

## ENVIRONMENTAL STATEMENT - (VOLUME III)

### APPENDIX 9.3 BAT ACTIVITY SURVEY REPORT

#### HyNet Carbon Dioxide Pipeline DCO

Planning Act 2008

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

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# 1. INTRODUCTION

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## 1.1. PROJECT BACKGROUND

- 1.1.1. This technical appendix provides information on the activity of bat species and supports the assessment contained in **Chapter 9: Biodiversity of the Environmental Statement (ES) (Volume II (Document Reference: D.6.2.9))**.
- 1.1.2. The Applicant intends to build and operate a new underground carbon dioxide (CO<sub>2</sub>) pipeline from Cheshire, England to Flintshire, Wales with necessary Above Ground Installations (AGIs) and Block Valve Stations (BVSs). It is classed as a Nationally Significant Infrastructure Project (NSIP) and will require a Development Consent Order (DCO) under the Planning Act 2008 ('PA2008') granted by the Secretary of State for Business, Energy and Industrial Strategy (BEIS).
- 1.1.3. The DCO Proposed Development will form part of HyNet North West ('the Project'), which is a hydrogen supply and Carbon Capture and Storage ('CCS') project. The goal of the Project is to reduce CO<sub>2</sub> emissions from industry, homes and transport and support economic growth in the North West of England and North Wales. The wider Project is based on the production of low carbon hydrogen from natural gas. It includes the development of a new hydrogen production plant, hydrogen distribution pipelines, hydrogen storage and the creation of CCS infrastructure. CCS prevents CO<sub>2</sub> entering the atmosphere by capturing it, compressing it and transporting it for safe, permanent storage.
- 1.1.4. The DCO Proposed Development is a critical component of HyNet North West which, by facilitating the transportation of carbon, enables the rest of the Project to be low carbon. The hydrogen production, distribution and CO<sub>2</sub> capture and storage elements of the Project do not form part of the DCO Proposed Development and will be delivered under separate consenting processes.
- 1.1.5. The DCO Application will seek consent for the construction, operation and maintenance of the following components which are part of the DCO Proposed Development, namely:
- **Ince Above Ground Installation (AGI) to Stanlow AGI Pipeline** – a section of new underground onshore pipeline (20" in diameter) to transport CO<sub>2</sub>;
  - **Stanlow AGI to Flint AGI Pipeline** – a section of new underground onshore pipeline (36" in diameter) to transport CO<sub>2</sub>;
  - **Flint AGI to Flint Connection Pipeline** – a section of new underground onshore pipeline (24" in diameter) to transport CO<sub>2</sub>;
  - **Flint Connection to Point of Ayr (PoA) Terminal Pipeline** – a section of existing Connah's Quay to Point of Ayr (PoA) underground onshore pipeline

(24" in diameter) which currently transports natural gas but would be repurposed and reused to transport CO<sub>2</sub>. The Flint Connection to PoA Terminal Pipeline is scoped out of the EIA, except for the areas adjacent to the three BVSs that are within the Newbuild Infrastructure Boundary;

- **Four AGIs** - Ince AGI, Stanlow AGI, Northop Hall AGI, and Flint AGI;
- **Six Block Valve Stations (BVSs)** - located along:
  - The new Stanlow AGI to Flint AGI Pipeline (three in total);
  - the existing Flint Connection to PoA Terminal Pipeline (three in total);
  - Other above ground infrastructure, including Cathodic Protection (CP) transformer rectifier cabinets and pipeline marker posts;
  - Utility Connection infrastructure, including power utilities and Fibre Optic Cable (FOC); and
  - Temporary ancillary works integral to the construction of the Carbon Dioxide Pipeline, including Construction Compounds and temporary access tracks.

1.1.6. Further details of each element of the DCO Proposed Development are set out in **Chapter 3 – Description of the DCO Proposed Development (Volume II)**.

## **1.2. ECOLOGICAL BACKGROUND**

1.2.1. Extended Phase 1 habitat surveys were undertaken from 2020, and continuing through 2021 and 2022, across the Newbuild Infrastructure Boundary for the DCO Proposed Development. Following these surveys, Preliminary Bat Roost Assessments (PBRAs) of structures and trees were undertaken.

1.2.2. The Newbuild Infrastructure Boundary is predominantly arable through industrial and rural village landscapes. Hedgerows, woodland, and grassland habitats are present throughout. A detailed description of habitats is provided in the **Habitats and Designated Sites Survey Report (Appendix 9.1, Volume III)**.

## **1.3. BRIEF SCOPE AND OBJECTIVES**

1.3.1. The purpose of the surveys to support the PBRAs was to:

- Undertake external and internal inspections of built structures across the Newbuild Infrastructure Boundary to assess their suitability to support roosting bats.
- Undertake ground-level and aerial inspections (where required and safe to do so) of trees across the Newbuild Infrastructure Boundary to assess their suitability to support roosting bats.
- Undertake dusk emergence/ dawn re-entry surveys of those structures and trees identified with suitability to support bat roosts to establish the presence/likely absence of bat roosts.
- Use the data collected from these surveys to assess the direct and indirect effects of the DCO Proposed Development on bats utilising the Newbuild

Infrastructure Boundary and provide suitable recommendations for avoidance, mitigation and compensation measures.

- 1.3.2. The results of these surveys are presented within this report. The impact assessment and recommendations for mitigation and compensation are presented within **Chapter 9: Biodiversity** of the **Environmental Statement (ES) (Volume II (Document Reference: D.6.2.9))**.

## 1.4. RELEVANT LEGISLATION AND POLICY

### LEGAL COMPLIANCE

- 1.4.1. This report 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.
- The Conservation of Habitats and Species 2017 (as amended) (**Ref. 1**);
  - The Wildlife and Countryside Act 1981 (as amended) (**Ref. 2**);
  - Natural Environment and Rural Communities Act (NERC) (**Ref. 3**);
  - Environment (Wales) Act 2016 (**Ref. 4**);
  - Planning Policy Wales (**Ref. 5**);
  - Flintshire County Council Supplementary Planning Guidance documents (**Ref. 6**); and
  - The Chester and Cheshire West local plan (**Ref. 7**).
- 1.4.2. Bat species are afforded a high level of protection under the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') (**Ref. 1**). The legislation outlines that it is an offence to
- *'Deliberately capture, injure, or kill a bat,*
  - *Damage or destroy a breeding site or resting place of a bat*
  - *Deliberately disturb bats in such a way as to be likely*
    - a) *to impair their ability -*
      - i) *to survive, to breed or reproduce, or to rear or nurture their young; or*
      - ii) *to hibernate or migrate; or*
  - *to affect significantly the local distribution or abundance of the species'.*
- 1.4.3. Protection is also partially afforded under the Wildlife and Countryside Act 1981 (as amended) (**Ref. 2**) with respect to disturbance of animals when using places of shelter or protection, and obstruction of access to places of shelter or protection.
- 1.4.4. Certain species of bats including noctule *Nyctalus noctula*, brown long-eared bat *Plecotus auritus* and soprano pipistrelles *Pipistrellus pygmaeus* are also

listed as a Species of Principal Importance (SPI) for the Conservation of Biodiversity in accordance with Section 41 of the NERC Act 2006 (**Ref 3**). Under Section 40 of the NERC Act (**Ref 3**), public bodies (including local planning authorities) have a duty to have regard for the conservation of SPI when carrying out their functions, including determining planning applications.

- 1.4.5. Certain species of bat, including barbastelle *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule, brown long-eared bat, lesser horseshoe bat *Rhinolophus hipposideros*, greater horseshoe bat *Rhinolophus ferrumequinum*, common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle are also listed as SPI for the purpose of maintaining and enhancing biodiversity in relation to Wales under Section 7 of the Environment (Wales) Act 2016 (**Ref. 4**). Section 6 under Part 1 introduced an enhanced biodiversity and resilience of ecosystems duty (the S6 duty) for public authorities in the exercise of functions in relation to Wales, superseding provisions previously set out in the NERC Act 2006.

### PLANNING POLICY COMPLIANCE

- 1.4.6. At the national level, the National Planning Policy Framework (NPPF) (2019) (**Ref. 8**) forms the basis for planning system decisions with respect to conserving and enhancing the natural environment, including bats, the ODPM circular 06/2005 also provides supplementary guidance, including confirmation that 'the presence of a protected species is a material consideration when a planning authority is considering a development proposal'.
- 1.4.7. The NPPF sets out, amongst other points, how at an overview level the:
- *'Planning system should contribute to and enhance the national and local environment by recognising the wider benefits of natural capital and ecosystem services; and minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.'*
- 1.4.8. A list of principles which local planning authorities should follow when determining planning applications is included in the NPPF, and includes the following:
- *If significant harm resulting from a development cannot be avoided... adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
  - *Opportunities to incorporate biodiversity in and around developments should be encouraged;*

- *Development resulting in the loss or deterioration of irreplaceable habitats should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.*

1.4.9. Planning Policy Wales (**Ref. 5**) Chapter 5 outlines that:

- *‘Proposals for which development works would contravene the protection afforded to European protected species require derogations from the provisions of the Habitats Directive.*
- *A derogation may only be authorised if*
  - i) *There is no satisfactory alternative,*
  - ii) *If the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range, and*
  - iii) *The development works to be authorised must be for the purposes of preserving ‘public health or safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment’*

1.4.10. The Flintshire County Council Supplementary Planning Guidance (‘SPG’) 2017 (**Ref. 6**) also provide information and advice regarding aspects to consider during the planning process. SPG Number 8 Nature Conservation and Development outlined that before planning permission is granted, the Council needs to address three tests during its decision on the application:

- ‘1. there is ‘no satisfactory alternative’,*
- 2. it is ‘not detrimental to the maintenance of the populations of the species concerned at favourable conservation status in their natural range’*
- 3. it is ‘in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment’.*

## 2. BASELINE METHODOLOGY

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### 2.1. OVERVIEW

- 2.1.1. During 2021 and 2022, the following bat surveys were undertaken to support the DCO Proposed Development:
- PBRA surveys of structures and trees;
  - Aerial tree-climb inspection surveys;
  - Dusk emergence and dawn re-entry roost surveys;
  - Bat activity surveys using static detectors; and
  - DEFRA Local Scale Surveys.
- 2.1.2. The results of the bat activity surveys using static detectors and DEFRA Local Scale surveys are provided in the **Bats and Hedgerow Assessment (Appendix 9.4, Volume III)**.
- 2.1.3. The above roost assessment surveys were undertaken, and this report prepared, in line with current best practice guidelines published by the Bat Conservation Trust (**Ref. 9**).

### 2.2. DESK STUDY

- 2.2.1. The desk study was undertaken in 2020 to review existing ecological baseline information including any sites designated for the presence of bats within 30km of the Newbuild Infrastructure Boundary and to obtain information held by relevant third parties from the last ten years within 2km of the Newbuild Infrastructure Boundary. Records of protected and/or notable species were requested from:
- Cofnod (North Wales Environmental Information Service); and
  - rECOrd (Cheshire, Halton, Warrington and Wirral record centre).
- 2.2.2. The findings of the desk study have been incorporated within **Section 3** of this report and are detailed in **Annex B**.

### 2.3. PRELIMINARY BAT ROOST ASSESSMENT SURVEYS

- 2.3.1. Based on the features present and the location of the structure or tree, the potential for different types of bat roost was also considered. For the purpose of this preliminary roost assessment, potential roost types were grouped as follows (**Ref. 9**):
- Maternity (breeding roost);
  - Summer / transitional (to include transitional, satellite, night and day roosts); and,
  - Hibernation.
- 2.3.2. These surveys were carried out between March 2021 and July 2022.



## Structures

- 2.3.3. Buildings and structures were inspected from ground level using binoculars and a high-powered torch. Buildings were inspected externally and internally where safe to do so and permissible in line with COVID-19 government guidelines. Potential Roosting Features (PRFs) were identified and recorded including suitable access points for bats, gaps in mortar, missing bricks, lifted lead flashing, missing roof tiles and gaps behind soffits and fascias. These features were searched for the presence of bats or evidence such as droppings, staining and feeding signs.
- 2.3.4. Buildings and structures were assessed for their suitability to support roosting bats and categorised in line with **Table 1** below, adapted from the Good Practice Guidelines (**Ref. 9**).

## Trees

- 2.3.5. Trees were inspected to identify PRFs for bats. Inspections were initially conducted from the ground using binoculars and a high-powered torch. A brief description of the tree's character was noted, along with surrounding habitat suitability for bats. Trees were photographed and mapped using tablets with GPS functionality, and the tree was tagged with a number, where possible. All features identified and considered suitable for use by roosting bats were recorded including woodpecker holes, knot holes, tear-outs, wounds, hazard-beams, frost cracks, lightning strikes etc.
- 2.3.6. PRFs were then examined for the presence of bats or evidence of roosting bats by a licensed ecologist, where accessible and safe to do so. Evidence could include bat droppings, scratches, smoothing, staining and odour.
- 2.3.7. Trees were assessed for their suitability to support roosting bats and categorised in line with **Table 1** below, adapted from the Good Practice Guidelines (**Ref. 9**).

**Table 1 - Roost Suitability Categorisation**

Category	Description
Confirmed	Structure or tree with features confirmed to be used by roosting bats either by historic records (verified appropriately), or evidence recorded during survey.
High	Structure or tree with one or more suitable roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat.

Category	Description
Moderate	Structure or tree with one or more suitable roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, irrespective of species conservation status of this stage).
Low	Structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these roost sites do not provide enough space, shelter, or suitable surrounding conditions to support large numbers of bats.  Tree of sufficient size and age to contain suitable roost sites but with none seen from the ground or features seen with only very limited roosting potential.
Negligible	Structure or tree with no suitable opportunities for roosting bats, or very few or minor features in an isolated/unsuitable location such that the presence of a roost is considered highly improbable. E.g., isolated from suitable foraging or commuting habitats.

## 2.4. AERIAL TREE CLIMB INSPECTION SURVEYS

- 2.4.1. In total, 86 trees were searched via climber inspection surveys by a Natural England (NE) and / or Natural Resources Wales (NRW) bat licensed ecologist.
- 2.4.2. If the PRFs recorded were unable to be inspected from ground level, an aerial tree-climb inspection was completed at trees that were considered safe to climb. These surveys were undertaken by a minimum of two qualified tree climbers working under a minimum of a Class 2 NE bat licence and/ or NRW bat licence. Aerial tree-climb inspections were completed using an endoscope and a high-powered torch. The character, profile and suitability of PRFs to support a bat roost were recorded for all aerially inspected features, alongside the presence/absence of bats or evidence of bat use.
- 2.4.3. Where aerial tree climbing inspections were considered sufficient to thoroughly check all the PRFs on a tree, the tree climbing survey result was taken to replace one of the evening dusk emergence or dawn re-entry survey.

## 2.5. DUSK EMERGENCE AND DAWN RE-ENTRY SURVEYS

- 2.5.1. In total, 91 structures and trees have so far been subject to dusk emergence or dawn re-entry surveys. Surveys of the remaining trees and structures will be

completed in 2022. A full list of survey dates and weather data for each survey can be found in **Annex F**.

- 2.5.2. Dusk emergence and dawn re-entry surveys were undertaken during the 2021 and 2022 bat survey season from May to August with at least two weeks between each visit, in line with the Good Practice Guidelines (**Ref. 9**). The survey effort for each feature type is outlined in **Table 2** below. Where a survey visit was conducted in September, this only occurred where at least one visit was conducted between May and August, inclusive.
- 2.5.3. Dusk emergence surveys involved the monitoring of identified PRFs on suitable trees and structures from 15 minutes before sunset to 1.5 hours after sunset. Dawn re-entry surveys involved the monitoring of identified PRFs on suitable trees and structures from 1.5 hours before sunrise to 15 minutes after sunrise.
- 2.5.4. Surveys were undertaken in suitable weather conditions, generally taken to be:
- A temperature of 10°C at dusk; and
  - Absence of strong winds (6 or above on the Beaufort scale); and
  - Dry or light rain only (2 or below on scale of 0-5).

**Table 2 - Survey Effort for Bat Surveys at Structures and Trees**

	<b>Low Roost Suitability</b>	<b>Moderate Roost Suitability</b>	<b>High Roost Suitability/Confirmed Roost</b>
<b>Structures</b>	One survey visit between May and August	Two separate survey visits (one dusk and a separate dawn) May-September with at least one survey between May and August	Three separate survey visits (at least one dusk and a separate dawn) May-September, with at least two surveys between May and August
<b>Trees</b>	No further surveys required		

- 2.5.9. The surveyors were equipped with full spectrum devices comprising Elekon Batlogger 'M' or Echo Meter Touch 2 Pro bat detectors to listen to and record echolocation calls of bats observed. During the survey, surveyors mapped the flight-lines used by bats and noted any features used by the bats to exit or enter the structure or tree. Incidental records of bat activity in the vicinity of the surveyor locations were also collected.
- 2.5.10. Cannon XA11 Infra-red camera(s) were deployed on approximately 10% of trees, prioritising features where visibility in darkness was most difficult. Between one and four cameras were used at a feature, depending on the level of cover required. Cameras were positioned to film PRFs identified from the

PBRA surveys in addition to the surveyor. Separate infra-red illuminators were set up to improve the view of the camera and illuminate features. Following the surveys, the infra-red footage was reviewed on a computer to check for any roost evidence that may have been missed, or confirm any potential roosts identified by the surveyor during the surveys.

## DATA ANALYSIS

2.5.11. Following the dusk emergence and dawn re-entry surveys, the recorded calls were analysed using Wildlife Acoustics Kaleidoscope (Version 5.4.7) and Elekon Bat Explorer (Version 2.1) sound analysis software to verify bat species. Where possible, bat calls were identified to species level. However, species of the genus *Myotis* were grouped together in most cases as their calls are similar in structure and have overlapping call parameters, making species identification problematic (**Ref 10**, **Ref 11** and **Ref 12**). For *Pipistrellus* species, the following criteria based on measurements of peak frequency were used to classify calls:

- Common pipistrelle  $\geq 42$  and  $<49$ KHz;
- Soprano pipistrelle  $\geq 51$ KHz;
- Nathusius' pipistrelle *Pipistrellus nathusii*  $<39$ KHz;
- Common/soprano pipistrelle  $\geq 49$  and  $<51$ KHz; and
- Common/Nathusius' pipistrelle  $\geq 39$  and  $<42$ KHz.

2.5.12. In addition, the following categories were used for calls that could not be identified with confidence due to the overlap in call characteristics between species or species groups:

- *Nyctalus* sp. (either Leisler's bat *Nyctalus leisleri* or noctule); and
- Noctule/Leisler's bat/serotine *Eptesicus serotinus*

## 2.6. DATES OF SURVEY AND PERSONNEL

2.6.1. Bat surveys, including external building assessments, were led by experienced surveyors with a minimum of two years' experience of undertaking bat surveys and included licensed individuals. Surveys were carried out under the following licence numbers:

- 2017-32292-CLS-CLS (NE)
- 2015-15891-CLS-CLS (NE)
- 2015-15829-CLS-CLS (NE)
- S088709/3 (NRW)

2.6.2. The timing of survey visits is available in **Table 8**, **Table 9** and **Table 10** in **Annex E** and **Annex F**.

## 2.7. NOTES AND LIMITATIONS

- 2.7.1. Records held by local biological record centres and local recording groups are generally collected on a voluntary basis. Therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage. In the case of bat roosts, the type of roost is often unrecorded due to the difficulty of interpreting such data.
- 2.7.2. As a result of the COVID-19 pandemic, restrictions on survey method were imposed to safeguard surveyor and public health and structures were only inspected externally to protect the surveyors and occupants. Full viewshed of the structures was obtained where possible and all structures were subject to the recommended survey efforts as described in **Table 2**, enabling a full external assessment. As such, the lack of internal inspection is not expected to have impacted the results or conclusions presented within this report.
- 2.7.3. Surveys across the Newbuild Infrastructure Boundary are ongoing within 2022. As such, this report has been prepared on the basis of survey results accrued up to 30 June 2022, and further information will be submitted as Supplementary Information following the DCO Application.
- 2.7.4. Surveys are confined to land where access has been permitted. Access was limited at certain features where adjoining landowners have not agreed access concurrently which may reduce views of the target feature. Where this is the case, a conservative assumption was made based on available data or the feature was re-surveyed when access became available.
- 2.7.5. Some features on structures or trees were obscured by vegetation or other obstructions. Where this was the case, surveyors on dusk emergence surveys and dawn re-entry surveys orientated themselves to achieve the best possible coverage of the features. If this was not possible, the surveys were repeated when further access was available, or an extra aerial tree climb inspection was considered in the case of trees.
- 2.7.6. Not all trees with moderate or high suitability to support bat roosts were able to be subjected to an aerial tree climb inspection survey due to health and safety concerns or access issues. Where this was the case, the correct survey effort was carried out through dusk emergence and dawn re-entry surveys.
- 2.7.7. Some dusk emergence and dawn re-entry surveys were constrained by equipment malfunction and failure. However, as there is always more than one surveyor in the vicinity of the target feature during each survey, the recordings from the nearest surveyor were used to determine species. Where data was not suitable then the survey was repeated. This is not thought to have affected the results of the surveys.
- 2.7.8. A dusk emergence survey carried out on T105 on 05 October 2021 was carried out in suboptimal windy conditions. No bats were detected, but this is not

thought to have affected results as the tree was found fallen on 03 March 2022. The tree was downgraded to a negligible suitability to support bat roosts and the second scheduled survey cancelled.

### 3. RESULTS

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#### 3.1. DESK STUDY

- 3.1.1. The results of the desk study are summarised below. Full results of records for bat species can be found in **Annex B**.

##### **Newbuild Infrastructure Boundary**

- 3.1.2. No SACs which are designated for bats were identified within 30km of the Newbuild Infrastructure Boundary. In addition, no SSSIs designated for bats were identified within 2km of the Newbuild Infrastructure Boundary.
- 3.1.3. The desk study from rECOrd returned 131 records of bats within 2km of the Newbuild Infrastructure Boundary from the last ten years. Seven of these records pertained to confirmed bat roosts, the closest being 0.59km south-east of the Newbuild Infrastructure Boundary and pertaining to two soprano pipistrelles. The closest record overall related to 77 common pipistrelles and 8 soprano pipistrelles 0.05km west of the Newbuild Infrastructure Boundary in 2017. The most recent record was of a common pipistrelle 0.69km to the south in 2020.
- 3.1.4. The desk study from Cofnod returned 32 records of bats within 2km of the Newbuild Infrastructure Boundary from the last ten years. Eight of these records pertained to confirmed bat roosts, the closest being 0.34km west of the Newbuild Infrastructure Boundary and pertaining to a day roost of a single lesser horseshoe bat. The closest record related to 11 common pipistrelles 0.01km to the south of the Newbuild Infrastructure Boundary in 2012. The most recent record was of a noctule 1.69km to the west of the Newbuild Infrastructure Boundary in 2019.
- 3.1.5. There are also unconfirmed bat species records and unidentified pipistrelle species records where the species has not been confirmed or identified to species level.
- 3.1.6. From these records, there were no confirmed or potential bat roosts within the Newbuild Infrastructure Boundary. There were 15 confirmed or potential bat roosts recorded within 2km of the Newbuild Infrastructure Boundary from the last ten years. Due to these records being collected mostly on a volunteer basis, the potential roost type is unknown in all but one record. These roosts are detailed in **Table 3**.

**Table 3 - Confirmed/Potential Bat Roosts Within 2km of the Newbuild Infrastructure Boundary from the Last Ten Years**

<b>Species</b>	<b>Date of Record</b>	<b>Estimated roost size</b>	<b>Distance and Orientation from Site</b>
Lesser Horseshoe bat	06/06/2016	1 bat (Day roost)	0.34km south-west
Common pipistrelle	01/08/2019	2 bats	0.45km east
Soprano pipistrelle	01/08/2019	1 bat	0.45km east
Lesser horseshoe bat	01/08/2019	1 bat	0.45km east
Brown long-eared bat	01/05/2012	2 bats	0.49km north-west
Common pipistrelle	01/05/2012	4 bats	0.49km north-west
Soprano pipistrelle	13/08/2019	2 bats	0.59km south-east
Pipistrelle sp.	11/03/2020	2 bats	0.69km south
Pipistrelle sp.	12/03/2020	2 bats	0.69km south
Soprano pipistrelle	02/07/2019	1 bat	0.74km south
Soprano pipistrelle	25/07/2019	1 bat	0.74km south
Brown long-eared bat	11/03/2020	1 bat	0.79km south
Brown long-eared bat	25/09/2012	1 bat	0.8km south
Brown long-eared bat	07/2012	2 bats	0.86km north
Pipistrelle sp.	18/06/2012	Unknown – only droppings present	1.44km south-west



## 3.2. PRELIMINARY ROOST ASSESSMENT SURVEYS

### Structures

- 3.2.1. Following PBRA surveys, 91 structures were identified within the Newbuild Infrastructure Boundary. Of these, 80 were classified as having Negligible suitability to support roosting bats and therefore were not carried forward for further surveys. A total 11 structures were assessed as having suitability to support roosting bats. This comprised of:
- 6 structures with low suitability to support roosting bats;
  - 4 structures with moderate suitability to support roosting bats; and
  - 1 structure with high suitability to support roosting bats.
- 3.2.2. No roosts were identified during PBRA surveys. Full results of the structures inspection surveys are provided in **Annex C; Table 6** and presented in **Figure 9.3.1**. Photographs are shown in **Annex G; Table 11**.

### Trees

- 3.2.3. Following ground level tree inspection surveys, 448 trees were assessed as having suitability to support roosting bats. This comprises:
- 217 trees with low suitability to support roosting bats;
  - 196 trees with moderate suitability to support roosting bats;
  - 35 trees with high suitability to support roosting bats.
- 3.2.4. No roosts were identified during PBRA surveys.
- 3.2.5. Full results of the tree inspection surveys are provided in **Annex D; Table 7**. Photographs are shown in **Annex G; Table 11**.

## 3.3. AERIAL TREE CLIMB INSPECTION SURVEYS

- 3.3.1. A total of 86 trees were then subject to aerial tree climbing inspections, where the tree was safe and accessible. Following the aerial tree climbing inspections, the numbers of trees with suitability to support bat roosts was adjusted as follows:
- 12 trees with negligible suitability to support roosting bats:
    - All downgraded from moderate and high suitability during the aerial tree climbing surveys;
  - 258 trees with low suitability to support roosting bats:
    - 41 trees downgraded to low suitability from moderate and high suitability following the aerial tree climbing surveys;
  - 144 trees with moderate suitability to support roosting bats:
    - 1 tree downgraded to moderate suitability from high suitability following tree climbing surveys
  - 34 trees with high suitability to support roosting bats:

- 6 trees upgraded to high suitability from moderate suitability following the aerial tree climbing surveys.

3.3.2. No roosts were identified during aerial tree climbing inspection surveys. Full results of the ground level tree inspection surveys and results following the aerial tree climbing inspections are provided in **Annex D; Table 7** and **Figure 9.3.2**.

### 3.4. DUSK EMERGENCE AND DAWN RE-ENTRY SURVEYS

3.4.1. The following bat species were recorded during the dusk emergence and dawn re-entry surveys. Behaviours recorded included foraging or commuting close to the target survey features:

- Common pipistrelle
- Soprano pipistrelle
- *Myotis* spp.
- Brown long-eared bat
- Noctule

3.4.2. Due to low light levels, vegetation cover, or surveyor location, visibility of some emergences or re-entries from target features was reduced. These instances were treated as confirmed roosts, all of which are detailed in **Annex E; Table 8** and presented in **Figure 9.3.3**

#### STRUCTURES

3.4.3. Following the PBRA surveys of structures, 6 structures have so far been subjected to dusk emergence and dawn re-entry surveys. These surveys have identified a bat roost in a single structure within the Newbuild Infrastructure Boundary. It was being utilised by a single common pipistrelle as a day roost. Confirmed bat roosts are detailed in **Annex E; Table 8** and presented in **Figure 9.3.3**.

#### TREES

3.4.4. Following the PBRA surveys and aerial tree climb inspections, 85 trees have so far been subject to dusk emergence and dawn re-entry surveys. These surveys have identified bat roosts in nine trees within the Newbuild Infrastructure Boundary, as well as one suspected roost. Of these roosts, eight were being utilised by a single common or soprano pipistrelle as a day roost. The suspected roost in T325-327 is believed to be utilised by multiple brown long-eared bats, and surveys are ongoing to confirm this. The roost in T321 is being utilised by multiple noctules as a maternity roost. Confirmed bat roosts are detailed in **Annex E; Table 8** and presented in **Figure 9.3.3**.

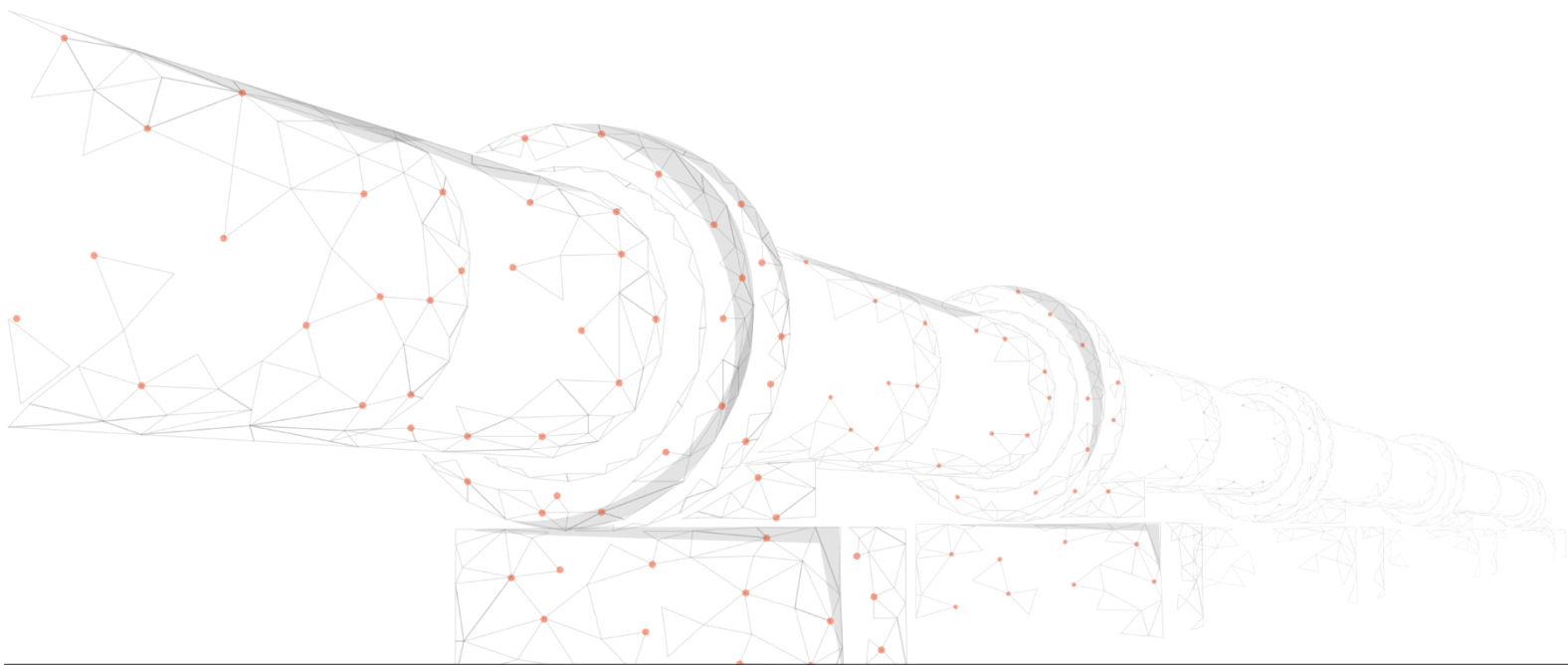
### 3.5.

## REFERENCES

- **Ref. 1:** Her Majesty's Stationary Office (HMSO) (2017). *The Conservation of Habitats and Species Regulations 2017 (as amended)*. HMSO, Norwich.
- **Ref. 2:** HMSO (1981). *Wildlife and Countryside Act (as amended by the Countryside and Rights of Way Act 2000)*. HMSO, Norwich.
- **Ref. 3:** HMSO (2006) *Natural Environment and Rural Communities Act* HMSO, Norwich.
- **Ref. 4:** HMSO (2016) *Environment (Wales) Act 2016*. Welsh Government.
- **Ref. 5:** Welsh Government (2021). *Planning Policy Wales, Planning Policy Wales – Edition 11*.
- **Ref. 6:** Flintshire County Council Local Plan (2021) *Flintshire County Council Supplementary Guidance Documents* Supplementary Guidance.
- **Ref. 7:** The Chester and Cheshire West Local Plan (2017), *Cheshire West and Cheshire Council, Local Plan, Part Two: Land Allocations and Detailed Policies*.
- **Ref. 8:** Department for Communities and Local Government (DCLG) (2019). *The National Planning Policy Framework*. DCLG, London.
- **Ref. 9:** Collins J. (ed.) (2016) *Bat Surveys for Professional Ecologists, Good Practice Guidelines (3rd Edition)*. The Bat Conservation Trust, London.
- **Ref. 10:** Russ, J (2021) *Bat Calls of Britain and Europe: A Guide to Species Identification*. Pelagic Publishing, Exeter.
- **Ref. 11:** Russ, J (2012) *British Bat Calls: A Guide to Species Identification*. Pelagic Publishing, Exeter.
- **Ref. 12:** Middleton, N (2020) *Is That a Bat? A Guide to Non-Bat Sounds Encountered During Bat Surveys*. Pelagic Publishing, Exeter.

# Annex A

## FIGURES







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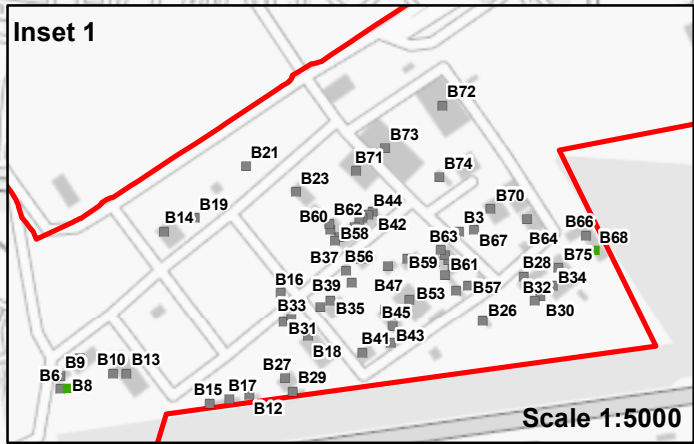
Newbuild Infrastructure Boundary

**BBS Points**

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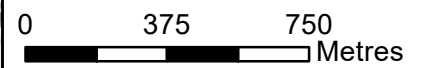
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- Likely absent - High
- Likely absent - Moderate
- Low
- Negligible
- Unconfirmed

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**HyNet North West**

**PROJECT TITLE**  
**HyNet Carbon Dioxide Pipeline DCO**

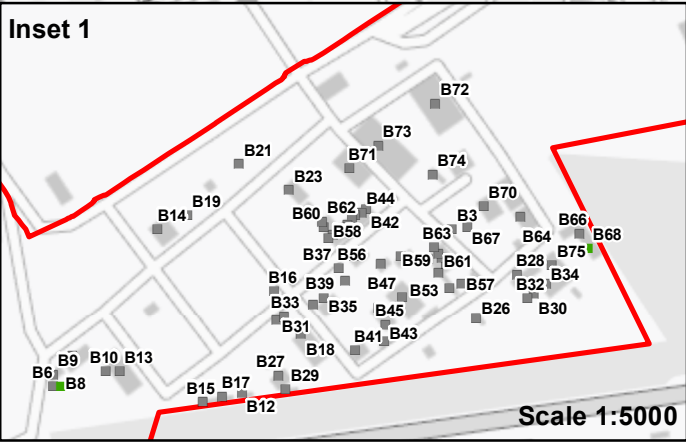
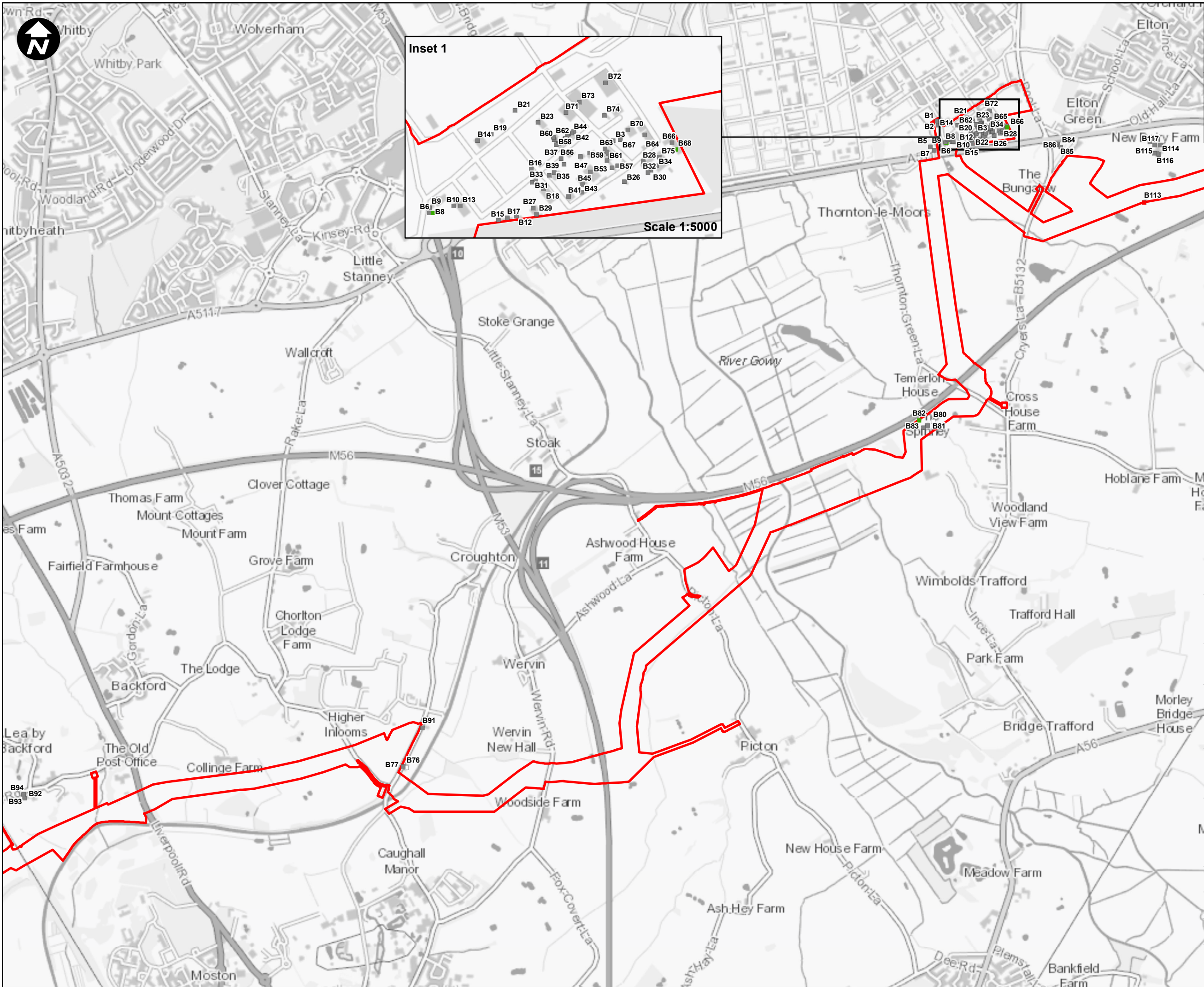
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D.6.3.9.3 Figure 9.3.1-Sheet 1





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**Key:**

- Newbuild Infrastructure Boundary

**BBS Points**

**Suitability**

- Confirmed Roost
- Likely absent - High
- Likely absent - Moderate
- Low
- Negligible
- Unconfirmed

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**HyNet North West**

**PROJECT TITLE**

HyNet Carbon Dioxide Pipeline DCO

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Figure 9.3.1 - Structures with Suitability to Support Bat Roosts Sheet 2 of 6

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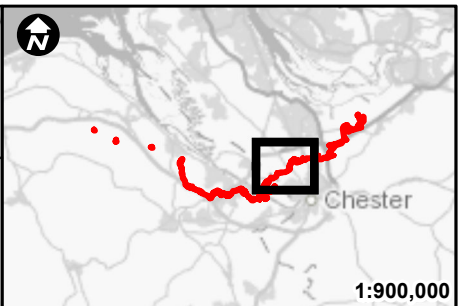
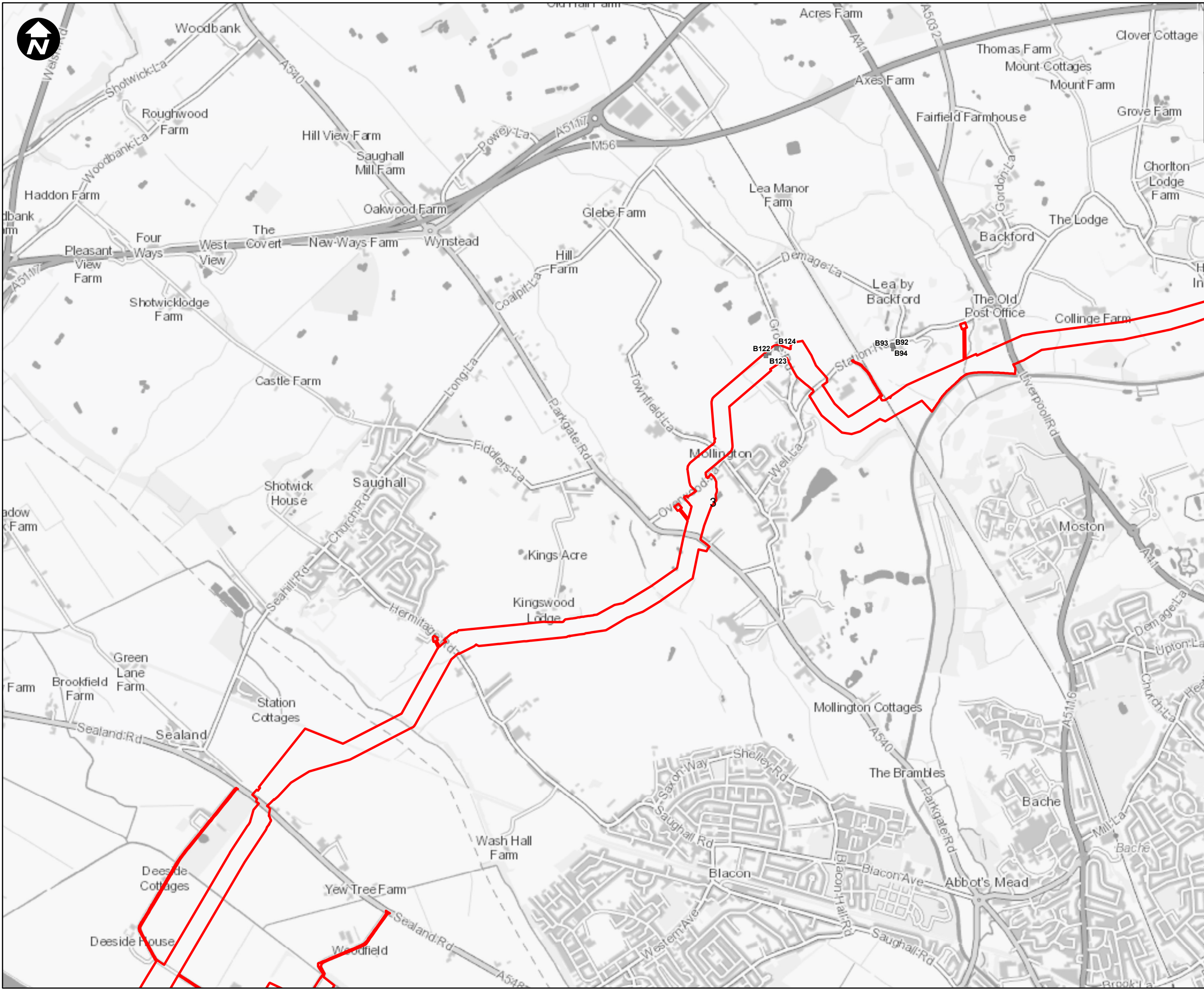
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D.6.3.9.3 Figure 9.3.1-Sheet 2





**Key:**

Newbuild Infrastructure Boundary

**BBS Points**

**Suitability**

- Confirmed Roost
- Likely absent - High
- Likely absent - Moderate
- Low
- Negligible
- Unconfirmed



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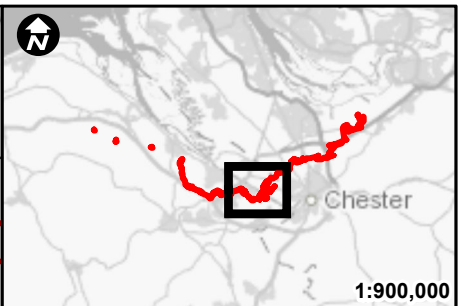
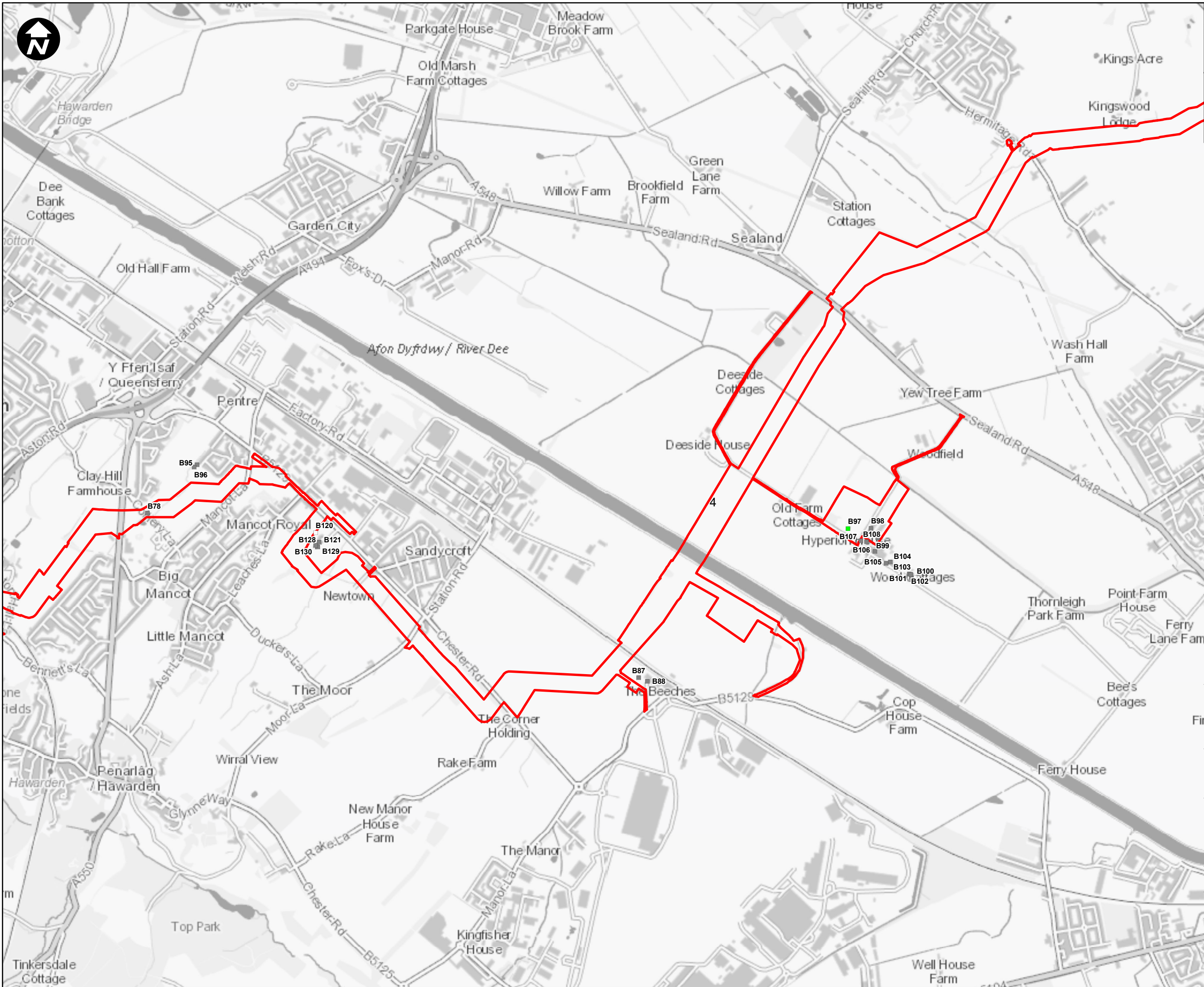
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D.6.3.9.3 Figure 9.3.1-Sheet 3			





**Key:**

Newbuild Infrastructure Boundary

**BBS Points**

**Suitability**

- Confirmed Roost
- Likely absent - High
- Likely absent - Moderate
- Low
- Negligible
- Unconfirmed

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**HyNet North West**

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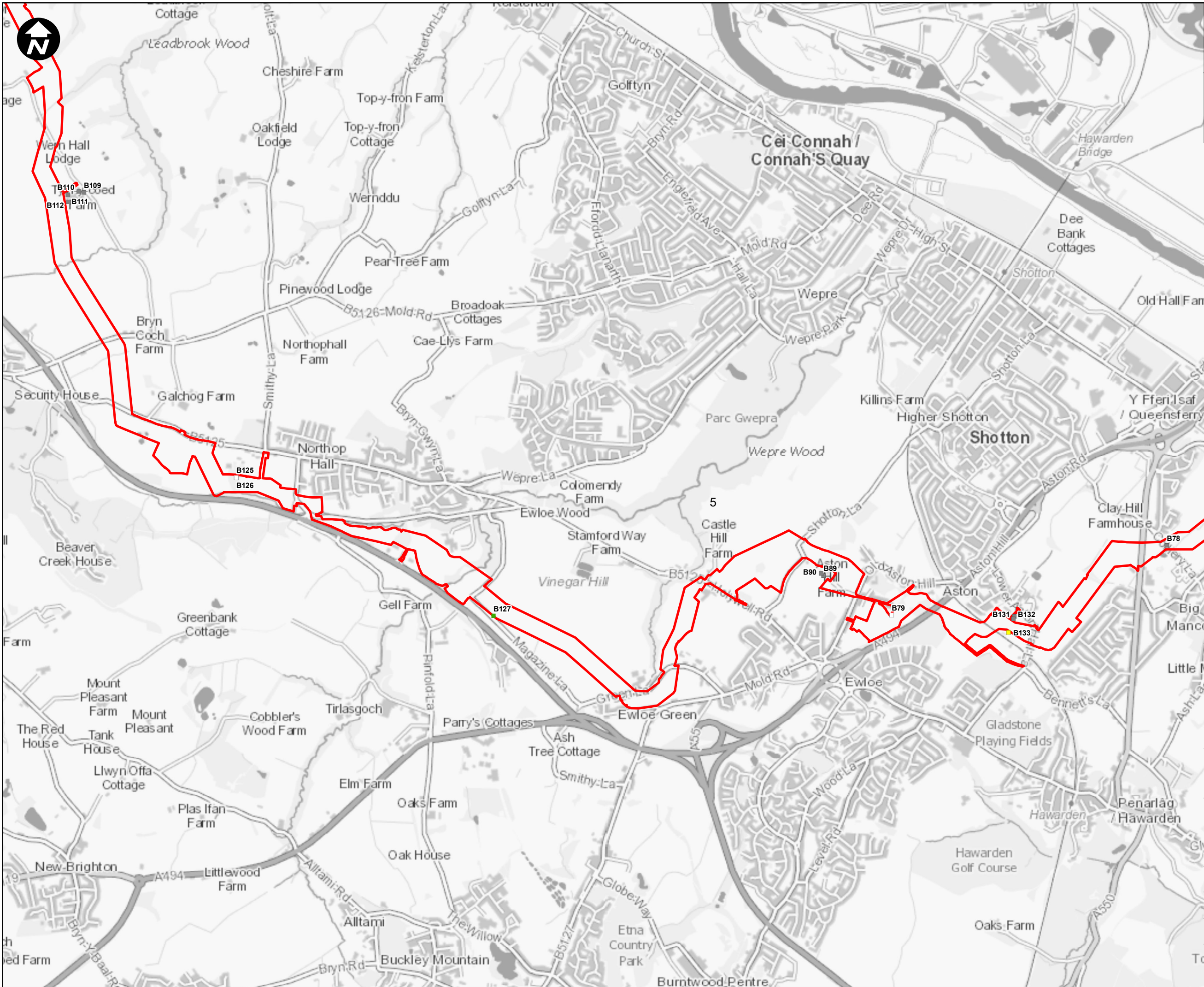
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Figure 9.3.1 - Structures with Suitability to Support Bat Roosts Sheet 4 of 6

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D.6.3.9.3 Figure 9.3.1-Sheet 4			





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**Key:**

Newbuild Infrastructure Boundary

**BBS Points**

**Suitability**

- Confirmed Roost
- Likely absent - High
- Likely absent - Moderate
- Low
- Negligible
- Unconfirmed

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PROJECT TITLE

**HyNet Carbon Dioxide Pipeline DCO**

DRAWING TITLE

Figure 9.3.1 - Structures with Suitability to Support Bat Roosts Sheet 5 of 6

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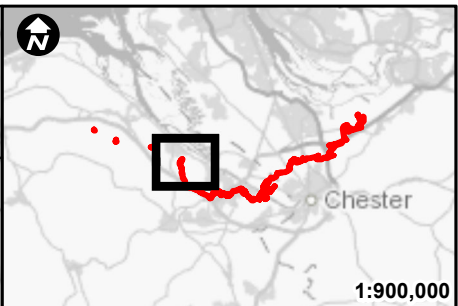
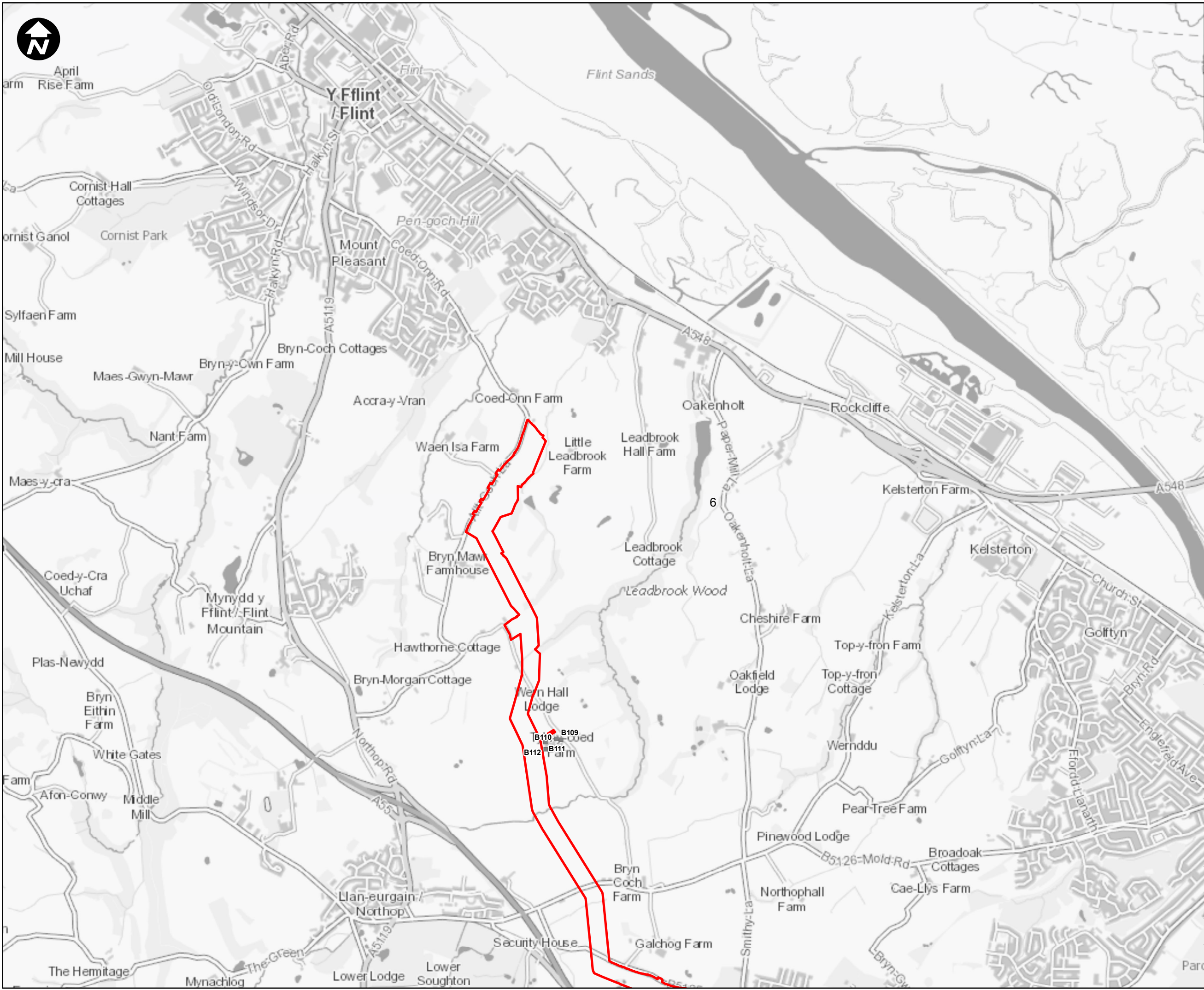
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D.6.3.9.3 Figure 9.3.1-Sheet 5





**Key:**

Newbuild Infrastructure Boundary

**BBS Points**

**Suitability**

- Confirmed Roost
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- Low
- Negligible
- Unconfirmed



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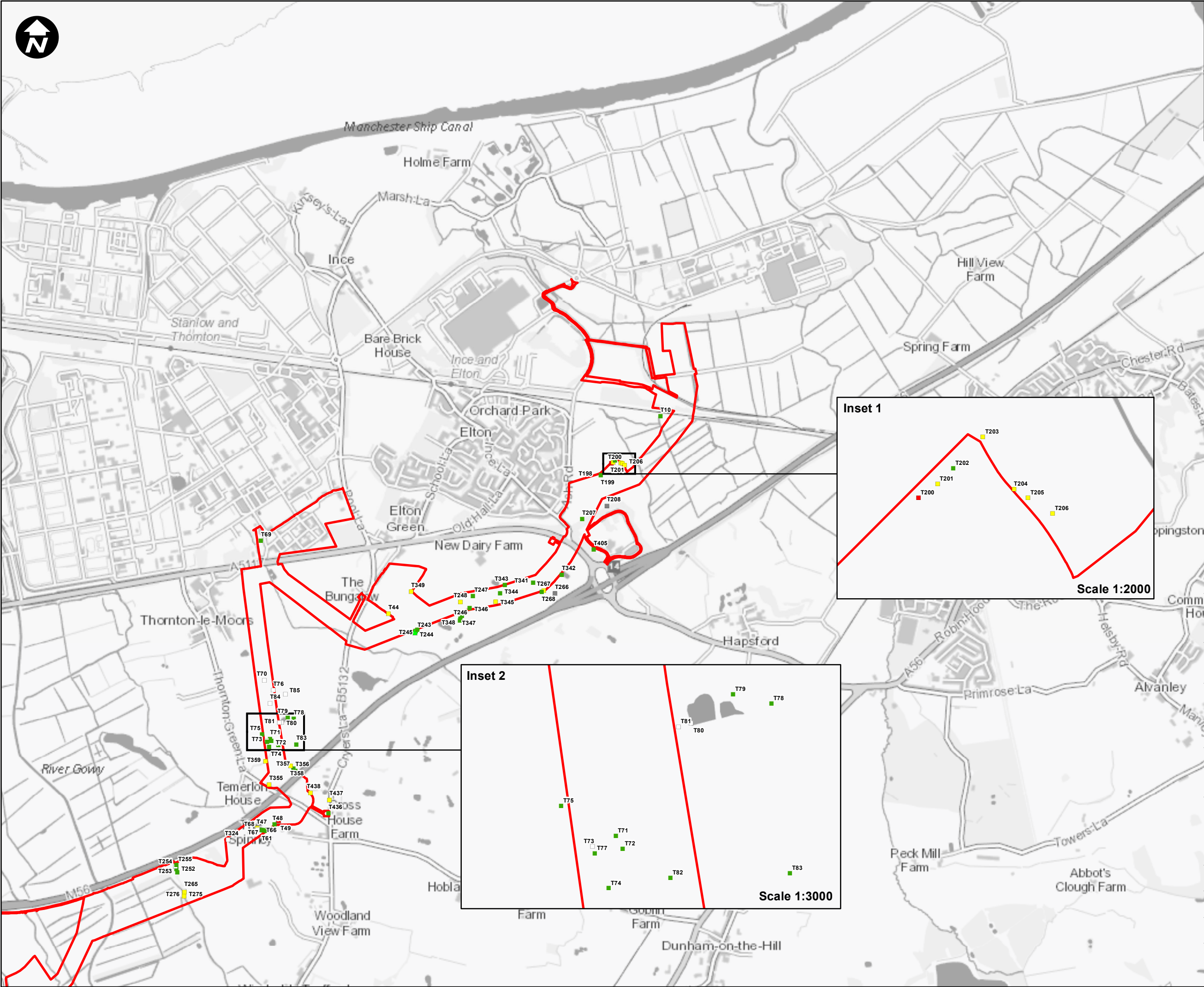
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Figure 9.3.1 - Structures with Suitability to Support Bat Roosts Sheet 6 of 6

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**BBS Points**

**Suitability**

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- Likely absent - Moderate
- Low
- Negligible
- Unconfirmed

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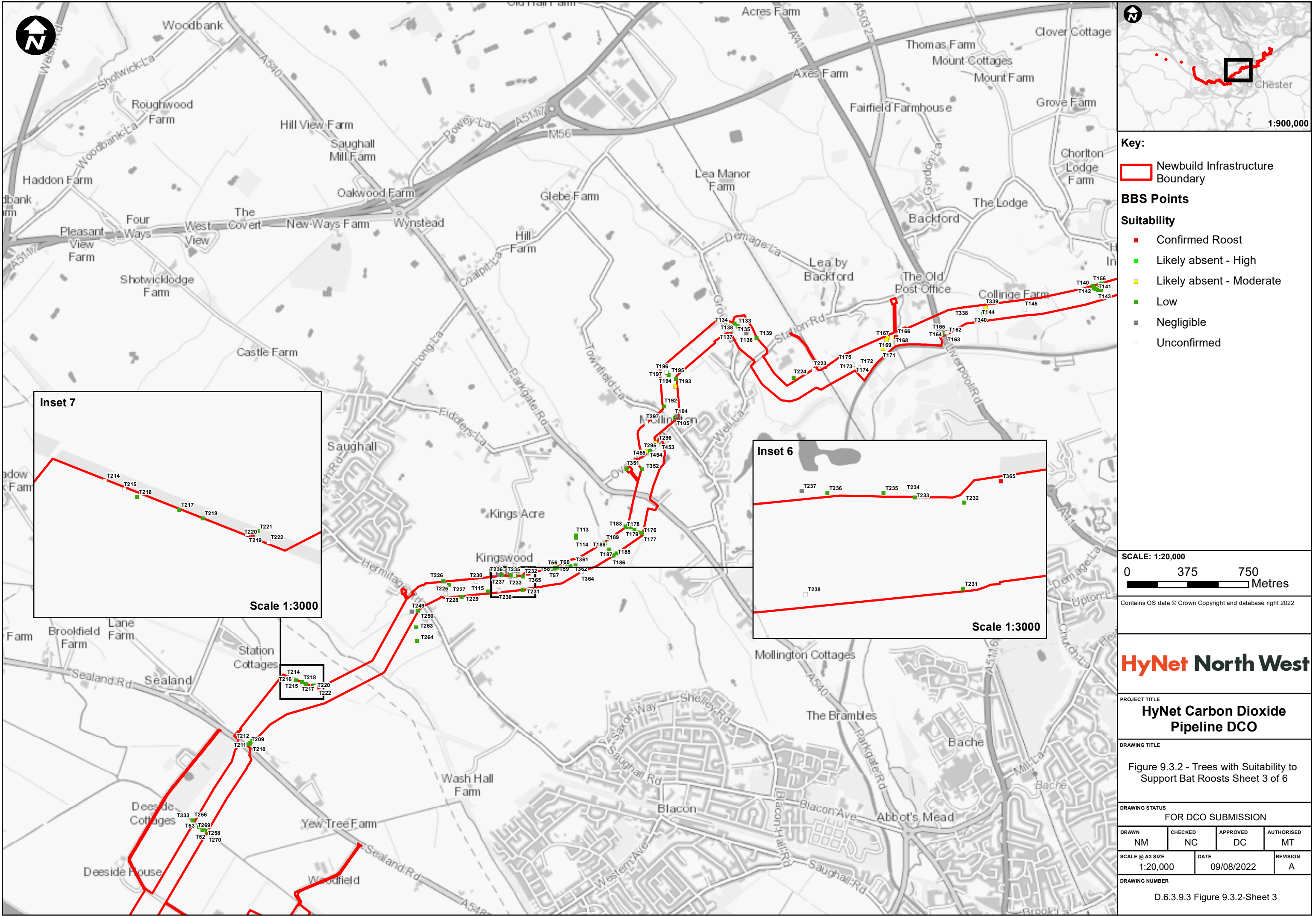
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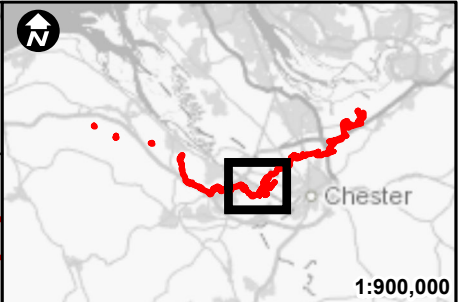
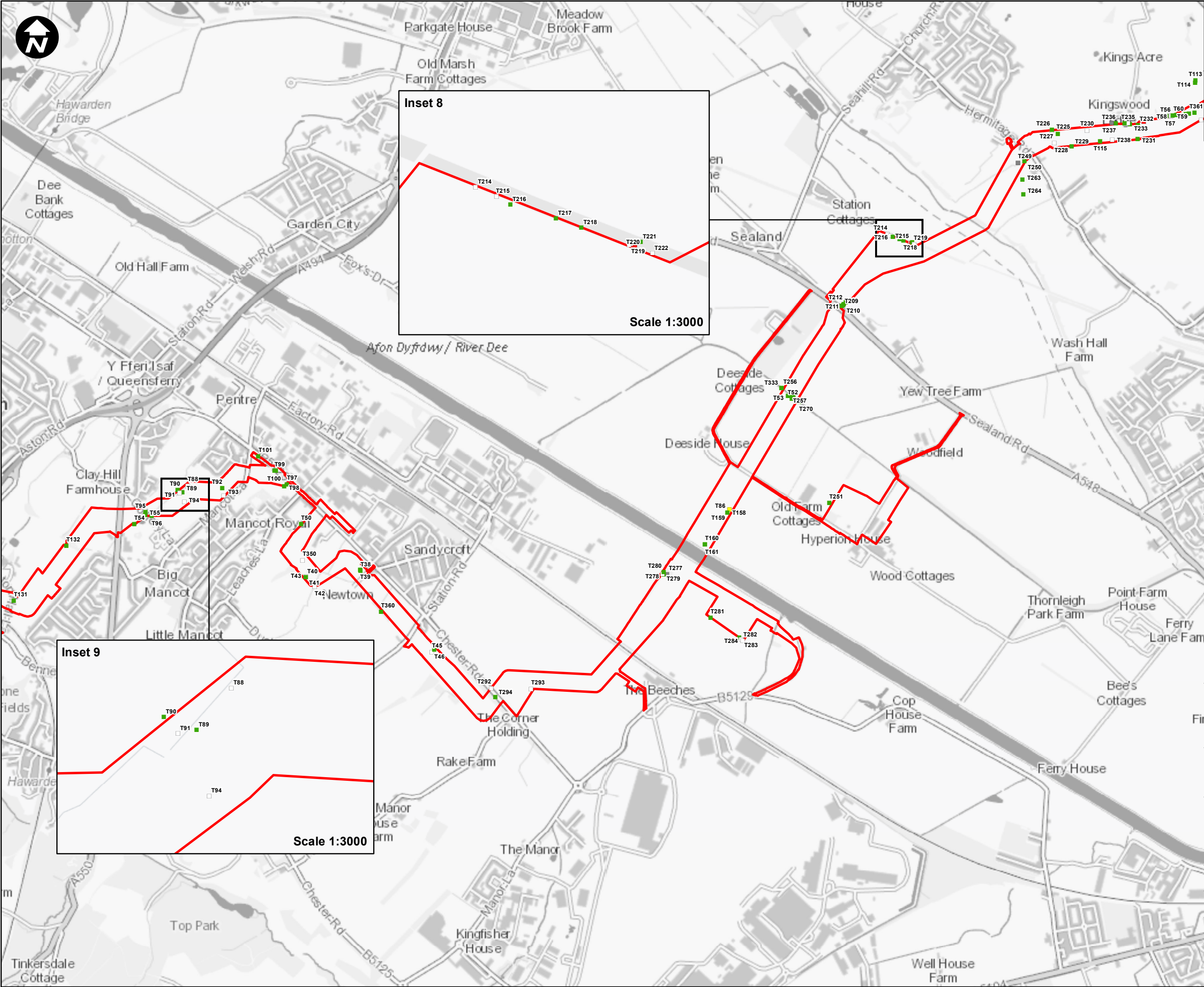












**Key:**

Newbuild Infrastructure Boundary

**BBS Points**

**Suitability**

- Confirmed Roost
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- Likely absent - Moderate
- Low
- Negligible
- Unconfirmed



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Figure 9.3.2 - Trees with Suitability to Support Bat Roosts Sheet 4 of 6

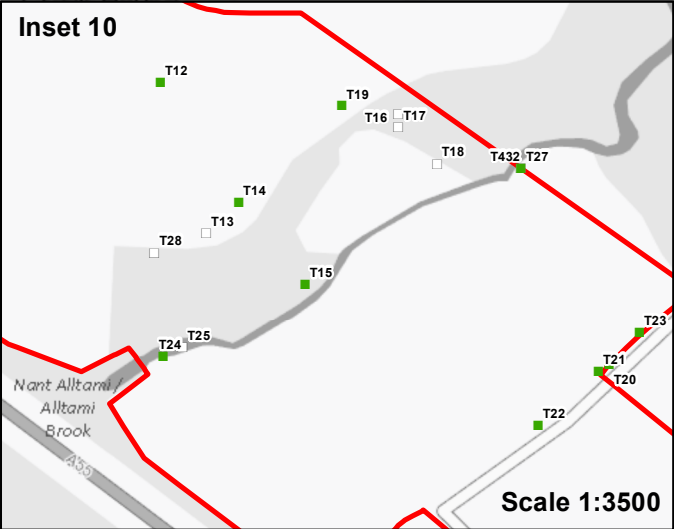
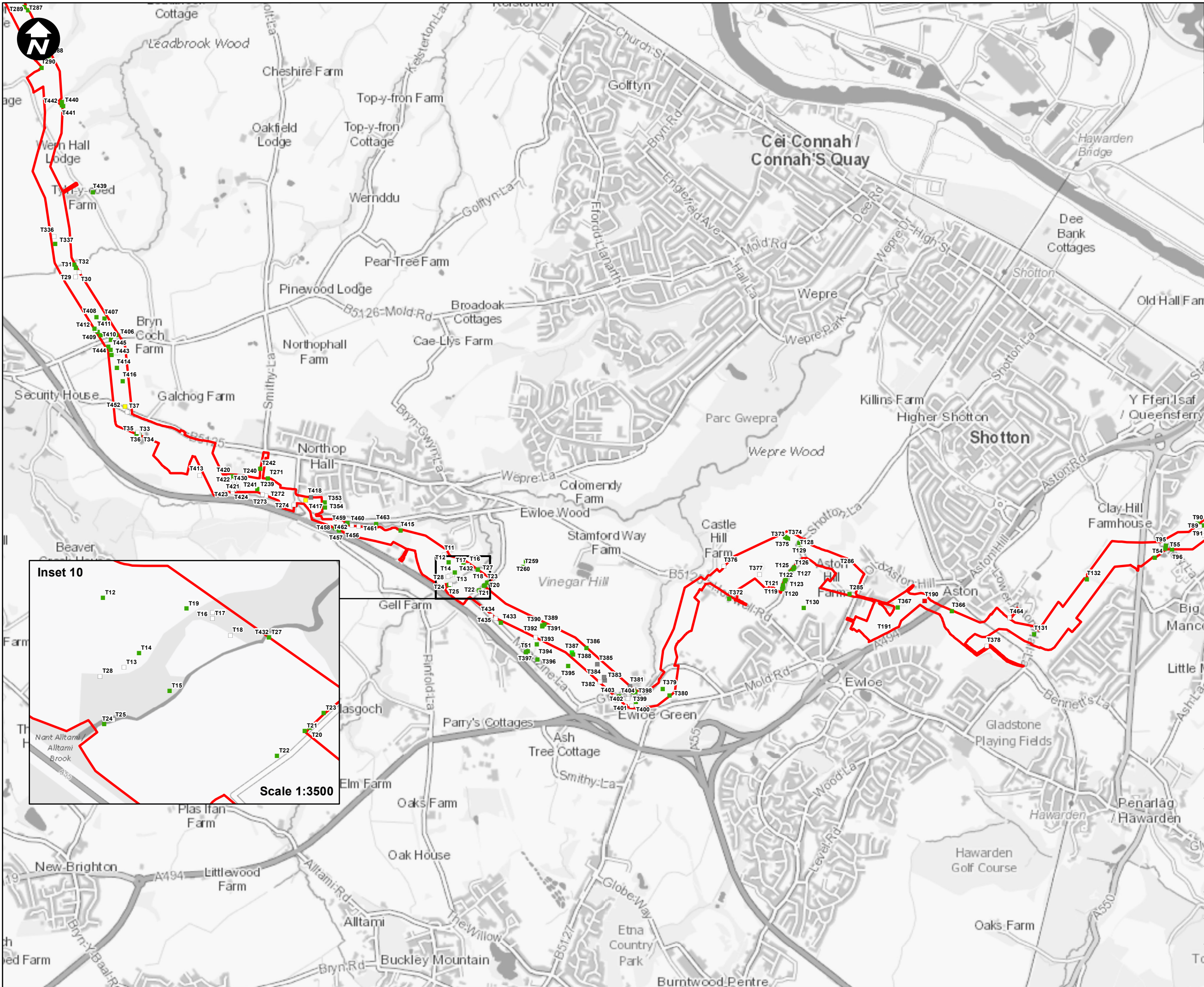
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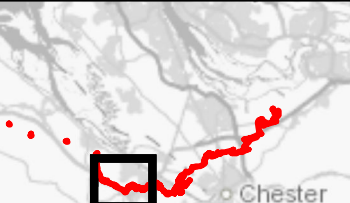

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D.6.3.9.3 Figure 9.3.2-Sheet 4







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**Key:**

- Newbuild Infrastructure Boundary

**BBS Points**

**Suitability**

- Confirmed Roost
- Likely absent - High
- Likely absent - Moderate
- Low
- Negligible
- Unconfirmed

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**PROJECT TITLE**

HyNet Carbon Dioxide Pipeline DCO

**DRAWING TITLE**

Figure 9.3.2 - Trees with Suitability to Support Bat Roosts Sheet 5 of 6

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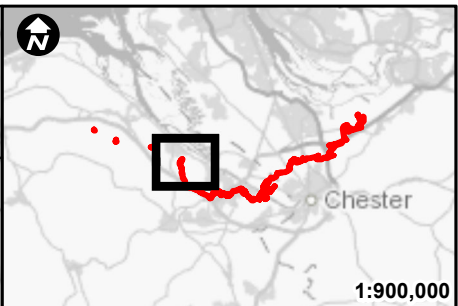
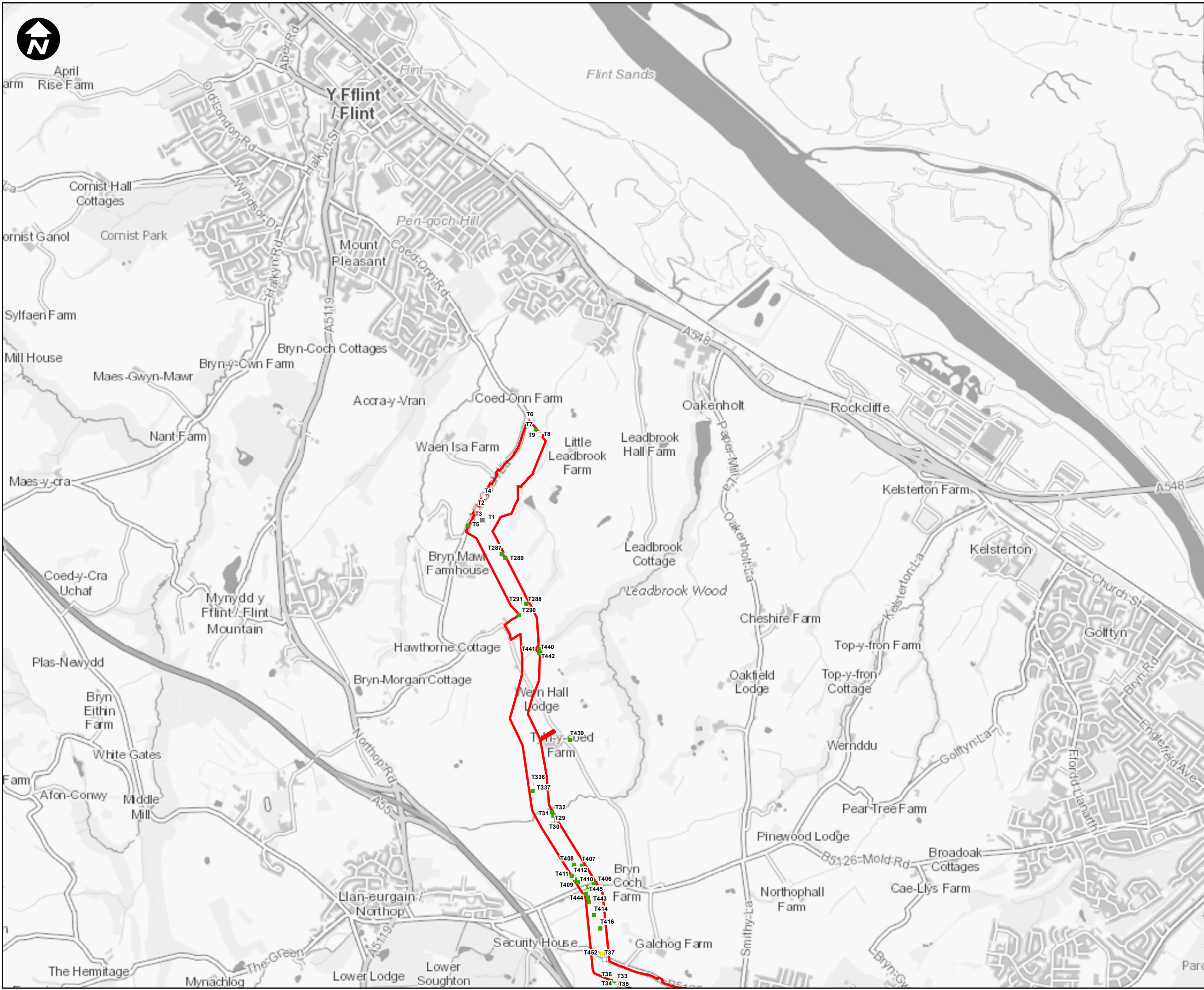
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D.6.3.9.3 Figure 9.3.2-Sheet 5





**Key:**

Newbuild Infrastructure Boundary

**BBS Points**

**Suitability**

- Confirmed Roost
- Likely absent - High
- Likely absent - Moderate
- Low
- Negligible
- Unconfirmed

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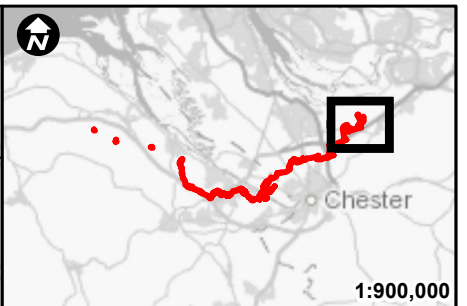
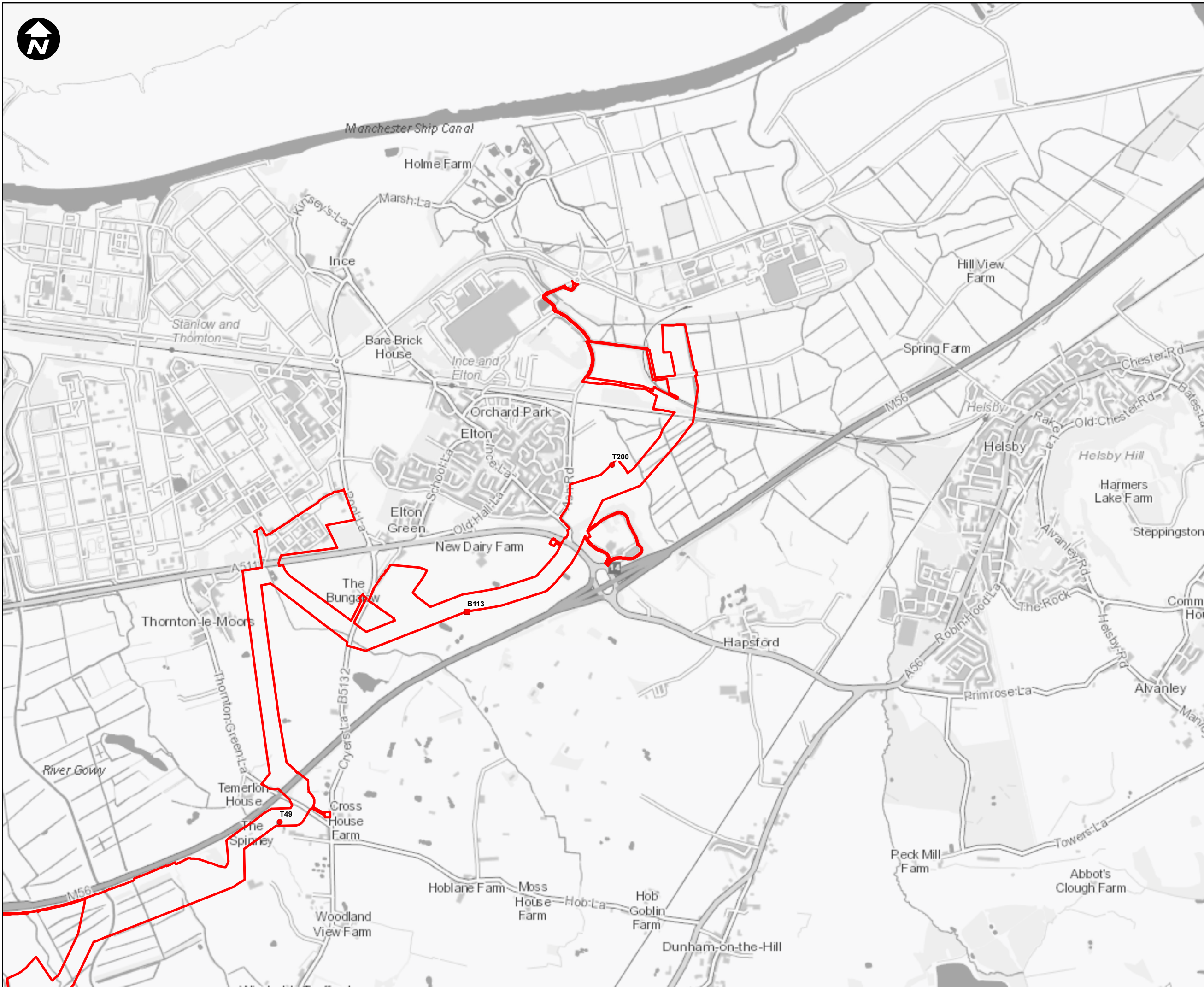
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D.6.3.9.3 Figure 9.3.2-Sheet 6			





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**Key:**

Newbuild Infrastructure Boundary

**BBS Points**

**Suitability**

- Day roost (Structure)
- Maternity Roost (Tree)
- Day roost (Tree)
- TBC - surveys ongoing (Tree)

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**HyNet Carbon Dioxide Pipeline DCO**

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Figure 9.3.3 - Confirmed Bat Roosts  
Sheet 1 of 6

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