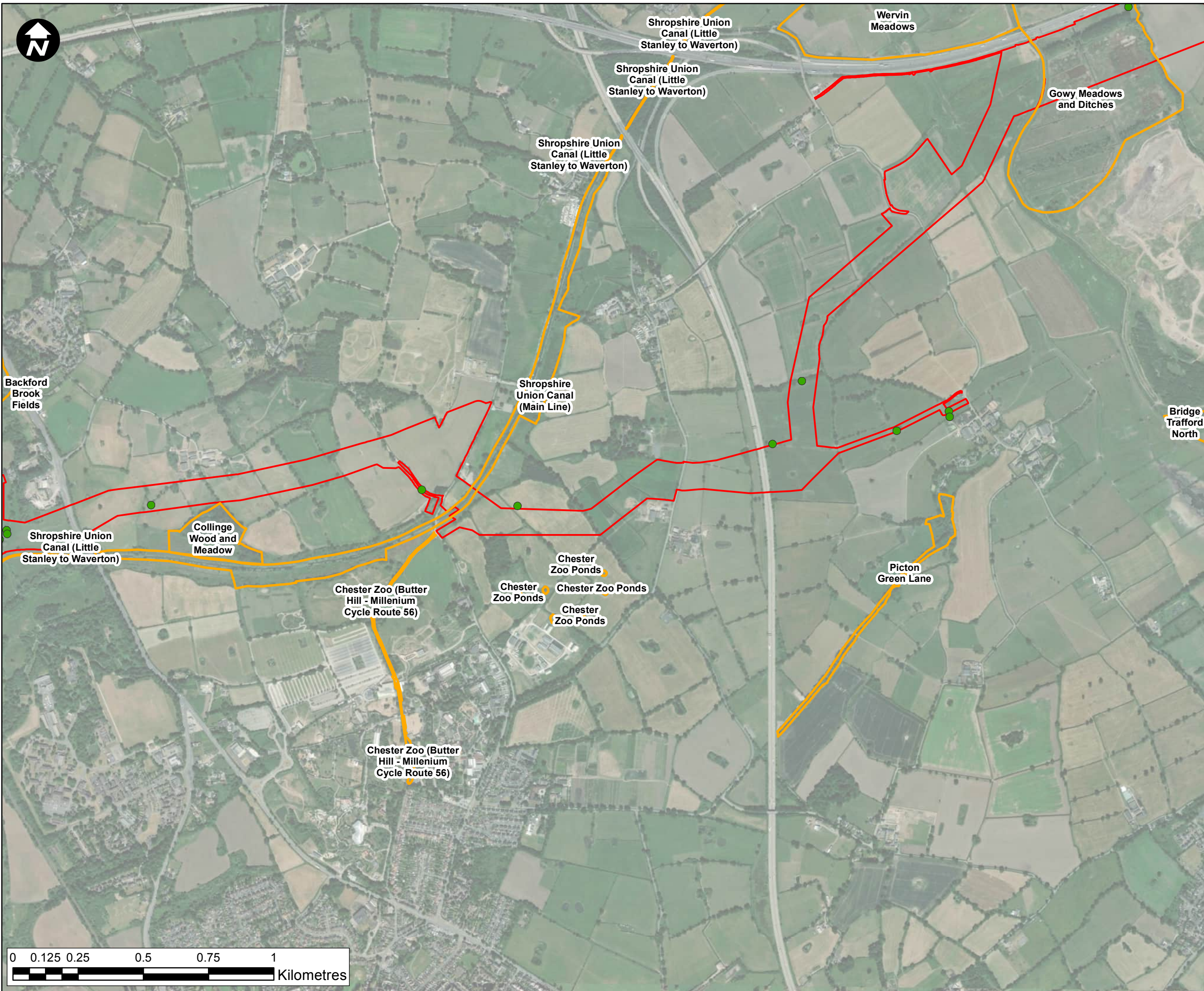
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Field North of Hadrian Drive



- Key:**
- Newbuild Infrastructure Boundary
 - Local Wildlife Site (LWS)
 - Veteran tree points

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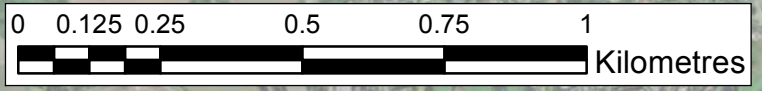
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Figure 3 - Designated Site Map

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- Key:**
- Newbuild Infrastructure Boundary
 - Local Wildlife Site (LWS)
 - Veteran tree points

Shropshire Union Canal (Little Stanley to Waverton)

Shropshire Union Canal (Little Stanley to Waverton)

Shropshire Union Canal (Little Stanley to Waverton)

Shropshire Union Canal (Little Stanley to Waverton)

Shropshire Union Canal (Little Stanley to Waverton)

Shropshire Union Canal (Little Stanley to Waverton)

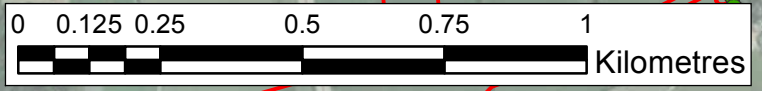
Shropshire Union Canal (Little Stanley to Waverton)

Gowy Meadows and Ditches

Wervin Meadows

Hoblane Ponds

Bridge Trafford North



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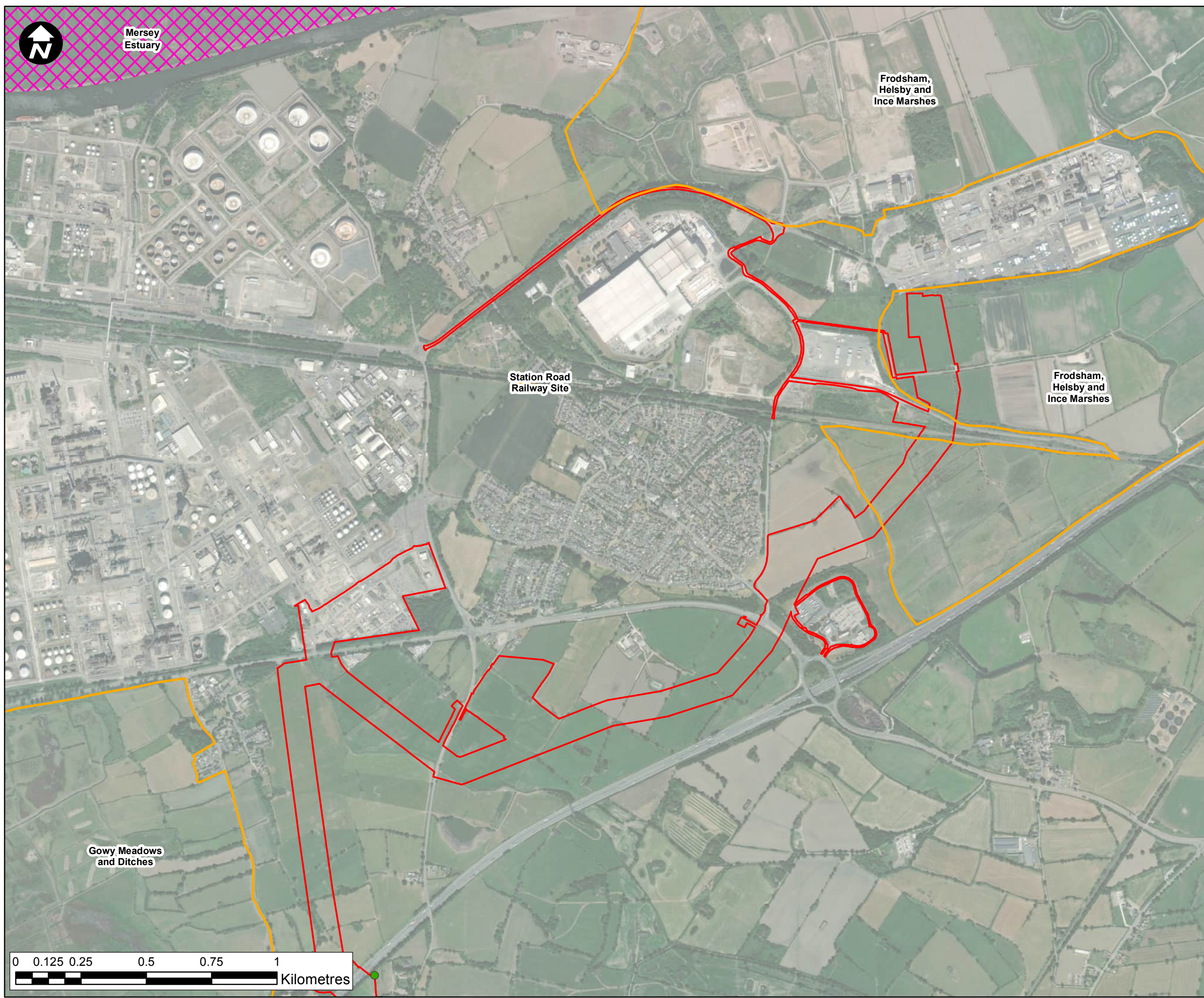
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Mersey Estuary



- Key:**
- Newbuild Infrastructure Boundary
 - Site of Special Scientific Interest (SSSI)
 - Local Wildlife Site (LWS)
 - Veteran tree points



Station Road Railway Site

Frodsham, Helsby and Ince Marshes

Frodsham, Helsby and Ince Marshes

Gowy Meadows and Ditches



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ANNEX C

BIODIVERSITY METRICS FOR ENGLAND AND WALES